DRAFT
ENVIRONMENTAL IMPACT REPORT

NORTH VINEYARD STATION SPECIFIC PLAN

JULY, 1997

County Control Number: ***93-SFB-0238***
State Clearinghouse Number: SCH #96032057

Sacramento County
Department of Environmental
Review and Assessment

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PREPARED BY THE

DEPARTMENT OF ENVIRONMENTAL REVIEW AND ASSESSMENT

COUNTY OF SACRAMENTO
DEPARTMENT OF ENVIRONMENTAL REVIEW AND ASSESSMENT

DENNIS E. YEAST
DIRECTOR

July 22, 1997

TO: **All Interested Parties**

SUBJECT: **DRAFT ENVIRONMENTAL IMPACT REPORT FOR NORTH VINEYARD STATION SPECIFIC PLAN (CONTROL NUMBER: 93-SFB-0238)**

The subject Draft Environmental Impact Report (DEIR) is attached hereto for your review and comment. Reviewers should focus on the sufficiency of the Environmental Impact Report in discussing possible impacts upon the environment, ways in which adverse effects might be minimized, and alternatives to the proposed project.

Reviewers who wish to comment on the Draft EIR are urged to submit written comments to this office by **September 5, 1997**. Failure to do so will not preclude your right to testify at the public hearings tentatively scheduled to begin before the Policy Planning Commission in mid-August, 1997. Please call the Commission Secretary at (916) 440-7891 to confirm the date, time and place of the hearing.

Please contact Joyce Horizumi of this office at (916) 440-7914 if you have questions concerning this Draft EIR.

Sincerely,

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Director

(930238.ltr/dp)

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Draft

Environmental Impact Report

for

NorthVineyard

Station Specific Plan

Control Number: 93-SFB-0238

Assessor's Parcel Numbers: N/A

This Environmental Impact Report has been prepared pursuant to the California Environmental Quality Act of 1970 (Public Resources Code Division 13). An Environmental Impact Report is an information document which, when its preparation is required by this division shall be considered by every public agency prior to its approval or disapproval of a project. The purpose of an Environmental Impact Report is to provide public agencies with detailed information about the effect which a proposed project is likely to have on the environment; to list ways in which any adverse effects of such a project might be minimized; and to suggest alternatives to such a project.

Prepared by the
COUNTY OF SACRAMENTO
DEPARTMENT OF ENVIRONMENTAL REVIEW AND ASSESSMENT
827 7th Street, Room 220
Sacramento, California 95814

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INTRODUCTION

This Master Environmental Impact Report (EIR) assesses the potential environmental effects of the proposed North Vineyard Station Specific Plan (NVSSP) pursuant to the California Environmental Quality Act of 1970 (CEQA, as amended). This EIR assesses the expected individual and cumulative impacts of the ultimate environmental changes resulting from development taking place in conformance with the proposed Specific Plan, identifies means of minimizing potential adverse impacts, and evaluates reasonable alternatives to the proposed project.

The information in this introduction is intended to provide a framework for evaluation of the material contained herein. This introduction section includes the following discussion:

- Use of Master EIRs
- Specific Plan Authority
- NVSSP Implementation Mechanisms

Master EIR.

Assembly Bill 1888 of the 1993 legislative session establish the Master EIR. A Master EIR is intended to provide a detailed environmental review of plans and programs upon which the approval of subsequent related development proposals can be based. A Master EIR must, to the greatest extent feasible, evaluate the cumulative impacts, growth inducing impacts, and irreversible significant effects on the environment of specific, subsequent projects. Pursuant to AB 1888 the review of subsequent projects which have been described in the Master EIR can be limited to the extent that the Master EIR has already reviewed project impacts and set forth mitigation measures (Public Resources Code Section 21156).

This EIR has been prepared as a Master EIR and intended to be used in accordance with the provisions of Public Resources Code Sections 21157, 21157.1 and 21157.6. A Master EIR enables the County of Sacramento to perform limited environmental review of subsequent projects under the following circumstances:

- the subsequent projects are described in the Master EIR as being part of the scope of the Master EIR;
- the County is the lead agency for the subsequent project; and
- the County would prepare an initial study analyzing (1) whether the subsequent

project may cause any significant effect on the environment that was not examined in the Master EIR, and (2) whether the subsequent project was described in the Master EIR as being within the scope of the Master EIR.

Specific Plans Contents & Purpose.

Specific Plans are authorized by California Government Code (Section 65451) which specifies its minimum contents:

(a) A Specific Plan shall include a text and a diagram or diagrams which specify all of the following in detail:

(1) The distribution, location and extent of the uses of land including open space, within the area covered by the plan.

(2) The proposed distribution, location and extent and intensity of major components of public and private transportation, sewage, water, drainage, solid waste disposal, energy and other essential facilities proposed to be located within the area covered by the plan.

(3) Standard and criteria by which development will proceed, and standards for the conservation and utilization of natural resource, where applicable.

(4) A program of implementation measures including regulations, programs, public works projects, and financing measures necessary to carry out paragraph (1), (2), and (3).

(b) The Specific Plan shall include a statement of relationship of the Specific Plan with the General Plan.

California law also provides that a Specific Plan may include optional contents to "address any other subjects which in the judgement of the planning agency are necessary of desirable for the implementation of the General Plan."

As stated in County Ordinance SCC-098, the purpose of the Specific Plan process "is to provide an application tool for use in implementing the County's General Plan on an area-specific basis. A Specific Plan prepared in accordance with the regulatory document, with policy direction and project development concepts consistent with the County's General Plan, and development standards and zoning included to address the unique situations within the Specific Plan area to provide regulatory controls."

In the event there is a discrepancy between standards adopted within a Specific Plan and

comparable regulations of the County of Sacramento's Zoning Code or development standards, the standards and regulations made part of the Specific Plan shall prevail.

NVSSP Implementation.

This section has been taken from Chapter 11 of the NVSSP document, which describes the proposed mechanisms for implementing the NVS Specific Plan, if adopted.

The NVSSP represents the "master plan" for the Plan Area. Subsequent to adoption of the Specific Plan, individual project applications will be reviewed to determine consistency with the Specific Plan and other regulatory documents. Anticipated individual applications include tentative maps, commercial or industrial development plans, use permits, and variances as well as development agreements, annexation requests, and minor or major general plan amendments and rezone requests.

Future development applications in the Plan Area will be submitted directly to the Planning Department for an initial review for completeness and consistency with the Specific Plan. The Planning Department will then forward the project application to the Department of Environmental Review and Assessment (DERA) which then reviews the application for compliance with CEQA. The NVSSP Master EIR will serve as the "master" environmental assessment document for the Plan Area as noted in the previous discussion.

The following discussion details the initial project review and environmental review submittal procedures. Projects submitted for consideration will be reviewed for consistency with any development standards, design guidelines, mitigation measures and other applicable conditions of approval which were adopted as part of the Specific Plan.

Development Agreements.

Subject to the provisions of this Specific Plan, the property owners and the County may execute Development Agreements in accordance with Government Code and local ordinance. The Development Agreements will set forth the infrastructure improvements, public dedication requirements, landscaping amenities, and other contributions to be made by a property owner in return for guarantees by the County that certain land uses and densities in effect at the time of execution of the agreement will not be modified.

Amendment Procedures.

Applications for amendments submitted by property owners shall be accompanied by a Specific Plan processing fee to be determined by the County Board of Supervisors. This fee would be in addition to existing fees for accompanying development applications.

Scope of Amendment.

Amendments to the Specific Plan, once adopted, should be categorized as either minor or major. This determination is to be made by the Planning Director or his/her designee. Minor amendments can be reviewed and acted upon by the Planning Director with no Planning Commission or Board review, unless appealed by the applicant. Amendments to the Specific Plan can include, but are not limited to, changing land use designations, design criteria, development standards or policies. The Planning Director shall determine the limits and acceptability of any proposed amendment to the Specific Plan.

Major Amendments.

Applications for major amendments to the adopted Specific Plan shall conform to the requirements set forth in the Specific Plan Ordinance and Procedures and Preparation Guide, Chapter 21.14 of the Sacramento County Code. The materials and documents necessary to process a major amendment application should be consistent with those outlined in the Specific Plan Ordinance (Chapter 21.14 of the Sacramento County Code), Section 21.14.060. A detailed justification statement shall be submitted which explains in detail why an amendment to the Specific Plan is warranted. All requirements of CEQA will be applicable.

A major amendment to the Plan is required when:

- A new type of land use not specifically discussed in this Specific Plan is introduced.
- Significant changes to the distribution of land uses or other changes affecting land use which may substantially affect the key planning concepts set forth in this Specific Plan.
- Significant changes to the street circulation system that would substantially alter the land use or circulation concepts set forth in this Specific Plan.
- Changes to design guidelines and/or development standards which, if adopted, would substantially change the physical character of the Plan area as envisioned by the Specific Plan.
- Any change to the Plan which could significantly increase environmental impacts.

Minor Amendments.

An amendment to the Plan is considered minor when it is determined that the amendment does not have a significant impact on the character of the Plan. Minor amendments to the Plan specifically include the application and development standards (e.g., setbacks, lot size, frontage) within the Plan and the interpretation and implementing of design guidelines.

Minor amendments may be addressed administratively, or may require public notification, hearings, and approval by an appropriate authority.

The Planning Director has the authority to grant a minor amendment to the Plan as an administrative matter. The Director's authority extends to the review of the initial project only, and is valid up until the issuance of the first building permit for any parcel that is created consistent with the Specific Plan.

After issuance of the first building permit for a parcel, a minor amendment to the Plan shall be subject to the review and approval of the Zoning Administrator. Property developers who desire to process a proposal for a minor amendment shall submit the appropriate application to the Planning Department.

Decisions of the Planning Director and Zoning Administrator may be appealed to the appropriate review authority in accordance with standard appeal procedures.

Enforcement.

The Specific Plan includes a considerable number of development regulations and environmental mitigation measures. Assurances must be made that adequate enforcement mechanisms are in place to ensure that all adopted regulations and mitigation measures are adhered to. If a field inspection is conducted and a particular requirement has not been satisfactorily completed, or site development activities have been undertaken that are not performed as mandated in the Specific Plan and EIR, County staff may ensure completion or correction of the development activity through actions including, but not limited to, the following:

- Meeting with the project proponent to negotiate timing or corrective action in the context of established Sacramento County Planning Department Zoning Enforcement procedures.

- Issuance of a stop work order which will not be lifted until signed by the County.

- Apply the measures of any County enforcement ordinances based upon the police power to protect the public's health, safety and welfare.

- Require performance bonds for landscaping, tree preservation, wetland preservation, or other items determined appropriate by County staff.

- Revocation of use permits or other similar actions may occur if violations are discovered by County staff.

- Denial of subsequent approvals necessary to complete and occupy the project may be

recommended by County staff.

- Initiation of any enforcement or penalty provisions in applicable development agreements will be carried out by County staff.

- Request for legal action by the County Counsel's office.

Mitigation Monitoring.

The California Environmental Quality Act requires all state and local agencies to establish reporting and monitoring programs for projects approved by a public agency whenever approval involves adoption of either a mitigated negative declaration or specified environmental findings related to environmental impact reports. For Sacramento County, the appropriate department for establishing and maintaining this program is the Department of Environmental Review and Assessment.

The Mitigation Monitoring and Reporting Program (MMRP) is intended to satisfy the requirements of CEQA as they relate to the final Environmental Impact Report for the North Vineyard Station Specific Plan, prepared by Department of Environmental Review and Assessment. This monitoring program is intended to be used by County staff and the project developers in ensuring compliance with adopted mitigation measures during project implementation.

Monitoring and documenting the implementation of mitigation measures will be coordinated by DERA staff. DERA staff will monitor mitigation implementation as outlined in the recorded MMRP for the North Vineyard Station Specific Plan.

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EIR Focus

The Environmental Impact Report (EIR) will focus on impacts involving land use, traffic/circulation, air quality, noise, drainage/flooding, sanitation, water supply/distribution, public services, hazardous materials, biological resources and cultural resources. Technical studies/analysis noted in the project description were utilized in the environmental review process. In addition to the Preferred Plan, the -10% Alternative Plan, the -15% Alternative Plan, and the Modified Core Alternative Plan identified in the project description, the EIR has also identified other project alternatives consistent with the California Environmental Quality Act (CEQA).

Intended Uses of the EIR

The EIR will be used as an informational document to the public and by the Sacramento County Policy Planning Commission and Board of Supervisors in evaluating the proposed project and rendering a recommendation or decision to approve, deny, or modify the requested General Plan and Community Plan amendments, Transportation Plan diagram Amendment, Zoning Ordinance Amendment, Capital Improvement Program, Drainage Master Plan, Water Supply Master Plan, and Sewer Master Plan.

In addition the EIR will be used as an informational document to the public and by other responsible agencies including, but not limited to: the Local Agency Formation Commission (LAFCo) and the Board of Directors for: the Sacramento County Water Agency; the Sacramento Regional County Sanitation District; and the County Sanitation District No. 1.

EXECUTIVE SUMMARY AND MITIGATION MEASURES

Project Description

The project/Plan Area encompasses 1,590± acres of the Vineyard Community Planning Area. The Plan Area is bounded by Florin Road to the north, Gerber Road and/or Gerber Creek on the south, the northerly extension of Vineyard Road on the east, and generally by Elder Creek on the west (see Plate PD-A).

Preferred Specific Plan.

The proposed plan is the Preferred Specific Plan developed by the project co-sponsors. The Preferred Specific Plan consists of a 6,339-dwelling unit (DU) residential land use plan with supporting commercial, business professional, park, school, and open space uses. The urban core and focus area of the Preferred Plan, is located on the north side of Gerber Road and west of the Central California Traction Railroad, along a portion of Gerber Creek. The Preferred Plan urban core and focus area includes commercial, business professional, and multi-family residential uses located in relative close proximity to the railroad tracks and Gerber Creek. Proposed urban core and focus area uses include a transit station, park and ride lots, a park plaza and a drainage parkway and related amenities along Gerber Creek. The Preferred Plan includes two elementary school sites, one on each side of Bradshaw Road, and several community and neighborhood parks. The Preferred Specific Plan: Land Use Plan (graphic) is shown on Plate PD-B.

10% Density Reduction Specific Plan Alternative (-10% Alternative).

The 10% Density Reduction Specific Plan Alternative, or "-10% Alternative", is in response to direction by the Board of Supervisors to prepare a land use plan that proposes a ten percent reduction in residential dwelling unit yield from that depicted on the Preferred Plan. The -10% Alternative plan land use pattern is essentially the same as the Preferred Plan, but with reduced residential densities. The reduction in overall residential densities is accomplished by converting 45.4 acres of medium density residential uses and 287.3 acres of single family low density residential uses of 4 to 7 dwelling units per acre to single family density of 1 to 5 dwelling units per acre. In addition, approximately 8.5 acres of 'Park' acreage is also converted to single family low density residential use of 1 to 5 dwelling units per acre.

The overall residential capacity of the -10% Alternative Plan is 5,759 dwelling units, 580 units less than the Preferred Plan. There is no medium density (4-7 du/ac) residential use

in the -10% Alternative Plan. The urban core and focus area acreages remain generally the same as the preferred plan. The -10% Alterative is presented on Plate PD-C. Table PD-1 provides an acreage and/or dwelling unit (DU) comparison summary of the Preferred Plan and the -10% Alternative Plan land uses, as well as the-15% Alternative Plan..

15% Density Reduction Specific Plan Alternative (-15% Alternative).

The general character of the 15% Density Reduction Specific Plan Alternative is a plan that provides a 15 percent reduction of the overall residential capacity of the Preferred Plan as requested by the Board of Supervisors. Similar to the -10% Plan, the land use pattern is generally the same as the Preferred Plan, but with further reduction of the Preferred Plan residential densities. The reduction in overall residential densities is accomplished by converting 45.4 acres of medium density residential uses and 287.3 acres of single family low density residential uses of 4 to 7 dwelling units per acre to single family density of 1 to 5 dwelling units per acre. In addition, approximately 12 acres of 'Park acreage is also converted to single family low density residential use of 1 to 5 dwelling units per acre.

The overall residential capacity of the -15% Alternative Plan is 5,384 dwelling units, 991 units less than the Preferred Plan and 403 units less than the -10% Alternative Plan. There are no medium density (4-7 du/ac) units included in the-15% Alternative just as in the -10% Alternative Plan. The -15% Plan is presented on Plate PD-D. Table PD-1 provides an acreage and/or dwelling unit (DU) comparison summary of the Preferred Plan and the -15% Alternative Plan, as well as the -10% Alternative Plan.

Modified Core Specific Plan Alternative.

The Modified Core Specific Plan Alternative or Core Relocations Alternative (Plate PD-E.1 and Plate PD-E.2), proposes relocation of the core area's mix of commercial, business professional, and multi-family residential uses from the south-west Plan Area (Waterman Road, Gerber Road/Creek area) to the north-central Plan Area (Bradshaw Road and Florin Road). However, the transit station, park and ride lots, and park plaza remain adjacent to the Central California Traction Railroad. The modified core area contains the same relative mix of commercial, business professional, multi-family residential, and public/quasi-public land uses as the Preferred Plan core area. However the modified core alternative does not include any drainage parkway features or improvements adjacent to the urban core and focus area as does the Preferred Plan. The Modified Core Specific Plan Alternative may be combined or overlayed with the Preferred Specific Plan, the -10% Alternative, or the -15% Alternative.

Land Use

The County General Plan Land Use Element recognizes that the demand for land has created a number of problems in Sacramento County. These problems include an increased consumption of open space, deteriorating air quality, decrease in housing affordability, degradation of public facilities, and increase in traffic congestion. The General Plan also notes that efficient land and resource use in Sacramento County can best be achieved by being committed to a mitigating pattern of land use that concentrates development in configurations designed to protect valuable agricultural lands, conserve natural resource areas, reduce automobile travel distances and related air pollution, as well as conserve energy, and enhance the efficient provision of infrastructure and services.

The Preferred Plan and Alternatives may not meet several General Plan goals, objectives and policies which are intended to maximize efficiency in land use and improve community identity as the projected growth needs of the County are accommodated during the 20-year planning horizon. The densities and land use patterns proposed are similar to the low density development typical other suburban communities. The Preferred Plan and Alternatives are land consumptive and auto-oriented, which tends to exacerbate traffic and air quality impacts; however, these impacts were acknowledged during update of the County General Plan when the subject Specific Plan area was designated for growth. In order to minimize further environmental degradation, it is essential that the projected growth needs of the General Plan are met within approved urban growth areas. If the designated growth areas are not developed to their full potential, direct, adverse physical impacts to the environment could occur through the further loss of agricultural lands and open space/natural habitat areas.

In conclusion, potential land use compatibility impacts associated with holdover agricultural-residential or general agricultural uses located both within and just outside the Urban Development Area ***can be mitigated to less than significant levels*** through implementation of General Plan policies, proposed Specific Plan policies and established Zoning Code development standards.

Land use impacts resulting from non-compliance with General Plan goals, objectives and policies are considered ***potentially significant and adverse.*** Mitigation of potential land use impacts to a less than significant level would required redesign of the Plan area to be consistent with the intent of the General Plan for new growth areas. This issue is discussed further in the Alternatives section of this document.

Mitigation Measures.

In order to ensure consistency between the proposed project and the County General Plan Policy Document and related General Plan Land Use Diagram the following Land Use mitigation measures are recommended:

LU-1 The final General Plan Diagram should be modified to include at least one General Plan TOD land use designations/locations.

LU-2 Consideration should be given to designating a higher density multi-family residential category such as MFR/23-30 which still falls with the General Plan Medium Density Residential category (13-30 du/ac).

LU-3 The final General Plan Diagram shall be modified to include a Recreation/Open Space designation that corresponds to the proposed drainage parkway areas, storm detention basin sites, and the Bradshaw Ranch Golf Course on Bradshaw Road, in order to ensure consistency between the proposed land use plans and the proposed General Plan diagrams with regard to Recreation/Open Space land uses.

LU-4 The final General Plan Diagram shall be modified to include a Community Park site or other park sites that resolve differences between the proposed specific plan and the Southgate Park District's requirements.

Public Services

The following is a discussion of public facilities and service supply/demand issues related to the project. Some of the service providers have submitted comments pertaining to their ability to provide service to the project, including recommended conditions of approval that must be satisfied by the developer before service can be adequately provided. It should be noted that public facility financing, drainage, water supply and sewer service are discussed in separate sections of this EIR.

Energy Facilities and Services.

The Sacramento Municipal Utility District (SMUD) provides electric service to the project site and most of the Sacramento metropolitan area while the Pacific Gas and Electric Company (PG&E) provides natural gas service in Sacramento County and 48 other surrounding counties.

Project impacts to existing energy facilities are expected to be ***less than significant*** with the coordination of energy providers, planners and developers. Future development of property within the Plan area will be subject to project specific review and the implementation of any conditions deemed appropriate at that time. With implementation of project specific conditions and coordination with providers, impacts to energy facilities and services are considered less than significant.

Fire Protection.

The Plan area is located within the service boundaries of the Florin Fire Protection District. Future development of property within the Plan area will be subject to project specific review and the implementation of any conditions deemed appropriate at that time. With implementation of project specific conditions and coordination with providers and planners, impacts related to fire protection and emergency rescue service are considered ***less than significant.***

Sheriff's Patrol Services.

The Sheriff's Department provides specialized law enforcement services to Sacramento County and local police protection to the unincorporated area. Local police protection includes response to calls and trouble spots, investigations, surveillance, and routine patrolling.

Demand for local police protection exceeds the supply of resources. Demand results from population growth; increased rates of crime, particularly major crimes and crime associated with use and sale of drugs; and services mandated by the State and the Courts. Supply of resources is linked primarily to the County General Fund. Growing demand and a relatively slower growing resource base has led to an inability to maintain historic levels of service. While population and the number and severity of crimes has increased substantially in the past ten years, the number of patrol officers has increased less than one percent.

Although law enforcement service is available to serve the Plan area, staffing will not meet service standard levels. To assist in reducing crime levels and the strain on law enforcement resources, the Plan area should be designed with safety as a prime consideration. Coordination with the Sheriff's Department, planners and developers for future development with the Plan area will lessen impacts to police protection services to a ***less than significant level.***

Schools.

The project site is served by the Elk Grove Unified School District. As shown on the Proposed Parks and Public Use Plan (Plate PS-A), two elementary school sites, one east and one west of Bradshaw Road and each adjoined to a neighborhood park, are proposed within the Plan area.

Future development has the potential to impact school facilities in the area due to increased enrollment. However, until specific development proposals are made, it is difficult to accurately assess impacts to specific school sites and/or facilities. Future development of property within the Plan area will be subject to project review and the implementation of any conditions relative to school funding deemed appropriate at that time. Funding for schools and other public facilities is addressed in the Public Facilities Financing section of this EIR.

Library Services.

The Plan area is served by the Sacramento Public Library. The nearest existing facility is the Southgate Library located on 65th Street, south of Florin Mall Drive. According to the Public Review Draft of the Specific Plan (1997):

> The Library Master Plan makes no provision for a library in the Plan area. However, the 4.9 acre Public Services site could accommodate a library branch. Funds will be collected and designated for library use. Section 10.0 Capital Improvement Program and Financing Strategy describes financing relative to library facilities.

The Public Review Draft also includes the following policies for library service:

1. Encourage the provision of adequate library facilities in convenient proximity to Plan area residents.

2. A branch library shall be accommodated within the Public Services site, if deemed appropriate by the County.

Implementation of the above Specific Plan policies should help to minimize impacts to surrounding existing libraries from the development of the Plan area ***to a less than significant.***

Parks and Open Space.

The local governing body for management of public park land in the Plan Area is the Southgate Recreation and Park District. The Public Review Draft of the Specific Plan (1997) indicates that currently there are no parks within the boundary of the Plan Area. The nearest existing park facilities are Churchill Community Park, located one mile south of the Plan Area, and Sunrise-Florin Park, located one mile to the west. Park facilities planned in the vicinity of the area are George P. Dunmore Park, located one-half mile to the east on Excelsior Road, Laguna Creek Trail system to the southeast, and a golf course proposed within the Vineyard Springs area.

Future development has the potential to impact existing and planned park site facilities in the area, as well as creating the need for additional facilities, due to increased resident population. However, until specific development proposals are made, it is difficult to accurately assess impacts to specific sites and/or facilities. However, ***no significant impacts*** to recreational opportunities for existing and future rendents are expected.

Solid Waste Disposal.

The Sacramento County Landfill is the primary landfill for all solid waste generated within the unincorporated areas of the County. This 650± acre landfill, located at Kiefer Boulevard and Grant Line Road, is a Class II-2 facility, meaning that it can accept wastes that consists of chemically biologically decomposable material which will not significantly affect groundwater quality; no hazardous materials are allowed in this facility. The landfill is estimated to reach its capacity in the year 2001. The County, however, is seeking an expansion permit to provide landfill services through the year 2035.

The Public Review Draft of the Specific Plan (1997) indicates that "on the basis of the project Plan area residential population only, ultimate development of the Plan area can be expected to result in 44.1 tons of solid waste per day. No solid waste transfer of disposal facilities are proposed within the Plan area."

The Public Review Draft also suggests the following policies regarding solid waste disposal within the Plan area:

1. Recycling of residential and commercial solid waste should be promoted and encouraged within the Plan area.

2. Residential developments shall be designed to facilitate the use of automated solid waste collection trucks.

3. All residential project shall be designed so that solid waste containers can be hidden from street view.

Implementation of the recommended policies will ensure that impacts from solid waste disposal resulting from development within the project area will be ***less than significant.***

Public Facilities Financing

State Planning and Zoning Laws (California Government Code) require specific plans to identify in detail the essential infrastructure and services needed to support the land uses described in the plan, as well as a program of implementation and financing measures necessary to carry out those improvements (Section 65451).

The project site is not included in any existing Public Facilities Financing Plan area and will therefore require a financing strategy to fund public facilities needed to serve new development in the Plan Area.

Because the NVSSP does not include any rezoning, a financing plan is not required to be part of the project. In fulfilling this requirement to establish a funding mechanism for public facilities within the Plan Area, the proposed Specific Plan includes a financing strategy that establishes a policy framework for the funding of public improvements and infrastructure required to serve new development in the Plan Area. The purpose of the proposed financing strategy is to lay the ground work for the NVSSP Public Facilities Financing Plan (PFFP), which is yet to be completed, and to give the Board of Supervisors sufficient information to make the General Plan/Community Plan level decision. The financing plan to follow will expand upon the financing strategy and provide greater detail on the phasing of improvements and analyze recommended financing mechanisms.

The Public Infrastructure Planning and Financing Section (PIPFS) will provide input during the formulation of the Financing Strategy. After subsequent cooperative review by the Department of Planning & Community Development and Public Works Agency, the Financing Strategy will go through the public hearing process as a component of the Specific Plan project.

At a minimum, the NVSSP Financing Plan is expected to recommend its funding mechanisms for all development projects that will ultimately be approved within the Plan Area, whether for the Preferred Plan, the -10 % Alternative Plan, or the -15% Alternative Plan.

The Financing Plan is tangible to environmental impacts in that it provides the mechanism

to ensure that needed improvements to mitigate traffic, drainage, water supply and other infrastructure/service impacts can be implemented in a timely manner.

Traffic and Circulation

A traffic impact analysis for the proposed project was conducted by Fehr & Peers Associates, Transportation Consultants (October 2, 1996). The study analyzes the impacts of the North Vineyard Station Specific Plan on the existing transportation system in the area. The study assesses the short- and long-term impacts of the project on the local circulation network and describes the improvements required to mitigate operational deficiencies of the transportation system. The technical study is summarized below and is available for review at the offices of the Department of Environmental Review and Assessment.

The transportation study analyzes the impacts of the proposed project on the existing and planned roadway, transit, bicycle, and pedestrian circulation systems. The key findings of the study are summarized below.

- Under **Existing** conditions,, the following intersections operate at unacceptable levels (LOS F) during the a.m. and/or p.m. peak hour.

    - South Watt Avenue at Jackson Road;
    - Bradshaw Road at Jackson Road;
    - Elk Grove-Florin Road at Florin Road; and
    - Elk Grove-Florin Road at Gerber Road.

- Five roadway segments currently experience physical deficiencies based on substandard travel lane and shoulder widths. Existing deficiencies resulting from substandard roadway cross-sections are exacerbated with the addition of project traffic.

- The proposed Preferred Plan will generate 84,037 daily trips, 5,460 a.m. peak hour trips, and 8,663 p.m. peak hour trips. Approximately 20 percent of these trips are expected to remain within the project boundaries.

- The project alternatives (10 percent and-15 percent Low Density Alternatives) would not reduce project impacts to less than significant.

- Without roadway improvements, the addition of project traffic would result in operational deficiencies on five roadway segments and at eight study intersections. Improvements under **Existing Plus Project** conditions include widening the

following roadway segments from two to four lanes:

- Elk Grove-Florin Road from Jackson Road (SR 16) to Gerber Road
- Bradshaw Road from Jackson Road (SR 16) to Gerber Road
- Florin Road from Elk Grove-Florin Road to Waterman Road
- Gerber Road from Elk Grove-Florin Road to Bradshaw Road
- Jackson Road (SR 16) from South Watt Avenue to Bradshaw Road

- Intersection modifications (e.g., lane additions, traffic signal installations) would be required under **Existing Plus Project** conditions at the following locations:

  - South Watt Avenue at Jackson Road (SR 16);
  - Bradshaw Road at Jackson Road (SR 16);
  - Bradshaw Road at Elder Creek Road;
  - Bradshaw Road at Florin Road;
  - Elk Grove-Florin Road at Gerber Road;
  - Bradshaw Road at Gerber Road;
  - South Watt Avenue at Elder Creek Road; and
  - Elk Grove-Florin Road at Florin Road.

- Under **Cumulative No Project** conditions, eight of the study intersections are projected to operate at LOS F during the a.m. peak hour and/or p.m. peak hour. Segments of Excelsior, Elder Creek, and Gerber Roads will experience physical deficiencies based on substandard travel lane and shoulder widths.

  The intersection modifications listed below are required to provide acceptable peak hour operations under **Cumulative Plus Project** conditions.

  1. Construct dual right turn lanes on the eastbound approach and triple left turn lanes on the northbound approach to the Bradshaw Road/Jackson Road intersection. Implementation of this improvement would result in LOS E operation at this location during the a.m. and p.m. peak hour.

  2. Construct Excelsior Road as a four-lane facility between Jackson Road and Florin Road. At the Jackson Road/Excelsior Road intersection, this modification would improve the cumulative plus project LOS from F to E during the a.m. peak hour. The p.m. peak hour LOS with this improvement would still be F; however, the V/C ratio with the project would be 1.04 or 19 percent less than the ratio of 1.24 under no project conditions. The Elder Creek Road widening should include two northbound and southbound through lanes at the Elder Creek Road/Excelsior Road intersection.

Implementation of this improvement would result in LOS C or better operations during the a.m. and p.m. peak hours.

3. Construct dual left turn lanes on the eastbound approach and two through lanes on the northbound approach at the Florin Road/Excelsior Road intersection. This modification, which would require widening of the northbound departure leg to accommodate two lanes, would result in LOS C operation during the a.m. and p.m. peak hour.

4. Construct dual right turn lanes on the westbound approach to the Bradshaw Road/Elder Creek Road intersection. Although this modification does not provide acceptable operations during the p.m. peak hour, it does improve intersection operations with the project by 25 percent.

5. Construct dual right turn lanes on the westbound approach to the Bradshaw Road/Florin Road intersection. Although this modification does not provide acceptable operations during either peak hour with the project, it does result in a.m. peak hour operations that are better than conditions without the project.

Significant & Unavoidable Traffic Impacts:

Even after implementation of the proposed improvements, the following impacts were found to be significant and unavoidable:

1. The proposed project would result in significant and unavoidable impacts on Bradshaw Road between Florin Road and Elder Creek Road since the project volume of 58,500 VPD would exceed the capacity of 54,000 VPD for a six-lane roadway.

2. Implementation of the project under cumulative conditions will result in significant and unavoidable impacts at the following intersections:

   - South Watt Avenue/Elder Creek Road
   - Bradshaw Road/Elder Creek Road
   - Elk Grove-Florin/Florin Road
   - Bradshaw Road/Florin Road
   - Elk Grove-Florin Road/Gerber Road

Transit System Impacts:

Implementation of the proposed project will not disrupt or interfere with expected transit operations in the area and no cumulative impacts were identified. The plan provides for the implementation of future facilities by RT, such as bus operations, light rail, bus turnouts, and transit centers. Impacts due to the proposed project are considered less than significant.

Bikeway and Pedestrian System Impacts:

Both on-street and off-street bikeway and pedestrian facilities are planned throughout the study area consistent with existing plans (General Plan policies and the 2010 Sacramento City/County Master Bikeway Plan). Impacts due to the proposed project are considered less than significant.

Consistency With General Plan and North Vineyard Station Specific Plan Policies:

The proposed transportation plan is consistent with both the General Plan Circulation Element policies and the policies and standards identified in the North Vineyard Station Specific Plan.

Mitigation Measures:

The following improvements are required to enhance operating conditions or to eliminate the projected deficiencies under **Existing with Project** condition:

TR-1 Widen the section of Elk Grove-Florin/South Watt Avenue from Gerber Road to SR 16 from two to four lanes.

TR-2 Widen the section of Bradshaw Road from Gerber Road to SR 16 from two to four lanes.

TR-3 Widen the section of Florin Road from south Watt Avenue to Bradshaw Road from two to four lanes.

TR-4 Widen the section of Gerber Road from Elk Grove-Florin Road to Bradshaw Road from two to four lanes.

TR-5 Widen the section of SR 16 from South Watt Avenue to Bradshaw Road from two to four lanes. This improvement should be constructed when the daily volume on this segment reaches 16,200 VPD or 90 percent of urban arterial capacity.

TR-6 Widen Elder Creek Road between South Watt Avenue and Excelsior Road to include 12-foot travel lanes and minimum 6-foot shoulders to meet Sacramento County design standards for rural arterials.

TR-7 Widen Excelsior Road between Jackson Road and Calvine Road to include 12-foot travel lanes and minimum 6-foot shoulders to meet Sacramento County design standards for rural arterials.

TR-8 Widen Florin Road between Bradshaw Road and Excelsior Road to include 12-foot travel lanes and minimum 6-foot shoulders to meet Sacramento County design standards for rural arterials.

TR-9 Widen Gerber Road Bradshaw Road and Excelsior Road to include 12-foot travel lanes and minimum 6-foot shoulders to meet Sacramento County design standards for rural arterials.

TR-10 Widen Vineyard Road between Gerber Road and Calvine Road to include 12-foot travel lanes and minimum 6-foot shoulders to meet Sacramento County design standards for rural arterials.

TR-11 Widen Calvine Road between approximately 1,300 feet east of Waterman Road to Excelsior Road to include 12-foot travel lanes and minimum 6-foot shoulders to meet Sacramento County design standards for rural arterials. (The section of Calvine Road from Elk Grove-Florin Road to approximately 1,300 feet east of Waterman Road will be widened from two to four lanes as part of a funded project included in Sacramento County's *1996 Transportation Improvement Plan.)*

TR-12 Modify the intersection of South Watt Avenue at Jackson Road to include a separate left turn lane, two through lanes, and a separate right turn lane on all approaches.

TR-13 Modify the Bradshaw Road/Jackson Road intersection to include the following lane configurations:

- Dual left turn lanes, two through lanes, and a separate right turn lane on

the northbound and southbound approaches; and

- One left turn, one through lanes, and a separate right-turn on the eastbound and westbound approaches.

TR-14 Modify the Bradshaw Road/Elder Creek Road intersection to include the following lane configurations:

- One left turn lanes, two through lanes, and a separate right turn lane on the southbound approach;

- One left turn lanes, one through lane, and a shared through/right-turn lane on the northbound approach;

- One left turn and one shared through/right-turn lane on the eastbound approach; and

- One shared left-turn/through lane and one separate right turn lane on the westbound approach.

TR-15 Modify the Bradshaw Road/Florin Road intersection to include the following lane configurations:

- Dual left turn lanes, two through lanes, a separate right turn lane on the northbound and southbound approaches; and

- One left turn lane, two through lanes, and a separate right-turn lane on the eastbound and westbound approaches.

TR-16 Modify the Elk Grove-Florin Road/Gerber Road intersection to include the following lane configurations:

- Dual left turn lanes, two through lanes, and a separate right turn lane on the northbound and southbound approaches;

- One left turn lanes, one through lane, and a separate right-turn lane on the eastbound approach; and

- One left turn lane, one through lane, and a shared through/right-turn lane on the westbound approach.

The provision of northbound dual left turn lanes will require widening of the westbound departure leg on Gerber Road to two lanes before merging to a single travel lane in each direction. The length and merging distance for these lanes shall be approved by Sacramento County Transportation Division staff.

TR-17 Modify the Bradshaw Road/Gerber Road intersection to include the following lane configurations:

- Dual left turn lanes, two through lanes, and a separate right turn lanes on the eastbound and westbound approaches; and

- One left turn lane, two through lanes, and a separate right-turn lane on the northbound and southbound approaches.

The provision of southbound dual left turn lanes will require widening of the eastbound departure leg on Gerber Road to two lanes before merging to a single travel lane in each direction. The length and merging distance for these lanes shall be approved by Sacramento County Transportation Division staff.

TR-18 Install a signal at the South Watt Avenue/Elder Creek Road intersection and modify the lane configurations to the satisfaction of the Sacramento County Transportation Division.

TR-19 Install a signal at the Elk Grove-Florin Road/Florin Road intersection and modify the lane configurations to the satisfaction of the Sacramento County Transportation Division.

The following improvements are required to improve operating conditions under **Cumulative With Project** conditions:

TR-20 Access on Bradshaw Road shall be strictly limited between Florin Road and Elder Creek Road. With the exception of signalized intersections, limited driveway access shall be permitted along this roadway segment.

TR-21 Widen Elder Creek Road between South Watt Avenue and Excelsior Road to include 12-foot travel lanes and minimum 6-foot shoulders to meet Sacramento County design standards for rural arterials.

TR-22 Widen Excelsior road between Jackson Road and Calvine Road to include 12-foot travel lanes and minimum 6-foot shoulder to meet Sacramento County design standards for rural arterials.

TR-23 Widen Gerber Road between Vineyard Road and Excelsior Road to include 12-foot travel lanes and minimum 6-foot shoulders to meet Sacramento County design standards for rural arterials.

TR-24 Construct dual right turn lanes on the eastbound approach and triple left turn lanes on the northbound approach of the Bradshaw Road/Jackson Road intersection. Installation of these improvements should occur when the V/C ratio exceeds 1.00 or the peak hour volume for either movement exceeds roughly 950 vehicles.

TR-25 Modify the northbound and southbound approaches to the Jackson Road/Excelsior Road intersection to include a second through lane. Since the northbound departure leg of this intersection is planned to accommodate two lanes, this improvement would only require modifications to Excelsior Road south of Jackson Road. The southbound departure leg would have to be widened to accommodate two lanes before merging into a single southbound lane. The length and merging distance for the second southbound lanes shall be approved by Sacramento County Transportation Division staff.

Air Quality

There are two main categories of emission sources in any area: stationary and mobile. The main stationary source of CO in Sacramento County is fuel combustion. The main stationary source of ROG in Sacramento County is solvent use, and commercial and industrial fuel combustion represents the largest source of NO_x emissions. Mineral processes (e.g., aggregate extraction) are the largest sources of stationary source PM_{10} emissions in Sacramento County. The main mobile source of CO, ROG, NO_x, and PM_{10} is light-duty passenger vehicles (California Air Resources Board 1995b). Table AQ-2 is a summary of emissions by source for Sacramento County.

Construction Impacts .

Construction activities in the North Vineyard Specific Plan Area would not all occur concurrently. Residential and commercial development in one area may occur several years after construction of another. However, regardless of the schedule, construction activities would generally consist of site grading and preparation, and building construction activities.

Construction employee vehicle trips, equipment exhaust, architectural coating, and asphalt paving activities would represent temporary sources of ozone precursors (No_x and ROG). Construction related air quality impacts are considered potentially significant adverse impact for certain levels of construction activity. Impacts can be reduced to a ***less than significant*** level by applying mitigation measures to reduce dust and exhaust emissions.

Construction Impact Mitigation Measures:

AQ-1 Prepare and implement a dust control plan that includes:
- the use of water or chemical palliatives on disturbed soils;
- the stabilization of soil piles with vegetation or by covering;
- allowing two feet of freeboard and the covering of haul trucks loads;
- conducting no grading during period of high winds exceeding 25 miles per hour

AQ-2 Maintain construction equipment and vehicles in proper running order. Construction contractors shall be required to show written evidence of appropriate maintenance prior to bring equipment on site.

Regional Emissions Impacts.

The development of the North Vineyard Specific Plan area with urban uses would create a source of ozone precursors that would impact the air quality of the region. Area, stationary and mobile sources would also result in emissions of particulates (PM_{10}) that would impact regional air quality.

Project-generated sources of PM_{10} and ozone precursors (NOx and ROG) would primarily consist of vehicle trips attracted to and generated in the Plan area, and to a lesser extent emissions from the combustion of natural gas at residential and commercial developments.

Operational emissions of NO_x , ROG, and PM_{10} would exceed the applicable SMAQMD significance criteria. As shown in Table AQ-3, emissions from mobile sources constitute the majority of emissions associated with the proposed project. Area source emissions alone for ROG and PM_{10} would fall well below applicable significance criteria and NO_x emissions

exceed the standard, but not by a substantial amount. However, mobile source generation of NO_x, ROG, and PM_{10} greatly exceed standards and would be a ***significant adverse impact*** of proposed project under any of the three land use scenarios.

Regional Emissions Mitigation Measures:

Should the proposed plan be approved, the air quality impacts can be lessened somewhat by reducing trip generation and attendant traffic congestion. Travel demand reduction measures would lessen the impact to air quality by either eliminating vehicle trips, reducing their length, or changing the time of day when they occur.

Travel demand reduction measures are incorporated into various aspects of the Plan in order to reduce vehicle emissions, thereby reducing traffic congestion and improving air quality.

Local Air Quality.

Development of the North Vineyard Specific Plan Area would introduce additional vehicular traffic to roadways. The primary local pollutant of concern with respect to vehicle exhaust is CO. Other local pollutants, such as NO_2 and PM_{10}, are also emitted by automobiles, however high localized concentrations of these pollutants do not typically result from vehicular emission sources. CO emissions from vehicular traffic would add to existing background CO concentrations, and would be of concern at heavily congested intersections and in areas where the Proposed Project would add substantial vehicle volumes to the network.

As shown in Table AQ-4, worst case cumulative plus project traffic with associated congestion at build out of the proposed planning area will cause the eight hour State and Federal carbon monoxide standard to be exceeded at four of the eight intersections analyzed. Because the levels exceed the standard, the impact is considered ***significantly adverse.*** The one hour standard, however, would not be exceeded.

Noise

The noise analysis for the Preferred Specific Plan Area was prepared by Brown-Buntin and Associates (BBA) and incorporated into the discussion that follows.

Residential uses within the Plan Area could be adversely affected by noise generated by

traffic, railroad operations and new commercial, business/professional, and school uses. The extent to which existing or future residential developments would be affected by these noise sources would depend on the proximity of the developments to the various noise sources. Residential developments close to major roadways are expected to be significantly impacted by traffic noise. Some residential uses located near the railroad track could also be adversely impacted by train operation noise. Future siting of commercial, business/professional, and school uses in proximity to residential uses may also cause noise-related land use compatibility impacts.

Traffic Noise: BBA used the FHWA noise barrier performance analysis methodology to determine the insertion loss and resulting noise level provided by different barrier heights at the first row of lots which face Florin Road, Gerber Road, Bradshaw Road, Vineyard Road and Waterman Road. Table NO-12 shows the effectiveness of various barrier heights in mitigating traffic noise levels at residential outdoor activity areas to a range up to 65 dB L_{dn} which is the maximum noise level considered acceptable for residential use. This assumes a distance of 75 feet from the roadway centerline to the outdoor activity area.

The approximate barrier heights shown in Table NO-12 are assumed to be relative to building pad elevations. A detailed analysis of barrier heights should be conducted when grading plans and building pad elevations and locations have been provided.

Railroad Noise: BBA used a barrier profile analysis to determine appropriate barrier heights to reduce railroad noise levels to less than 60 dB L_{dn}. This analysis assumes a distance of 50 feet from the railroad track centerline to the outdoor activity area. This analysis assumes that the building pads are at the same grade as the railroad bed. Based upon the analysis, a barrier 8.5 feet in height would be required to reduce railroad noise levels to 60 dB Ldn, while a barrier of 8 feet and 6 feet would result in 60.2 dB L_{dn} and 61.9 dB L_{dn} , respectively.

Stationary Noise Source: Where commercial, business/professional, and school uses are located within proximity to residential uses, there exists a potential for noise-related land use conflicts. It is not possible to determine the noise impacts at the Specific Plan stage. Potential noise sources and impacts will need to be identified and determined when specific uses are proposed within areas designated for commercial and business/professional use.

Impacts to existing sensitive noise receptors along those roadway segments experiencing significant noise increases are ***considered potentially significant and unavoidable.*** Although future roadway projects would be subject to CEQA review and mitigation at the time construction is proposed, impacts to existing residents may not be fully mitigable. Noise barriers and other noise attenuating measures may not be feasible in situations such as front-on lots or where proposed roadway modifications result in minimal setbacks.

Noise impacts to future development along all Plan area roadways are potentially significant under all project scenarios but may be mitigated through implementation of noise attenuation measures at the time of development. Future projects will be subject to CEQA review and compliance with noise standards. Therefore, traffic related ***noise impacts to future development could be mitigated to less than significant levels.***

Mitigation Measures:

The following mitigation measures shall be added as a development guideline in the Specific Plan ensure that noise impacts for the Plan Area are minimized and addressed at the earliest stages of proposed development:

NS-1 Future noise sensitive residential land uses proposed for development within the future 60 dB L_{dn} traffic or railroad operation noise contours shall be required to prepare an acoustical analysis and to implement identified noise attenuation measures necessary to ensure compliance with the noise standards of the County General Plan Noise Element.

Hydrology and Flooding

Drainage.

Although the County has not yet adopted a Drainage Master Plan (DMP) for the overall Elder/Gerber Creek watershed, the Water Resources Division (WRD) has identified a preferred alternative for such a DMP. This preferred alternative includes construction of an interdependent system of channel improvements and detention facilities throughout the Elder/Gerber Creek watershed which would provide developing lands with adequate urban flood protection, while avoiding adverse flooding and water quality impacts on downstream areas. Because the County has not yet formally adopted a DMP for the overall Elder/Gerber Creek watershed, the project proponents have developed a DMP for the North Vineyard Station Specific Plan (NVSSP) area, which specifically addresses the flood control and stormwater quality management facilities (both on- and off-site) which will be necessary to enable development of the Specific Plan area to proceed. The proposed DMP for the NVSSP area (shown on Plate HY-E) is consistent with the WRD's preferred alternative for a DMP for the overall Elder/Gerber Creek watershed. The DMP for the NVSSP area proposes modifications to the Elder and Gerber Creek channels, and the construction of flood control and stormwater quality detention basins, within and downstream of the Specific Plan area. As a result of the proposed NVSSP DMP, Elder

and Gerber Creeks would be deepened to approximately 8 feet, widened to approximately 12-50 feet, and constructed with a meandering naturalized appearance. The modified creek channels within the Specific Plan area would be located within an open space corridor with an average width of 200 feet which will also include a recreational trail system. As a result of the proposed NVSSP DMP, the extent of the 100-year floodplain over the project site would be substantially reduced, reclaiming lands planned for urbanization from the 100-year floodplain, and the 10-year water surface elevation in the creek channels would be low enough to provide gravity drainage service to the proposed project development.

The Specific Plan land use plan identifies the proposed creek channels and associated open space areas as "drainage parkways". It should be noted that there are minor discrepancies between the drainage parkway and detention basin locations shown on the Specific Plan land use plan (Plate PD-B) and those shown on the NVSSP DMP (Plate HY-E). Evolution of the drainage planning process has resulted in the recommended facility locations identified in the NVSSP DMP, which are intended to provide necessary drainage improvements while minimizing impacts upon existing land uses. Therefore, the drainage parkway and detention basin locations shown on the Specific Plan land use plan should be revised to be consistent with those shown on the NVSSP DMP.

The proposed NVSSP DMP improvements, when considered in conjunction with other upstream drainage improvements anticipated under ultimate development conditions, would provide adequate capacity to attenuate and convey drainage from the entire drainage shed without adversely affecting downstream areas. This ultimate condition scenario depends upon a complete system of facilities, including detention throughout the watershed, elimination of the existing Laguna Creek interbasin transfer, and channel and road crossing improvements.

Any urban development within the NVSSP area will necessitate the construction of channel improvements from the development area downstream to the existing improved channel near Millbrook Circle (approximately ½ mile west of Elk Grove-Florin Road) in order to provide adequate drainage service to the development area. However, it is possible that certain upstream ultimate drainage improvements may not be implemented for many years. Therefore, hydrologic and hydraulic analyses were conducted to determine whether implementation of the proposed NVSSP DMP improvements under interim conditions, absent implementation of ultimate upstream flood control improvements, would provide adequate urban flood protection to the proposed Specific Plan development without adversely impacting downstream areas. These interim analyses determined that there would be increased 100-year water surface elevations and increased out-of-bank flooding in downstream areas along Elder Creek, resulting in potentially significant flooding impacts, unless off-site Detention Basin E20 (downstream of Elk

Grove-Florin Road) is constructed. These impacts would occur under either full (stand alone) or phased development of the proposed NVSSP land uses. The County WRD indicates that construction of Basin E20 should occur with the initial phases of the NVSSP construction.

An existing overflow condition along Gerber Creek east of the NVSSP area causes flood flows to spill overland into the NVSSP area, placing a broad swath of the southeast portion of the Specific Plan area within the 100-year floodplain. Development of the proposed NVSSP urban land uses cannot occur in this area until this floodplain area is reclaimed. Such reclamation could be provided by constructing certain ultimate off-site, upstream Gerber Creek channel improvements. Alternatively, a new channel (either interim or permanent) could be constructed across the southeast portion of the Specific Plan to confine the overflow from Gerber Creek in a manner which reduces the extent of the 100-year floodplain over this portion of the site, allowing development of a portion of the proposed NVSSP land uses in this area to proceed.

Development of the proposed NVSSP land uses could result in ***potentially significant on-site and downstream flooding impacts.*** These ***impacts can be reduced to a less than significant level*** by the timely implementation of the proposed NVSSP DMP improvements, including the construction of Detention Basin E20, and flood control improvements which eliminate or reduce the existing overflow condition from Gerber Creek into the NVSSP area. Individual developments within the NVSSP area should be required to demonstrate that they will be adequately protected from flooding, and that they will not increase flood risks to downstream areas.

Funding for construction of the NVSSP DMP drainage facilities (i.e., land acquisition, channel improvements, detention basins, culverts, bridges and maintenance roads), and for the construction of the drainage parkway trail improvements, has been identified in the Capital Improvement Program (CIP) for the Specific Plan. The Specific Plan indicates that ultimately the detention basins and drainage parkways (channel sections and open space/buffer areas) will be owned by the Sacramento County Water Agency. The detention basins and channel sections will be maintained by the Water Agency, while the buffer areas will be maintained by the Southgate Recreation and Park District. However, the Specific Plan does not identify the funding source or mechanism for land acquisition and landscaping improvements within the open space/buffer area portions of the drainage parkways (outside the channel sections). In order to ensure that the intended plans for the buffer area portion of the drainage parkways are implemented, the Specific Plan should be revised to clearly specify the funding source or mechanism for acquisition of the buffer area lands and for construction of the buffer area landscaping improvements.

Surface Water Quality.

Development of the Specific Plan project could have ***potentially significant impacts on Elder and Gerber Creek water quality*** if not carefully managed. Grading and earthmoving activities associated with development will expose soil to increased rates of erosion, which could increase the amount of sediment in stormwater runoff discharged downstream. Stormwater runoff from developed areas will also contain oil, grease and heavy metals from roadways and parking lots, and fertilizers and pesticides from parks and landscaped areas, which could degrade the creek's water quality.

In conformance with the terms of it's NPDES permit to reduce stormwater pollution, Sacramento County requires new development to implement Best Management Practices (BMPs) for stormwater quality control. These BMPs, which include both source control and treatment control methods, are described in Volume 5 of the City/County Drainage Manual. Sacramento County has also adopted a Land Grading and Erosion Control Ordinance which establishes administrative procedures, minimum standards of review, and implementation and enforcement procedures for controlling erosion, sedimentation, disruption of existing drainage and related environmental damage caused by activities of clearing and grubbing, grading, filling and excavating of land. Any grading, filling, excavation, storing or disposal of 350 cubic yards or more of soil, or clearing or grubbing of 1 acre or greater of land requires compliance with the standards and requirements of the Ordinance.

The proposed NVSSP DMP detention facilities will be designed to provide water quality treatment of urban runoff. The provision of these facilities and any additional stormwater quality source and treatment control measures consistent with the Draft City/County Drainage Manual required by the County Water Resources Division, and compliance with the County's Land Grading and Erosion Control Ordinance, ***will reduce the project's impacts upon surface water quality to a less than significant level.***

Wetlands Habitat:

Construction of the proposed NVSSP DMP improvements includes excavation of channels and detention basins and construction of a trail system which will ***significantly impact wetlands and special status species habitat.*** The Biotic Resources Report prepared for the NVSSP project by Sugnet & Associates estimates that 7.4 acres of on-site and 5.6 acres of off-site wetlands (including perennial creek, vernal pool, drainage swale and seasonal wetland types) will be impacted by the NVSSP DMP improvements. Subsequent refinements have been made to the DMP through the drainage planning process

(culminating in the proposed DMP configuration shown on Plate HY-E), which will likely result in minor modifications to these reported impact acreages. The Biotic Resources Report also indicates that the NVSSP area, including the Elder and Gerber Creek corridors, provides suitable habitat for numerous special status plant and animal species which could be impacted by DMP improvements. Due to access limitations, determinate surveys for special status species have been conducted on only portions of the NVSSP project site to date. In addition, although well developed riparian zones are not present on the project site, there are short reaches of riparian scrub species along the creek corridors which would be affected by construction of the NVSSP DMP improvements.

The proposed NVSSP DMP improvements' ***impacts upon biological resources can be reduced to a less than significant level*** by: (a) implementing a wetland mitigation plan which acieves no net loss of wetland habitat acreage and values; (b) implementing a special status species mitigation plan developed in cooperation with regulatory resource agencies designed to reduce impacts on any special status species identified through determinate surveys to a less than significant level; and (c) providing in-kind replacement plantings on an inch-for-inch basis for any native trees six-inches dbh (diameter at breast height) or larger which must be removed.

Mitigation Measures:

Implementation of the following mitigation measures will reduce the project's impacts related to hydrology and flooding to a less than significant level.

HY-1. The NVSSP land use plan shall be revised to reflect the drainage parkway corridor and detention basin locations shown on the NVSSP Drainage Master Plan (DMP) contained in the Drainage Study for the North Vineyard Station Specific Plan (MacKay and Somps Engineers, February 1997) (see Plate HY-E of this EIR).

HY-2. In order to ensure that the intended plans for the buffer area portion of the drainage parkway (outside of the drainage channels) are implemented, the NVSSP text shall be revised to clearly specify the funding source or mechanism for acquisition of the buffer area lands (i.e., through CIP financing, land dedication by individual abutting property owners, or some other measure), and to clearly specify the funding source or mechanism for construction of the buffer area landscaping improvements (i.e., through CIP financing, by individual abutting property owners, by the Park District, or some other measure). Future development within the NVSSP area shall ensure

that plans for the buffer area portions of the drainage parkways are implemented, consistent with the methods prescribed in the finally adopted NVSSP.

HY-3. Future development within the NVSSP area shall implement the proposed NVSSP Drainage Master Plan (DMP) improvements, including construction of Detention Basin E20 downstream of the Specific Plan area, and construction of a mitigating solution for the existing Gerber Creek overflow condition upstream of the Specific Plan area, as described in the Drainage Study for the North Vineyard Station Specific Plan (MacKay and Somps Engineers, February 1997) (see Figure 10 of this EIR). Detailed plans for the design and construction of all proposed drainage and water quality facilities, consistent with the NVSSP DMP, shall be submitted to the County Water Resources Division (WRD) for review and approval.

Construction of the NVSSP DMP improvements may be phased, subject to the approval of the County WRD, so long as the project proponent(s) provide hydrologic/hydraulic analyses which demonstrate that the phased improvements will provide adequate urban flood protection to the proposed on-site development, and will not increase flood risks in downstream areas. Such analyses shall verify that the phased improvements will result in no increase in peak 100-year flows on Elder Creek at the City/County boundary, and no significant increased 100-year out-of-bank flows in the existing improved channel downstream of the Specific Plan area.

HY-4. Future development shall comply with the County Land Grading and Erosion Control Ordinance.

HY-5. Future development shall provide stormwater quality source and treatment control measures consistent with Volume 5 of the Draft City/County Drainage Manual. The final design of such source and treatment control measures shall be subject to the approval of the County WRD.

HY-6. Implementation of the proposed NVSSP Drainage Master Plan (DMP) improvements, including construction of Detention Basin E20 and construction of a mitigating solution for the existing Gerber Creek overflow condition upstream of the Specific Plan area, shall not occur until the following items have been submitted to the Sacramento

County Board of Supervisors for review and approval.

(a) A wetland delineation for the improvement area verified by the U.S. Army Corps of Engineers.

(b) A detailed mitigation plan for wetlands to be impacted by the proposed improvements which specifically describes the measures which will be implemented to achieve no net loss in wetland habitat acreage and values.

(c) Determinate surveys for the improvement area for potentially occurring special status species.

(d) A detailed mitigation plan developed in cooperation with the regulatory resource agencies (U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service and California Department of Fish and Game) which is designed to reduce impacts of the proposed improvements on any special status species identified in the determinate surveys to a less than significant level.

(e) A tree survey for the improvement area which identifies all native trees six-inches dbh (diameter at breast height) or larger.

(f) A detailed tree replacement planting plan which describes the tree plantings/relocation measures to be implemented to provide in-kind replacement plantings on an inch-for-inch basis for any native trees six-inches dbh or larger which will be impacted by the proposed improvements.

HY-7. Implementation of the proposed NVSSP DMP improvements, including construction of Detention Basin E20 and construction of a mitigating solution for the existing Gerber Creek overflow condition upstream of the Specific Plan area, shall not occur until all necessary permits and/or agreements for the proposed improvements have been obtained from the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service and California Department of Fish and Game.

Water Supply

MacKay and Somps Civil Engineers, Inc. have prepared a *Preliminary Master Water Supply and Water Distribution System Report* (May 1997) for the North Vineyard Station Specific Plan. The purpose of this report was to develop long-term, permanent water supply alternatives and to identify water facilities needed to serve the North Vineyard Station Specific Plan Area (NVSSP Area). Their report is based on several other studies. The Sacramento County Public Works Agency, Water Resources Division (WRD) has conducted an evaluation of groundwater impacts of the Specific Plan area. Their report, entitled *North Vineyard Station Specific Plan, Evaluation of Groundwater Impacts* (January 31, 1997), has been included as Appendix A of the MacKay and Somps report. Other sources include the Zone 40 Master Water Supply Plan Report (1987), the Vineyard Water Distribution Study (1993), the Zone 40 Expansion Study (1995) and the outcome, to date, of the Sacramento Area Water Forum process.

The Conservation Element of the Sacramento County General Plan contains a Water Resources section which includes two policies relative to water supply for areas of new urban growth, CO-20 and CO-21. These policies require that a Water Supply Master Plan be prepared for areas of new urban growth and that such a plan consider alternate conservation measures, achieve safe yields of ground water supply and formulate monitoring programs to review water supply progress. MacKay and Somps have provided an analysis of water supply needs, facilities, financing and phasing to achieve sufficient water supply to serve the needs of the NVSSP Area, consistent with the above noted policies.

As noted by MacKay and Somps, the existing land uses within the Plan area are relatively dispersed and independent. They are served by privately owned and operated wells. On the basis of the WRD's evaluation, MacKay and Somps have indicated that existing water demands in the Plan Area cannot be precisely estimated. However, analysis shows that current water use within the Specific Plan Area is approximately 580 acre-feet of water annually.

According to MacKay and Somps, there are no existing public water distribution facilities within the Plan Area. However, Sacramento County Water Agency Zone 40 facilities exist to the south of the project. Currently, there are two separate systems: one east of Bradshaw Road and one west of Bradshaw Road. In addition, City of Sacramento facilities exist to the west and northwest of the project site.

The City of Sacramento currently holds surface water rights from the American River. A geographical service area has been assigned for use of this water which extends beyond the current City limits into areas of the unincorporated County of Sacramento. Known as the

City of Sacramento American River Place of Use (POU), this geographical area's easterly boundary runs along Bradshaw Road which bisects the Plan Area. The POU extends north of Florin Road and south of Gerber Road, and includes the portion of the plan westerly of Bradshaw Road. Surface water from the City's contractual source could therefore be utilized within the westerly portions of the Plan Area, approximately 945± acres.

In 1987, the Sacramento County Water Agency developed a Zone 40 Master Water Supply Plan Report. The boundaries of that study extended to the southerly boundary of the Specific Plan Area, but did not include it. In late 1995, the Sacramento County Water Agency began a further study, this time to expand the Study Areas associated with the Zone 40 Master Plan Update in response to proposed land planning in areas immediately adjacent to the study area of the Zone 40 Water Master Plan Update. The expanded area involves two individual areas, a northern and southern study area. The Northern Study Area encompasses the North Vineyard Station Specific Plan, as well as areas to the west, north, and east of the Specific Plan Area.

The determination of water demands for the Specific Plan Area provides the basis for water supply and distribution capacity requirements to serve the Specific Plan Area. Annual domestic water demands for the Specific Plan Area have been calculated by MacKay and Somps based upon the water demand factors listed in the Zone 40 Master Plan Update and the Zone 40 Adjacent Areas Master Plan. In addition to determining Average Annual Demands at buildout, Maximum Day Demands and an analysis of Fire Flows have also been provided.

According to MacKay and Somps, the Water Master Plan for Areas Adjacent to the Zone 40 Master Plan Update's Study Area develops and evaluates water supply facilities to serve the demands in the Northern Study Area. Delivery, storage and treatment systems for the area were planned and tentatively sized. Projected water demands within the Northern Study Area, which includes the North Vineyard Station Specific Plan Area, can be supplied with one of the following two alternatives: 1) all surface water; or 2) a combination of ground water and surface water.

MacKay and Somps state that the portion of the Study Area lying entirely within the City's American River POU can be supplied with a firm source of American River surface water. Therefore, they assume that development within the City's American River POU will be supplied with only surface water in both of these alternatives.

In Alternative 1, surface water would supply the Maximum Day Demand of the entire Study Area, including the North Vineyard Station Specific Plan Area. In Alternative 2, surface water would supply the Maximum Day Demand of the area within the City's POU, and ground water would supply the Maximum Day Demand of the area outside the POU.

Demands in excess of the Maximum Day Demand would be met from storage reservoirs in both alternatives.

According to MacKay and Somps, the preferred water supply alternative is Alternative 2, the combination of surface water and ground water. They further state that:

> This alternative will meet water demands of initial phases of development and buildout of the Specific Plan Area while lowering ground water levels only an approximate 1.8 feet in the Specific Plan Area. There may be a slight rise in the ground water level in the area of the Elk Grove cone-of-depression as a result of this water supply alternative. Also, the feasibility of Alternative 1, surface water only, is speculative at this time because there is no current firm source of surface water for areas of the portion of the Specific Plan that are east of Bradshaw Road.

Six potential surface water supply options could be considered to meet demands in the Zone 40 Master Plan Update Northern Study Area, including the Specific Plan Area. According to MacKay and Somps, of these six supply elements, two were identified for full allocation in the study of the Zone 40 Master Plan Update at buildout, and one is too speculative to plan for at this time. The three remaining surface water supply elements which could be used to meet demands in the Northern Study Area, including the Specific Plan Area, are S1-Intermittent "Winter Water", S5- "Firm" Surface Water Transfers from North Sacramento River Basin, and S7-Agency Purchase of Sacramento Water.

According to MacKay and Somps, the ground water supply elements identified in the Zone 40 Master Plan Update which could be used to meet demands for the Northern Study Area, including the Specific Plan Area, include element G1-Additional Ground Water, and elements G6/G7-Injection.

The phasing of proposed development within the Specific Plan Area will dictate the feasibility of implementing the Water Supply Master Plan. According to MacKay and Somps:

> Development within the Plan Area may begin in the construction year immediately following adoption of the Specific Plan document. Because of the physical layout of many of the other infrastructure services, such as sewer and drainage, it is anticipated that development may commence in the westerly portions of the Plan Area. This Area is within the City American River POU which is ultimately planned to be supplied with 100% surface water. Because of the estimated costs of providing surface

water to the Northern Study Area, an initial, possibly interim, alternative is necessary to allow any approved development to proceed.

To implement the Water Master Plan, the Plan Area will need to be annexed into the existing Zone 40 of the SCWA in order for Zone 40 to provide major water facilities described in their report. MacKay and Somps further indicate that the Specific Plan Area should also be annexed to the Sacramento County Water Maintenance District which will allow the District to purvey water to developments within the Specific Plan Area.

The following summary has been provided by MacKay and Somps:

> Conjunctive use water supply for the County of Sacramento and surrounding regions is a very complex and multi-faceted matter that has received intense attention in the last few years from all of the areas water purveyors, environmental interests and governments. Solutions should not be pursued on a project-by-project level. They should be achieved on a regional scale. This effort takes time, and is now demonstrating a high probability of success in the foreseeable future.
>
> Many interim solutions enhancing water supply have been implemented. Temporary surface water supplies are now being provided to areas which were entirely dependent upon ground water. Agreements are being completed which will provide significant long-term surface water supplies. This PL 101-514 water supply of 15,000 acre-feet of surface water is approaching reality with a DEIR due out prior to the approval of the North Vineyard Specific Plan, and scheduled final EIS/EIR for fall of 1997, prior to expected implementation of the Public Facilities Financing Plan for this project. It is therefore probable that long-term surface water contracts providing a more than adequate surface water supply will be in place prior to any possible start of development within the Specific Plan Area.
>
> Initial water supply may be dependent upon ground water for the first few developments. This initial supply will likely come from ground water facilities which are constructed to become an integral part of the ultimate system, enhancing and supplementing the assurance of long-term reliable water supply for this comprehensively planned community.

Implementation of the North Vineyard Station Specific Plan Water Master Plan, as outlined by MacKay and Somps, would result in less than significant water supply impacts. However,

the implementation of the NVSSP Water Master Plan is contingent on the implementation of the Water Master Plan for Areas Adjacent to the Zone 40 Water Supply Master Plan Update's Study Area, as well as fulfillment of the City of Sacramento American River Place of Use (POU). Until all agreements are in place to wheel "firm" surface water supplies to the Specific Plan area, the project will contribute to the incremental decline in ground water levels. This incremental decline and the dewatering of private wells is a regional issue, beyond the scope of this current project. However, the project will add to the ***significant adverse cumulative impacts*** that regional development has on ground water supplies.

Mitigation:

None required.

Sewer Service

Currently, there are no public sewer facilities within the North Vineyard Station Specific Plan (NVSSP) area. Existing development within the project site is served by private septic systems. Public sewer service will be required to serve the proposed urban land uses. The NVSSP area lies within the Spheres of Influence of the Sacramento Regional County Sanitation District (SRCSD) and County Sanitation District No. 1 (CSD-1), which provide public sewer service within Sacramento County. CSD-1 provides local sewage collection and transport from its facilities to the regional sewage transmission, treatment and disposal facilities operated by SRCSD. SRCSD and CSD-1 are administered by the Water Quality Division of the Sacramento County Public Works Agency, which provides engineering and planning services to these sewer districts and operates and maintains district facilities. In order to receive public sewer service, the NVSSP area must be annexed to SRCSD and CSD-1.

Development of the proposed NVSSP project and upstream areas will contribute an estimated 16.92 million gallons per day of peak wet weather sewage flows to the regional sewer system. There is an existing 108-inch sewer interceptor located in Elk Grove-Florin Road, approximately ½ mile west of the Specific Plan area, but this facility is nearing capacity. However, the Bradshaw Interceptor is planned for construction in 1997-1998 through the western portion of the Specific Plan area which will provide sufficient capacity to accomodate the proposed project's sewage flows. Specific Plan development will be required to construct the trunk and lateral facilities needed to convey project sewage flows to the Bradshaw Interceptor. Because planned facilities will be sufficient to accomodate sewage flows from the proposed land uses, the project's impacts upon

sewer service are considered to be ***less than significant and no mitigation measures are required.*** However, the Water Quality Division indicates that annexation to SRCSD and CSD-1 will be required prior to the approval of improvement plans or recordation of final maps, whichever occurs first, and that the applicant is responsible for submitting the annexation request to the Local Agency Formation Commission (LAFCo).

Mitigation Measures:

None required.

Biological Resources

The project area is located on the flat bottom of the Sacramento Valley. Dominated by grasslands, the Plan Area supports few woody species and very little overall woody biomass. The exception is riparian zones, which have deeper soils and more available water. However, well developed riparian zones are not present in the plan area.

Biotic inventories were conducted by Sugnet and Associates in accordance with County General Plan Policies and the methods outlined in the County "Specific Plan Wetland Mitigation Plan Process Guidelines" (March 1994). Per these policies and guidelines wetland delineations are required to include a description of habitat types and associated plant and animal species, special-status species determination, and habitat quality evaluation. The County recommends gathering information on wetland resources through the combined use of aerial or satellite imagery, historical data, and field verification.

Wetland Impacts and Mitigation Options.

Two components of the project will impact wetlands: the development of the proposed land uses and the channel modifications to Elder and Gerber creeks. The Specific Plan development would impact 51.0 acres of wetlands on-site and 7.53 off-site acres (58.53 total acres).

The project proposes to compensate for wetland impacts rather than avoid, minimize, rectify or reduce/eliminate impacts as required by CEQA and U.S. Fish and Wildlife Service policy. All wetlands are proposed to be mitigated (compensated for) off site. Off site mitigation usually occurs under two scenarios participation in an agency approved mitigation bank or construction of wetlands on purchased land. Although off-site mitigation of the project

site's vernal pools and seasonal wetlands is not a preferred mitigation strategy under CEQA or Service Guidelines, fully mitigating wetlands off site may be acceptable to the decision makers and the permitting agencies. Further, this approach could satisfy "no net loss of wetlands" policy required by Sacramento County.

Consistent with U.S. Fish and Wildlife Service Guidelines, these wetlands are required to be mitigated by creating fairy shrimp habitat BR-9 at a 1:1 ratio, acquiring fairy shrimp habitat at a USFWS approved habitat mitigation bank at a ratio of 2:1. As shown on Tables BR-8 and BR-9 acres of in-kind wetlands creation and acquisition of an additional 79.7 acres would be required to mitigate the loss of wetlands from the site.

Impacts to vernal pools and seasonal wetlands will occur as individual projects are developed. If off-site mitigation is adopted by the Board of Supervisors, an Off-site Mitigation Plan for each development will be required.

The Specific Plan's proposal to compensate for all vernal pools and seasonal wetlands off-site deviates from the mitigation sequence (avoid, minimize, rectify, or reduce/eliminate impacts before compensating) and conflicts Specific Plan's policy to plan and carry out development in a manner that, to the extent possible, preserves wetlands and their functional values.

While preservation of all vernal pools and seasonal wetlands within the Specific Plan area would not be compatible with its urban designation, opportunities for preservation do exist. The most logical areas for preservation are the lands east of Bradshaw Road. Encompassing approximately one square mile (640 acres), this area supports the highest concentration of wetlands and is contiguous with other vernal pool complexes to the east. The wetlands of this area are dispersed across the central and eastern portions of the sector. Only the northwestern and southwestern portions are devoid of significant wetlands. It is noted that drainage swales and an area of freshwater marsh exist in this area. Depending on the ultimate configuration of the wetland preserve, these communities may be preserved as well.

The report *Sacramento County Vernal Pools* states that vernal pool preserves should be 200-acres minimum in size, although smaller preserves may be viable, depending on the species targeted. Based on the wetland configuration of the site, 200 acres would be the minimum acceptable preserve size. The On-site Wetland Preservation Plan will be subject to the approval of the Sacramento County Board of Supervisors, the California Department of Fish and Game, the U.S. Army Corps of Engineers, and the U.S. Fish and Wildlife Service.

Freshwater marsh, drainage swales and perennial creeks would be impacted by development of the proposed land uses and the modifications to Elder and Gerber Creeks.

The Specific Plan's preferred channel alternative is an improved naturalized channel with detention basins. The naturalized channel would have an average depth of eight feet below the existing channel elevation and bottom widths ranging from 12 to 50 feet. The channel would meander through the creek corridor, which would be 150 to 240 feet wide through most of the Specific Plan area. All low water and storm flows would be conveyed in the proposed channel.

According to Sugnet and Associates, the proposed channel bottoms, at completion of all work within the creeks, would ultimately provide approximately 23 acres of emergent marsh (seasonal and perennial) wetlands. The on-site (15-acres) and off-site (3.68 acres) components of the project would cumulatively impact 18.68 acres of wetlands. Using the 1.3:1 mitigation ratio, 24.3 acres of emergent marsh would be required to mitigate the total wetland impacts of the Specific Plan development. The required mitigation acreage exceeds that proposed by 1.3 acres. Given the scale of the channel improvements within the channels, creating this additional acreage is considered feasible.

Channel modifications are expected to occur over a relatively short time (less than one construction season) and are not anticipated to impact any listed species. Implementation of the channel modifications, with the required additional wetland acreage, would adequately mitigate the loss of all wetlands (18.68 acres) that do not support, or potentially support, fairy shrimp.

Impacts to Special Status Species.

Each property shall satisfy the requirements of the federal Endangered Species Act either through the consultation process under Section 7 of the ESA for activities which require a federal permit, or through the development of a Habitat Conservation Plan ("HCP") for potential impacts to endangered species caused by activities not requiring a federal permit.

Vernal Pool Invertebrates

The vernal pool fairy shrimp (*Branchinecta lynchi*) and vernal pool tadpole shrimp (*Lepidurus packardi*) listed under the federal Endangered Species Act as threatened and endangered, respectively, have been identified in several isolated wetlands within the plan area. A project applicant may perform determinate level surveys (based on Service requirements) to identify if any vernal pool fairy shrimp or vernal pool tadpole shrimp occur on the property. Alternatively, a project applicant may assume all vernal pools and seasonal wetlands are habitat for the vernal pool fairy shrimp and vernal pool tadpole shrimp and proceed with Section 7 consultation. For planning purposes it is assumed that all vernal pools and seasonal wetlands are habitat for the vernal pool fairy shrimp and vernal pool

tadpole shrimp.

The Service has a programmatic Biological Opinion which it uses to permit projects with relatively small effects on fairy shrimp habitat. Projects that are appended to the Biological Opinion would be mitigated using a combination of habitat preservation and creation as follows:

> Preservation component. For every acre of habitat directly or indirectly impacted, at least two vernal pool credits will be dedicated within a Service-approved ecosystem preservation bank, or, based on Service evaluation of site-specific conservation values, three acres of vernal pool habitat may be preserved on the project site. Indirect impacts may include hydrology changes or inadequate buffering of adjacent development.
>
> Creation component. For every acre of habitat directly impacted, at least one vernal pool creation credit will be dedicated within a Service-approved habitat mitigation bank, or, based on Service evaluation of site-specific conservation values, two acres of vernal pool habitat will be created and monitored on the project site as approved by the Service.
>
> Vernal pool habitat and associated upland habitat utilized as on-site mitigation will be protected from adverse impacts and managed in perpetuity or until the Corps, the applicant, and the Service agree on a process to exchange such areas for credits within a Service-approved mitigation banking system.

The Wetland Impacts analysis reflects the above mitigation ratios and, for planning purposes, assumes that all 39.85 acres of vernal pools and seasonal wetlands support vernal pool fairy shrimp and vernal pool tadpole shrimp.

Preservation of a minimum 200-acre on-site wetland preserve, which is an element of the Environmentally Superior Alternative, would not entirely avoid impacts to shrimp, however, the magnitude of impacts would be substantially reduced. Any remaining mitigation would occur at an agency approved mitigation bank or on land purchased by the applicant. The combined mitigation measures ***will reduce the impacts*** to fairy shrimp ***to a less than significant level.***

Swainson's hawk

The majority of the 1,608 acre Plan Area provides potential foraging habitat for the Swainson's hawk (*Buteo swainsoni*). Only the developed areas and the creek corridors

do not are not considered potential foraging habitat. The nearest active Swainson's hawk nest is approximately 6 miles away along Cosumnes River/Deer Creek corridor.

Development of the proposed land uses under all proposed alternatives would eliminate foraging habitat. Habitat losses would be incremental as individual projects were constructed. Each of these developments would eliminate the foraging habitat within its boundaries. Habitat fragmentation due to individual projects may render adjoining areas unsuitable for foraging, depending on the configuration of the project.

Development of the site would be incremental, possibly over a long period of time. Despite this logistical factor, mitigation for Swainson's hawk foraging habitat losses would be best accomplished through establishment or participation in a mitigation bank. Absent this comprehensive approach, individual projects will be required to mitigate for the specific acreage of foraging habitat removed. All mitigation for impacts to Swainson's hawk must be approved by the California Department of Fish and Game (CDFG). CDFG requirements will ***reduce this impact to a less than significant level.***

Other Special-Status Species

As shown on Table BR-4 , numerous special status species potentially occur within the Specific Plan area. The land use plan does not incorporate habitat for any of the special status species identified. If surveys reveal the presence of these species, mitigation could not occur on site without major modifications to the Plan. Off site mitigation, if feasible, would be the only alternative capable of reducing impacts to less than significant levels. In the absence of determinate surveys for special status species and the Plan's lack of habitat, developing the Specific Plan would result in potentially significant and unavoidable impacts on special status species. Adoption of the On-site Wetland Preservation Plan (Environmentally Superior Alternative) could ***reduce impacts*** on certain species (e.g., western burrowing owls, wetland dependent species) ***to less than significant levels***. This cannot be known with certainty until individual projects are surveyed.

Impacts to Non-listed Species and Habitats.

Development of the proposed Specific Plan would result in the loss of nearly 1,600 acres of habitats used by a variety of more common (non-listed) wildlife species. Given the magnitude of this change, the loss is considered a ***cumulatively significant and unavoidable*** impact of the project. Preservation of wetland/wildlife habitat on site as required by the Wetland Preservation Plan (Environmentally Superior Alternative) would reduce this impact

by at least 200 acres, however, the impact ***would remain cumulatively significant and unavoidable.***

Trees.

As described above in the "Setting" subsection, 48 trees exist within the participating properties. Except for the black walnut trees on the Saca properties and a few large black willows along creek banks all the trees are non-native. The remainder of the Specific Plan area has not been surveyed. Native oaks and other significant trees may occur in these areas and could be potentially impacted by future development. The Specific Plan text (Open Space section) requires numerous measures to protect and preserve native oaks during individual development projects.

Implementation of mitigation measures would reduce potential impacts to native oak and non-oak native trees to ***less than significant*** levels.

Mitigation Measures:

BR-1. If off-site mitigation is adopted by the Board of Supervisors, an Off-site Mitigation Plan for each development will be required as described below.

Off-site Mitigation Plan. In consultation within the U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service, an Off-site Wetland Mitigation Plan shall be prepared for each development project within the Specific Plan area. All vernal pools and seasonal wetlands shall be mitigated off-site at an agency approved mitigation bank or other property approved by the regulatory agencies. The Plan shall incorporate the following components.

a. A detailed wetland delineation verified by the U.S. Army Corps of Engineers;

b. The location of the wetland creation site(s) and the acquisition site(s);

c. A detailed map of the wetland creation site(s) showing the acreage, distribution and type of wetlands to be created;

d. Vernal pool and seasonal wetlands compensation at ratios sufficient to ensure no net loss of vernal pool and seasonal wetlands acreage, values, and functions. The mitigation ratio for each wetland type shall be specified. Compensation vernal pools and seasonal wetlands shall:

- be supported primarily by direct rainfall, and shall be designed to

- meet or exceed the hydrophytic conditions and operating functions of the existing vernal pools and seasonal wetlands proposed for impact.

- mitigate the loss of special-status species 'habitat, including fairy shrimp, as required by the U.S. Fish and Wildlife Service. For every acre of fairy shrimp habitat impacted, the applicant shall construct one acre of new habitat and purchase two acres of fairy shrimp habitat preservation credits at an agency approved mitigation bank.

e. A wetland monitoring and maintenance program prepared according to the requirements of the U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service.

Monitoring: Monitoring shall be designed to determine that sufficient water is available to produce the required periods of inundation and subsequent soil saturation to support a desired biological community. In addition, the monitoring shall determine the need for remedial action in the form of pool modification, including excavation, fill, and/or modification of hydrologic connections, required to improve the pool water balance. Specific performance standards for determining success of the created wetlands shall be proposed. Monitoring shall occur for at least 5 years, or as required by the U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service.

Short-term monitoring requirements will be established by the Corps Section 404 permit authorization. If the Corps, in consultation with the USFWS, the U. S. Environmental Protection Agency, and the CDFG, determines that wetland development is successful at the end of the prescribed monitoring period (normally 5 years), no further monitoring will be required. Should short-term monitoring indicate that performance standards are not met, plan modifications will be submitted to the Corps for approval. Approved modifications shall be implemented and monitoring will continue until success criteria are met.

Maintenance: A mechanism satisfactory to the Corps shall be formed to fund long-term maintenance of compensation areas to assure that the wetlands are maintained in a natural state. Long-term maintenance shall include restricted recreational use, erosion control, and maintenance trails, or other similar structures.

At the time the applicant obtains a permit to impact wetlands, alternative strategies may have been adopted to mitigate for wetland impacts. The above measures do not preclude the implementation of these new alternatives. The final acreage of offsite mitigation will be determined by the U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service when specific development projects are permitted by those agencies.

BR-2. If the On-site Wetland Preserve is approved, an On-site Wetland Preservation Plan shall be prepared that preserves at least 200 contiguous acres as a wetland preserve east of Bradshaw Road. Preservation shall focus on those wetlands with the highest habitat values. A map showing the wetland preserve boundaries shall be prepared, including the rationale for the preserve boundaries. The plan shall address all aspects of wetland preservation including buffering of incompatible land uses, access, maintenance, monitoring, and mitigation banking. The required Plan shall be submitted to the Sacramento County Department of Environmental Review and Assessment, U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service and California Department of Fish and Game for approval prior to its implementation..

All vernal pools and seasonal wetlands outside the preserve area shall be mitigated offsite at an agency approved mitigation bank to the satisfaction of the U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service.

BR-3. A Wetland Mitigation Plan for Elder and Gerber Creeks shall be prepared and incorporated into the Specific Plan. This plan shall address phasing of channel modifications, establishment of wetlands (i.e., passive, active, combination), species composition, maintenance and monitoring. The plan shall require channel bottom and bank materials to be substantially the same as comparable natural streams. Natural arrays of riffles, runs and pools shall be incorporated into the design of the creek channels. The required Plan shall be submitted to the Sacramento County Department of Environmental Review and Assessment, U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service and California Department of Fish and Game for approval prior to its implementation.

BR-4. To mitigate for the potential loss of 1600± acres of Swainson's hawk foraging habitat, implement one of the following alternatives:

a. The project proponent shall preserve 0.50 acre of similar habitat for each acre lost within a 10-mile radius of the project site. This land shall be

protected through fee title or conservation easement (acceptable to the California Department of Fish and Game);

b. The project proponent shall enter in the formal consultation with the California Department of Fish and Game pursuant to the Fish and Game Code, Section 2081. A California Endangered Species Act (CESA) Memorandum of Understanding (MOU) and Management Agreement shall be completed prior to issuance of any building permits for the site.

c. Should the County Board of Supervisors adopt a Swainson's hawk mitigation policy/program (which may include a mitigation fee payable prior to issuance of building permits) prior to the implementation of one of the measures above, the project proponent may be subject to that program instead.

BR-5. Using protocol acceptable to the regulatory agencies with authority over these species, determinate surveys for potentially-occurring special-status species or their habitat shall be conducted prior to development and permitting within the Specific Plan area. If any of the species <u>or</u> their habitat are indicated, project/plan-specific mitigation measures shall be developed in consultation with Sacramento County, the California Department of Fish and Game, and/or the U.S. Fish and Wildlife Service to mitigate those impacts to less than significant levels, if possible. The mitigation plan(s) developed for species or habitat preservation shall emphasize a multi-species approach, to the maximum extent possible.

- Where impacts include taking of a federally-listed species, a Section 10, Incidental Take permit, or a Biological Opinion resulting from Section 7 Consultation with another federal agency shall be obtained, and permit conditions implemented.

- Where impacts include taking of a California-listed species, a Section 2081 Management Agreement shall be negotiated with the California Department of Fish and Game, and conditions of that management agreement implemented.

BR-6. In conjunction within the required Wetland Mitigation Plan for the creeks, a Drainage Parkway Plan for Elder and Gerber Creeks shall be prepared. This plan shall provide the following information:

a. A map that depicts the configuration of the creek corridors, including

overall width, low-flow channel width, bank slopes, and buffer widths;

b. The location of all trails, bikeways, maintenance roads and channel access points, street crossings, water quality basins and other structures within the corridors;

c. Designations of all lands uses, including recreation (passive or active), mitigation, natural area, water quality, storm water detention, etc.;

d. Policies addressing public access into the corridors, including limitations on use;

e. A policy statement requiring the use native plants within the corridor, including a planting palette of acceptable species;

f. Maintenance and monitoring requirements for the creek channels and mitigation areas;

g. An appropriate funding mechanism to establish, operate and maintain the creek corridors, and;

h. All requirements of State and Federal regulatory agencies pertaining to the preservation and management of special status species.

If the proposed project is approved, the corridor width shall be in substantial compliance with that proposed in the Specific Plan (150 to 240 feet). Adoption of the Alternative Drainage Corridor Policies would increase the corridor width to 600 feet. Widths of this alternative may be reduced based on unavoidable physical constraints, however, the minimum width shall be 150 feet on each side of the drainage channel bottom. These alternatives are not intended to preclude other alternatives for the drainage parkway corridors. Such changes may involve combinations of different channel widths, corridor configurations and policies. The Drainage Parkway Plan shall be submitted to the Sacramento County Board of Supervisors for approval, prior to approval of development of the Specific Plan area.

Cultural Resources

Technical studies and/or reports addressing the cultural resources of the Plan Area and offsite Drainage Master Plan impact areas have been prepared by archeological consultants Peak and Associates. The reports, entitled *Cultural Resources Assessment of the North Vineyard Station Specific Plan* (December 18, 1995); *Cultural Resources Assessment of the North Vineyard Station Off-Site Detention Basin* (January 14, 1997); and, *Basin 20 and Elder Creek Channel Survey* (letter report dated January 28, 1997), provide background on the cultural setting of the Plan Area, including a discussion of previous research conducted in the area.

Pre-Field Research:

Records of previous cultural resource surveys and maps of recorded sites within the project area were reviewed at the North Central Information Center of the California Archeological Inventory. The records search for the North Vineyard Specific Plan Area revealed that there are no archeological sites recorded in or near the study area. Very little of the project area has been systematically surveyed. In 1974, J. Johnson of CSU Sacramento completed a survey of both branches of Morrison Creek that transect the Plan Area. Peak & Associates, Inc. completed a survey of the corridor for one of the SMUD transmission lines that crosses the western portion of the Plan Area in 1979. All four of the bridges along Gerber (3) and Florin (1) roads have been reviewed and evaluated, and are not significant resources.

Field Assessment:

Specific Plan Area

A total of 556 acres of the Plan Area was given a complete pedestrian walk-over by a team of archeologists. This acreage, referred to as the "Survey Area", consisted of the proponents' parcels where access was available (see Plate CR-G).

The vehicular inspection of the remaining 1024 acres was accomplished by driving the public roadways, and when feasible, photographing those structures that research and/or empirical observation had indicated were over 45 years old. No surface inspection of the 1024 acres was completed due to lack of access.

Off Site Area:

Subsequent to completing the cultural resource investigation of the Specific Plan area, Peak and Associates conducted a field survey of two off-site areas subject to impact as a result of implementation of the Specific Plans Master Drainage Plan. These include the areas of the proposed detention facility and the Elder Creek channel (see Plate CR-H).

Survey Results:

Archaeological Resources

No prehistoric artifacts or evidence of prehistoric use of the Survey Area and/or the off-site impact areas was found. Several fields in the Survey Area had been recently plowed or mowed, providing excellent ground visibility. Some rock was observed in these areas, but none that had been modified by man.

One historic period archeological site was discovered near the Central California Traction Railroad in the northwest portion of the Plan Area. This area was assigned a temporary field number, PA-95-61.

Site PA-95-61 consists of a small scatter of 1930s/40s era refuse that was primarily domestic in nature. Broken condiment bottles, fragments of a child's decorated ceramic tea set, sardine cans, red bricks, a sewer pipe fragment, and a bent iron pipe were all discovered protruding from the ground surface. No existing structures, or structures shown on historic period maps or other documentary sources, were located anywhere near this refuse deposit. The closest feature is the Central California Traction Railroad which is located to the west and south of the site area. Given the types of historic period artifacts present at the site, it is unlikely that this refuse was once associated with the railroad. It would appear that this small refuse pile probably represents a single episode dumping of material that was once associated with a residence. The existing structure on this parcel is located approximately 2,000 feet to the north, northwest of PA-95-61. This home was constructed in 1910, however, and it is possible that the refuse deposited at the site originated from this residence.

Historic Structures.

Twelve historic period (greater than 45 years old) structures were identified during the pedestrian and vehicular inspection of the Specific Plan Area. Three of these structures are located within proponents' parcels (the Survey Area), while the remaining nine were found within the remaining Plan Area. Each of the structures was photographed, assigned a temporary field number. Plate CR-F shows the location of each of these structures.

Table CR-1 summarizes the findings for each of the 29 potential historic structures identified during the historic map research. The second column showing the extant (existing) structures provides a reference number that corresponds to their location on the modern Elk Grove map (Plate CR-F). These numbers also correspond to the descriptions of the structures provided later in the text.

No historic period structures were identified in or adjacent to the off-site impact areas.

Summary of Findings.

Peak and Associates has provided the following conclusions regarding their research within the Specific Plan area:

> The Plan Area lies on a flat open plain of the Sacramento Valley with no permanent water sources present. Two intermittent branches of Elder Creek transect the area along the western margin. Prehistoric period campsites and villages are normally not discovered in areas with no permanent water sources. It is entirely likely that the Native American people utilized this area for seasonal resource collection, but did not inhabit the Plan Area on a permanent basis. The gathering/hunting of plants and animals rarely leaves tangible evidence of this activity, other than the isolated, lost tool.
>
> The land of the Plan Area has been in agricultural use from the 1850s up to the present day. Generally, farmers first took up the land with first rate soil, with a later wave of settlers selecting the tracts with second rate soil. The soil type, combined with a lack of natural water sources, made the latter useful for dry land cultivation of hay and grain, or for seasonal grazing. Later, with the development of better systems for pumping water and irrigation, the land could be used more intensively for vineyards and small fruit orchards.
>
> None of the surviving structures within the Survey Area represent the early years of pioneer settlement in this area. The earliest structures date to about the turn of the century. There are a number of structures in the Plan Area dating within the 1900-1920 era representing small rural residence types and agricultural utility buildings common for this period. The types of residences within the Plan Area varied. The two most common styles were the Craftsman bungalow, which was popular throughout rural America from about 1905 to 1920, and the Minimal Traditional, a style that became popular in the late 1930s and remained the dominant style during the post-war 1940s and 1950s. Examples in the Plan Area range from well preserved to poorly maintained to remodeled beyond recognition. None of the extant buildings are associated with important individuals or events, and therefore, do not constitute "important" resources under CEQA criteria in this area.

However, four (4) historic structures have been identified as potentially important due to their architectural integrity and as representative examples of identifiable architectural styles. A summary of these structures and their attributes is provided in Table CR-2. One of these structures, Structure 1, is located within the proponent's parcels (the Survey Area). The

other three (Structures 3, 6, and 7) are located within the remaining Specific Plan planning area. Impacts to these structures as a result of the project would be considered **potentially significant**.

There are several possible courses for avoiding or mitigating adverse effects to the historic structures located within the Plan area. If preservation in place is feasible, they should be saved. If preservation in place is not feasible, then a structure could be moved. If the structure must be destroyed, then its appearance and history should be fully documented beforehand. It is probable that the structures could be individually nominated to the National Register of Historic Places at the local level of significance. If so, documentation according to the standards of the Historic American Buildings Survey would be appropriate. In any event, documentation at that level should be required, that is: complete, archival quality photographic documentation (interior and exterior); preparation of a site-specific historical narrative, including identification of designer, builder, owners and their place in regional history; and recovery of the original architectural plans or, failing this, re-creation of such plans.

No prehistoric, archaeological sites were encountered during the field investigation of the petitioner's parcels. However, the lack of surface evidence does not preclude the existence of important, subsurface cultural materials. There is a potential to unearth buried cultural remains during future project construction activities. Caution should, therefore, be exercised during future development activities. Any accidental encountered of previously unidentified cultural materials will require notification of the Department of Environmental Review and Assessment. If skeletal remains are encountered, both the Department of Environmental Review and Assessment and the County Coroner must be immediately notified (see below). Impacts to subsurface archaeological resources as a result of the project area considered **potentially significant**.

Only the areas of the petitioner's parcels (the Survey Area) and the off-site detention facility and channel realignments have been subject to intensive cultural resource surveys. The potential impacts to cultural resources resulting from the development of these surveyed areas can be characterized at this time. However, remaining parcels within the Specific Plan boundaries and any off-site facility areas identified in the future will require intensive survey. Until such time, impacts to previously unidentified cultural resources in these areas would be considered **potentially significant**.

When specific development plans are filed for parcels not within the proponent's parcel survey area, a part of the requirements will be detailed archeological survey. The purpose of the surveys would be identification of any prehistoric resources and, as necessary, augmentation of the information on historic structures identified by Peak and Associates. It should be noted that although not indicated on the modern USGS map, there could be other

structures in the Plan Area outside of the proponents' parcel survey areas that have not been examined. Certainly there could be structural remnants worthy of evaluation for their historic archeological potential.

As noted earlier, the County of Sacramento has an environmental review process for projects involving discretionary permits that requires cultural resource reports to be prepared in situations where development is proposed in areas known to be sensitive for cultural (archaeological and historic) resources. All future development proposals for the Specific Plan area will be subject to discretionary review. Appropriate evaluation of impacts and mitigation will occur at that time.

Mitigation Measures:

Adoption of the proposed project could result in future disturbance of known and unknown prehistoric and/or historic resources. These impacts are considered potentially significant. As noted above, the County of Sacramento has an environmental review process for projects involving discretionary permits that requires cultural resource reports to be prepared in situations where development is proposed in areas known to be sensitive for cultural (archaeological and historic) resources. Since future development within the Plan area will require additional entitlements such development will also be subject to further discretionary review. Potential construction-related impacts to cultural resources will be addressed at that time. However, to ensure impacts to cultural resources are minimized and addressed at the earliest stages of proposed development, the following measures shall be incorporated into the North Vineyard Station Specific Plan, Draft Policy Plan and development standards and/or design guidelines.

CR-1. Encourage the retention of important cultural features in the design of future projects.

CR-2. Cultural resource surveys will be required in areas not previously subject to intensive investigation (that portion of the Plan Area not currently identified as the proponent's parcels). If ground disturbing activities are planned within or adjacent to the boundaries of any identified archaeological sites, the following shall be required:

(a) The site area will be inspected by a qualified, professional archaeologist to assess the condition of the property and the determine the current status of the deposit.

(b) Based on this review and, as appropriate, a subsurface testing

program will be developed and implemented to determine if the property meets criteria specified in Appendix K of CEQA to qualify as an important archaeological resource. The course of the testing program should be clearly delineated in a research design which outlines prehistory of the area; research domains, questions, and data requirements; research methods inclusive of field and laboratory studies; report preparation; and significance criteria.

(c) Following field investigations, a technical report describing the evaluation program should be prepared. At a minimum this report shall include the elements discussed in the research design, as well as a description of the recovered site assemblage and a significance evaluation. If, based on the results of the testing program, a site is not determined to be an important archaeological resource, then effects to it would have been reduced to less than significant.

(d) If the site is determined to be an important archaeological resource, then additional mitigation measures, namely data recovery investigations may be necessary to reduce impacts to less than significant.

(e) As Native American archaeological resources are involved, identification and treatment shall be conducted in consultation with the local Native American community.

(f) Archaeological investigations shall be conducted by a qualified, professional archaeologist who either meets the federal standards as stated in the Code of Federal Regulations (36 CFR 61) or is certified by the Society of Professional Archaeologists (SOPA).

CR-3. An historic architectural study shall be performed by a qualified, professional architectural historian if historic structures or buildings are present on the particular parcel subject to development. This inventory should comply with NEPA and/or CEQA and include consultation with the NCIC and the Sacramento County Historical Society. The resulting report should include results of the background literature search and field survey, an historic context statement, an analysis of the potential significance of noted

resources, and recommendations for their preservation and/or mitigation.

CR-4. Should any cultural resources, such as structural features, unusual amounts of bone or shell, artifacts, human remains, or architectural remains be encountered during any future development activities, work shall be suspended. Depending on the location of the activities, the appropriate Lead Agency shall be immediately contacted. This agency will coordinate any necessary investigation of the find with appropriate specialists as needed. The project proponent shall be required to implement any mitigation deemed necessary for the protection of the cultural resources. In addition, pursuant to Section 5097.97 of the State Public Resources Code and Section 7050.5 of the State Health and Safety Code, in the event of the discovery of human remains, all work is to stop and the County Coroner shall be immediately notified. If the remains are determined to be Native American, guidelines of the Native American Heritage Commission shall be adhered to in the treatment and disposition of the remains.

Hazardous Materials

Technical Study/Site Assessment.

A hazardous materials technical study, or site assessment, for the Plan Area was prepared by Wallace, Kuhl and Associates, Inc. (hereafter: 'WKA'). This site assessment analysis is entitled *Preliminary Phase 1 Environmental Site Assessment: North Vineyard Station Specific Plan,* WKA No. 2954.01 (December 22, 1995).

The purpose of the site assessment was to evaluate the Plan Area for evidence of potential soil and ground water contamination resulting from current and/or former site activities in accordance with the *Comprehensive Environmental Response, Compensation and liability Act (CERCLA)* of 1980 and the *Superfund Amendments and Reauthorization Act (SARA)* of 1986.

The WKA Phase I Analysis consisted of a database search intended to identify avoidance areas or areas where uses should be limited for land use planning. The Phase 1 Site

Assessment focused on proposed development areas with identified potential hazardous materials impacts and lists potential limitations to land use.

Results of Field Reconnaissance & Windshield Survey:

General.

No obvious evidence of significant hazardous materials contamination were observed, although some evidence and/or features did indicate areas of potential hazardous materials contamination. To address these potential areas of on some non-proponent properties concern closer field reconnaissances of some non-proponent properties will need to be performed. Subsequent to additional field reconnaissance, the necessity to perform Phase 2 soil sampling and testing at the non-proponent sites should be further evaluated. No obvious evidence of potential hazardous materials contamination was observed on the proponents property.

Results of Government Agency Database Review:

Local, state, and federal databases were reviewed with regard to hazardous materials contamination for sites within the project area.

The results of the regulatory agency database review are detailed on Plate HM-C. The databases reviewed were the most current available. In summary, no potential or confirmed, state or federal "Superfund" sites within the project area were identified during review of the former DHS's Bond Expenditure Plan, the EPA's Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) and National Priorities List (NPL), and the Cal-EPA's list of Active Annual Workplan Sites. No Resource Conservation and Recovery Act (RCRA) Generators or U.S. EPA Emergency Response Notification System (ERNS) database sites occur within the project area.

One site located within 500 feet of the project area is listed as a RCRA Generator. This site, Don Manley & Sons Trucking, is located on the south side of Gerber Road near the Rose Nursery. The generator status is most likely the result of the facility generating waste oil stemming from routine truck maintenance.

Databases indicate no known occurrences of the following within the project area: contaminated municipal ground water supply wells; toxic pits; suspect sites flagged for preliminary assessment; spills, leaks, investigations or cleanup sites; active or inactive landfills, and transfer or material recovery stations. The RWQCB and Sacramento County EMD both list the B & E Market as a site where an unauthorized hazardous materials release is known to have occurred. Otherwise, the reviewed databases reveal no known unauthorized hazardous materials release sites within the project area.

B & E Market Hazardous Materials Release.

WKA staff did a reconnaissance of the market and noted that remediation was on-going at this site and recommended no further action was required. Project impacts associated with development in the vicinity of this site are not considered significant in light of the on-going remediation and continued compliance with existing local, state and federal regulatory programs noted previously, designed to protect human health and the environment.

Persistent Agricultural Chemicals.

WKA and EMD staff both concur that the potential for residual agricultural chemical concentrations in existing surficial soils from past agricultural activities is low. Both WKA and EMD staff concur that current strawberry cultivation within the Plan Area is not anticipated to involve the use of environmentally persistent pesticides either, as nearly all of the persistent agricultural chemicals of the organochlorine pesticide variety have been banned since the time of their prevalence in the 1950s, 1960s, and early 1970s.

Project related impacts from persistent agricultural chemicals in the soil are considered ***less than significant.***

PCB.

Numerous pole-mounted electrical transformers exist within the Plan Area. No obvious evidence of transformer leakage was observed on accessible sites. WKA noted that sites within the Plan Area that developed in the early 1980s and later are unlikely to contain PCB-containing transformers. However, many transformers within the Plan Area most likely predate 1979 and are not tagged with respect to PCB content. These transformers are therefore of unknown PCB content.

As non-accessible sites were not evaluated for evidence of PCB transformer leakage, ***potentially significant*** impacts for PCB exposure exist in the Plan Area. Potential PCB exposures resulting from future Plan Area development will be mitigated to a less than significant level by implementation of mitigation measure TX-1, requiring a site reconnaissance of these sites. If PCB contamination/leakage is identified during future site reconnaissance, remediation and disposal procedures shall be undertaken by qualified personnel in accordance with all applicable regulations, and in coordination with all applicable agencies.

Future development's required compliance with mitigation TX-1 and with applicable laws, regulations and standards ***reduce this potential impact to a less than significant level.***

Asbestos.

Because the federal government banned nearly all uses of friable asbestos in building materials in 1978/79, existing structures within the Plan Area built subsequent to 1979 are not likely to contain asbestos in their building materials. However, most of the existing structures within the Plan Area predate 1979 and potentially contain asbestos in their building materials.

As noted by WKA and EMD staff, asbestos surveys of these existing buildings is required. Future Plan Area development and demolition of these pre-1979 structures presents a ***potentially significant*** impact for asbestos exposure.

Compliance with mitigation TX-2 and with applicable laws, regulations and standards will ***reduce this potential impact to a less than significant*** level.

Well Contamination.

Numerous water supply wells are located within the Plan area, some of which are currently in an improperly abandoned condition. However, since there are no large quantity agricultural wastewater producers, industrial facilities, or commercial facilities that discharge wastewater to land within the Plan area and the existing dairy within the Plan area is a relatively small-scale operation, groundwater contamination impacts from agricultural waste water producers are ***not considered significant.***

WKA did observe several stored and abandoned vehicles and other materials and debris located behind the structures of the Rose Nursery. In 1993, underground gasoline tanks were removed from the B & E Market site, located on the northwest corner of Bradshaw and Gerber roads. Although petroleum residues were detected in subsurface soils, the potential for groundwater contamination is low and considered ***less than significant.***

However both WKA and County EMD staff did note that the improperly abandoned water wells will need to be abandoned properly. WKA also noted that septic systems should be properly abandoned also.

Compliance with mitigation measure TX-3 and with applicable laws, regulations and standards ***will reduce this potential impact to a less than significant level.***

Petroleum Pipeline.

As previously noted, a buried liquid petroleum pipeline, owned, operated and maintained by Santa Fe Pacific Pipeline Partners, L.P., lies beneath the western edge of the Bradshaw Road right-of-way. No leaks, ruptures or problems are known to have occurred along the pipeline course adjacent to or in the vicinity of the Plan area. The section of pipeline within the Plan area does not appear on the regulatory agency databases as an identified contamination or spill site.

Project impacts associated with future development in the vicinity of this pipeline is considered ***less than significant.***

Debris

As noted in the technical study, several sites within the Plan Area contain either building demolition debris or a substantial quantity of apparently abandoned or discarded items.

To ensure that proper debris removal is completed at the earliest stages of proposed development, mitigation measure TX-4 shall be incorporated into the proposed Specific Plan Policies and Development Criteria and/or the proposed Public Review Draft Specific Plan document.

Compliance with mitigation measure TX-4 and with applicable laws, regulations and standards ***will reduce this potential impact to a less than significant level.***

Impacts related to hazardous materials are considered ***potentially significant but can be reduced to less than significant levels*** with the incorporation of identified hazardous materials policy and development standard mitigation measures into the proposed Specific Plan policies and/or document.

Mitigation Measures:

To ensure hazardous materials impacts for the Plan Area are minimized and addressed at the earliest stages of proposed development, the following hazardous materials "institutional" or policy mitigation measures shall be incorporated into the proposed Specific Plan Policies and Development Criteria (Appendix A) and/or the proposed Public Review Draft Specific Plan document.

TX-1 Future development on non-proponent properties identified as requiring a "site reconnaissance" on Table HM-1 shall prepare and submit a site-specific field reconnaissance or preliminary site assessment according to State and County requirements. If contamination is identified, remediation and disposal procedures shall be undertaken by qualified personnel in accordance with all applicable regulations, and in coordination with all applicable agencies.

TX-2 Future development and/or demolition of pre-1979 structures shall prepare and submit an asbestos survey according to State and County requirements. If asbestos contamination is identified, remediation and disposal procedures shall be undertaken by qualified personnel in accordance with all applicable regulations, and in coordination with all applicable agencies.

TX-3 Future development shall identify existing septic tanks and/or water wells to be abandoned and abandon them according to State and County requirements.

TX-4 Future development on properties identified as requiring proper "debris removal" on Table HM-4 shall remove all debris, trash, rubble, refuse and abandoned, discarded and/or out-of-service items from the affected properties and dispose of or recycle off-site according to State and County requirements.

ALTERNATIVES

According to the CEQA Guidelines, an EIR must describe a reasonable range of alternatives to the project, or to the location of the project, which would feasibly attain the basic project objectives. The feasible alternatives to be considered must focus on alternatives that are capable of eliminating or substantially reducing significant adverse impacts caused by the proposed project. Alternatives to the "whole of the project" rather than the project's component parts should be presented in the EIR. The comparative merits of these alternatives must be described and evaluated. The CEQA Guidelines require that "no project alternative" be evaluated, and that an environmentally superior alternative be designated. If the alternative with the fewest or least severe environmental impacts it the "no project alternative", one of the other alternatives should be designated environmentally superior.

This Alternatives section describes the "No Project Alternative" along with a "Increased Density/TOD/Wetlands Preserve Alternative" to address the significant adverse impacts identified for the proposed project while still meeting the basic objectives of the proposed Plan (see Project Objectives section). A relocation or alternate site alternative is not being considered because the project site was deemed an Urban Development Area under the 1993 General Plan. Any alternate site considered would also have to be located within the Urban Development Area designation in order the accomplish the objectives of the project. Consideration of project sites outside of the designated Urban Development Area would likely result in worse impacts. The other project alternatives, 10% Residential Density Reduction Alternative, 15% Residential Density Reduction Alternative, and Modified Core Alternative, were given equal-level consideration throughout this document and were judged to have the same impacts as the Preferred Plan. In other words, these project alternatives do not substantially mitigate any of the impacts identified for the Preferred Plan.

The significant environmental impacts that the Alternatives will seek to eliminate or reduce are:

- Traffic congestion
- Air quality degradation
- Lost opportunities for high level transit service
- Special status species losses
- Loss of opportunity for housing diversity
- Loss of affordable housing opportunities
- Costly infrastructure expansion
- Potential loss of more open space and agricultural lands
- Noise impacts existing receptors
- Loss of important cultural and historic resources

No Project Alternative

The No Project Alternative would keep the existing zoning of the Plan Area in place. The area could then be built to the maximum densities allowed in the AR-2, AR-10, and AG-20 zones (plus a very small parcel of GC zoned land). The existing development entitlements would limit the area to staying very rural in character. Much of the project site could be retained in its present condition and the adverse impacts associated with the Preferred Plan and Proposed Alternatives would be avoided.

From the stand point of avoiding direct physical impacts to the environment, the No Project Alternative appears to be the environmentally superior alternative. However, the No Project Alternative does not meet General Plan goals, objectives and policies in that the North Vineyard Station Specific Plan Area was designated an Urban Development Area for the expressed purpose of accommodating, in part, the growth projected for the County during the 20- year planning horizon. By not accommodating projected growth at this site, the growth needs are likely to be displaced elsewhere to another location that may not be as appropriately situated. The environmental implications of displacing growth may be greater than those impacts associated with the subject project. This would be particularly true if the displaced development was to occur outside of the Urban Policy Area or, worse yet, outside the Urban Services Boundary where no development is envisioned during the next 20 years. Furthermore, the No Project Alternative does not meet the project objectives which, in sum, are intended to guide the formulation of a comprehensive land use plan for an intended growth area. For these reasons, the No Project Alternative is <u>not</u> the environmentally superior alternative.

Increased Density/TOD/Wetlands Preserve Alternative

This alternative attempts to reduce the numerous significant impacts of the proposed project. It is primarily shaped by compliance with General Plan policies, particularly those in the Land Use Element, Housing Element, and Conservation Element. The Land Use section of this document identifies several inconsistencies the project has with adopted General Plan policies. The Biological Resources section of this document points out the project's inconsistencies with the Conservation Element policies (as well as US Fish and Wildlife Service guidelines) for failure to consider avoidance of wetlands, that is, on-site preservation, as its first priority for mitigation of impacts to wetlands and special status species. The project alternative described in this section will provide remedies for seemingly dissimilar impacts of the project.

Many of the project inconsistencies with the Land Use Element and Housing Element stem from the fact that the Specific Plan densities are overall low compared to densities estimated as appropriate during update of the General Plan in 1993, and do not promote the efficient use of land to sustain a compact urban area that is readily serviceable fully by public transit. The overall growth strategies outlined during the last General Plan Update process seek to:

> ...address the county's most pressing problems: urban sprawl, escalating traffic congestion, non-attainment of regional air quality standards, and growing demand for housing opportunities which meet the needs of an increasingly diverse population. These growth strategies also recognize that reliance upon typical patterns of low density urban development will not address these problems, and new forms of urban development are needed during the county's next twenty years of growth. Consistent with these concerns, the Land Use Element has established the following guiding principles:
>
> - Maximize the use of existing urbanized areas.
> - Reduce consumption of non-urban areas.
> - Link land use with transit
> - Reduce the number of auto trips and regional Vehicle Miles Travelled (VMT).
> - Reduce air pollutant emissions
> - Provide a diversity of housing types.
> - Design the urban area efficiently
>
> (TOD Design Guidelines, Calthorpe Associates, September 1990)

The Transit Oriented Development (TOD) concept was embraced during the General Plan Update process as the key growth strategy to implement the guiding principles of the Land Use Element. Under the TOD concept, new medium and high density housing, public uses, and a majority of neighborhood commercial uses are intended to be concentrated in mixed-use developments located at strategic points along the regional transit system. The Vineyard Area Conceptual Plan (Plate LU-F) of the County General Plan shows plausible TOD sites for the project area. The TOD Design Guidelines state:

> This linkage between land use and transit is designed to result in an efficient pattern of development that supports a regional transit system and makes significant progress in reducing traffic congestion and air pollutants. The TOD's mixed-use clustering of land uses within a pedestrian-friendly area connected to transit provides for growth with minimum environmental and social costs.

The implementation TOD design concept would also bring the project into compliance with the Regional Transit (RT) Master Plan. RT's concerns about the lack of transit opportunities in the Plan Area are disclosed at length in the Land Use section of this document.

Increasing residential densities throughout the plan area to implement the TOD design concept will have a corresponding beneficial effect on mitigating the identified adverse impacts of the project on existing wetlands and special status species. The Biological Resources section of this document suggests an on-site wetland preserve plus avoidance measures as an option to the proposed 100% off-site mitigation plan. While total preservation or avoidance of wetlands in an area designated for urban growth is not practical, a 200-acre preserve (the minimum size considered to be viable per *Sacramento County Vernal Pools* report) could be accommodated. Under this preserve/avoidance scenario, consideration can be given to a wider drainage corridor alternative (discussed in the Hydrology and Flooding section of this report) suggested by NOP reviewers along with accompanying drainage corridor policies for Elder and Gerber Creeks. Although the wider drainage corridors are not needed to sustain a functional drainage system, the wider corridors would increase open space to help avoid wetland impacts.

The increased acreage devoted to open space in the plan area could be offset by increasing average residential densities in the developable portions , thereby resulting in no net loss in the holding capacity of the Plan Area. The logical location for a 200-acre wetland preserve is east of Bradshaw Road where venal pool concentrations are the highest. The Specific Plan Land Use Diagram indicates that the area that may be displaced by a wetlands preserve is primarily designated for Single Family Residential 1-3 and 3-5 units per acre (SFR 1-3 and SFR 3-5). Since these are the two lowest density residential categories proposed in the Specific Plan, the displaced housing units could be recouped by proportionately increasing residential densities in the other residential categories.

Pursuant to the CEQA Guidelines, the "Increased Density/TOD/Wetlands Preserve Alternative" is deemed the environmentally superior alternative because it could reduce many of the adverse impacts caused by the proposed project.

PROJECT DESCRIPTION

Project Characteristics

Background.

The North Vineyard Station Specific Plan (Control Number 93-SFB-0238) was initiated by the Board of Supervisors on January 19, 1994. The North Vineyard Station Specific Plan (NVSSP) project includes both written and graphic descriptions of how all land within the Plan Area will ultimately be used and developed as proposed. In addition, the proposed Specific Plan includes both written and graphic descriptions of the location, extent, and cost (1996 dollars) of public facilities and infrastructure required to serve ultimate development of the Plan Area if approved.

A Specific Plan is an application tool to implement the Sacramento County General Plan on an area-specific basis. The proposed Specific Plan will serve as both a policy and regulatory document for the project/Plan Area. The proposed Plan includes policy direction and development concepts for development of the Plan Area, generally consistent with the County's General Plan. The Plan also includes development standards and design guidelines which address unique situations within the Plan Area.

The project/Plan Area encompasses 1,590± acres of the Vineyard Community Planning Area. The Plan Area is bounded by Florin Road to the north, Gerber Road and/or Gerber Creek on the south, the northerly extension of Vineyard Road on the east, and generally by Elder Creek on the west (see Plate PD-A).

The NVSSP project is a joint effort of the Sacramento County Planning and Community Development Department and individual property owners within the Plan Area represented by attorney, George E. Phillips. (The list of individual property owners affiliated with this project and location of their property is disclosed at the end of the project description). Numerous workshops in the community have been conducted to involve other local citizens and property owners in the preparation of the proposed specific plan land use plan for the project area. The land use plan prepared during this process was presented to the County Board of Supervisors in July 1995. The Board endorsed this as the Preferred Specific Plan, but also directed that three project alternative plans be prepared for consideration during the environmental review and public hearing process.

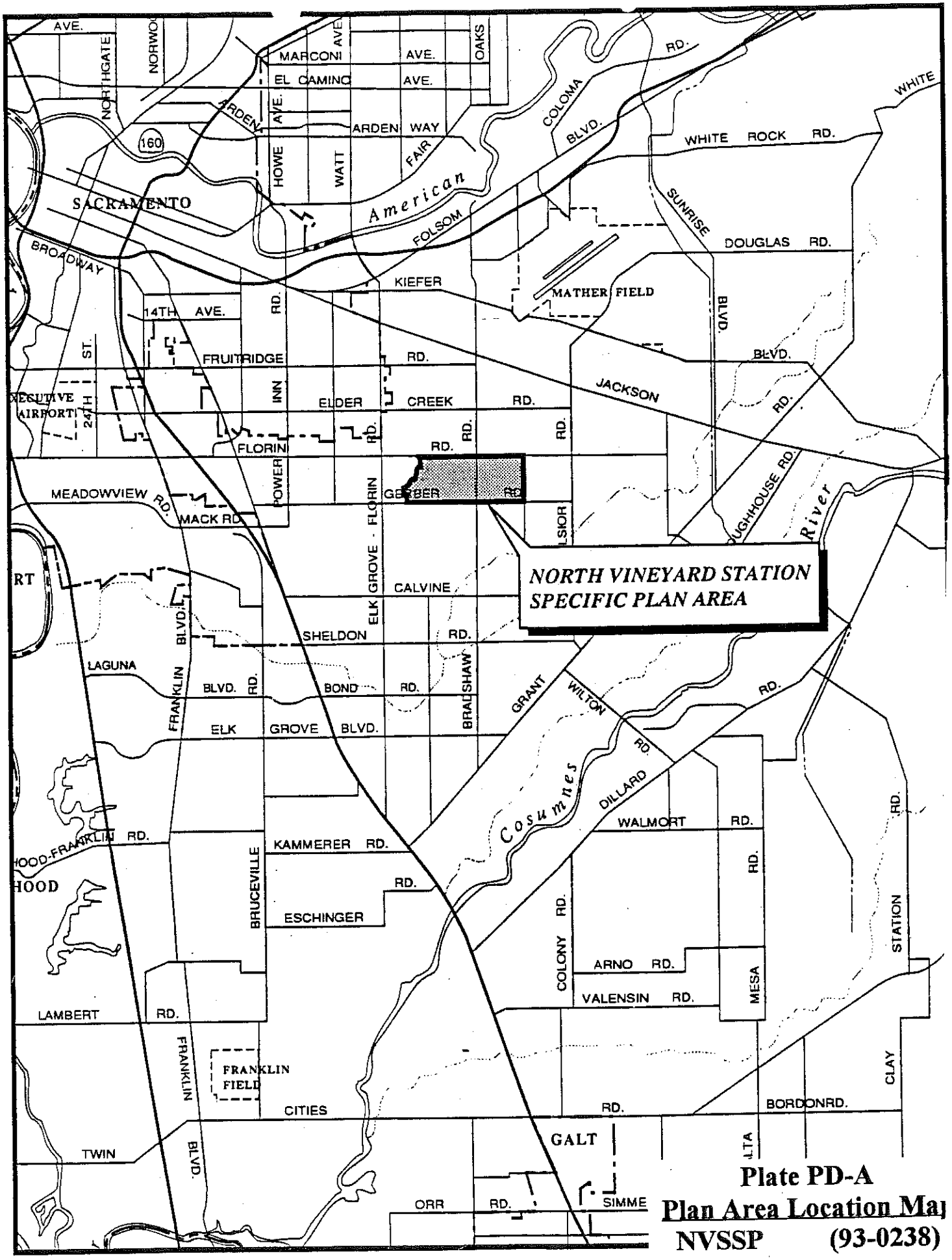


Plate PD-A

Plan Area Location Map

NVSSP (93-0238)

Proposed Specific Plan & Project Alternatives.

The following section describes the proposed "Preferred Specific Plan", and three project plan alternatives prepared in response to the Board of Supervisors direction (see Plates PD-B through PD-E). The three project plan alternatives include: a 10% Residential Density Reduction Alternative, a 15% Residential Density Reduction Alternative, and a Modified Core Alternative as described below.

Preferred Specific Plan.

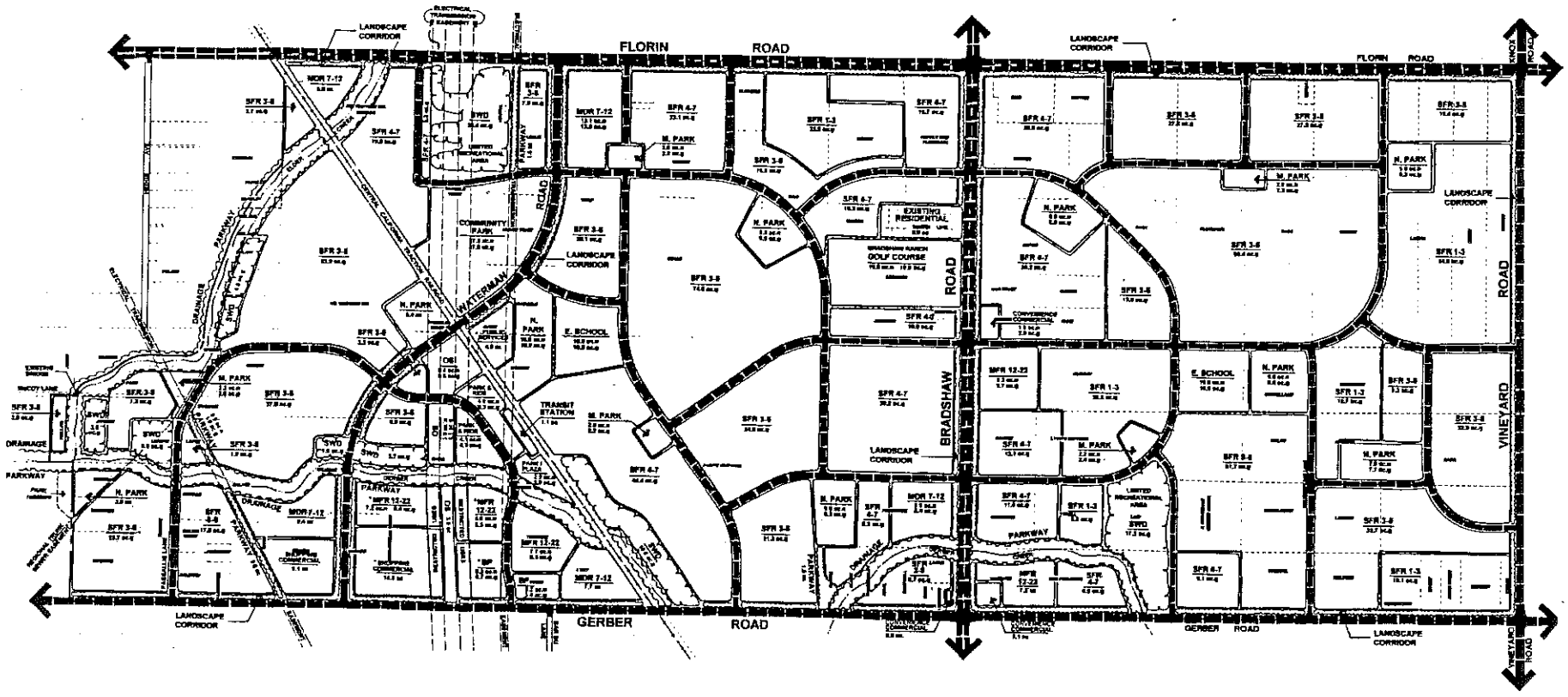
The proposed plan is the Preferred Specific Plan developed by the project co-sponsors. The Preferred Specific Plan consists of a 6,339-dwelling unit (DU) residential land use plan with supporting commercial, business professional, park, school, and open space uses. The urban core and focus area of the Preferred Plan, is located on the north side of Gerber Road and west of the Central California Traction Railroad, along a portion of Gerber Creek. The Preferred Plan urban core and focus area includes commercial, business professional, and multi-family residential uses located in proximity to the railroad tracks and Gerber Creek. Proposed urban core and focus area uses include a transit station, park and ride lots, a park plaza and a drainage parkway and related amenities along Gerber Creek. The Preferred Plan includes two elementary school sites, one on each side of Bradshaw Road, and several community and neighborhood parks. The Preferred Specific Plan: Land Use Plan (graphic) is shown on Plate PD-B.

10% Density Reduction Specific Plan Alternative (-10% Alternative).

The 10% Density Reduction Specific Plan Alternative, or "-10% Alternative", is in response to direction by the Board of Supervisors to prepare a land use plan that proposes a ten percent reduction in residential dwelling unit yield from that depicted on the Preferred Plan. The -10% Alternative plan land use pattern is essentially the same as the Preferred Plan, but with reduced residential densities. The reduction in overall residential densities is accomplished by converting 45.4 acres of medium density residential uses and 287.3 acres of single family low density residential uses of 4 to 7 dwelling units per acre to single family density of 1 to 5 dwelling units per acre. In addition, approximately 8.5 acres of 'Park' acreage is also converted to single family low density residential use of 1 to 5 dwelling units per acre.

The overall residential capacity of the -10% Alternative Plan is 5,759 dwelling units, 580 units less than the Preferred Plan. There is no medium density (4-7 du/ac) residential use in the -10% Alternative Plan. The urban core and focus area acreages remain generally the same as the preferred plan. The -10% Alterative is presented on Plate PD-C. Table PD-1 provides an acreage and/or dwelling unit (DU) comparison summary of the Preferred Plan and the -10% Alternative Plan land uses, as well as the-15% Alternative Plan..

Plate PD-B
Preferred Specific Plan
NVSSP (93-0238)

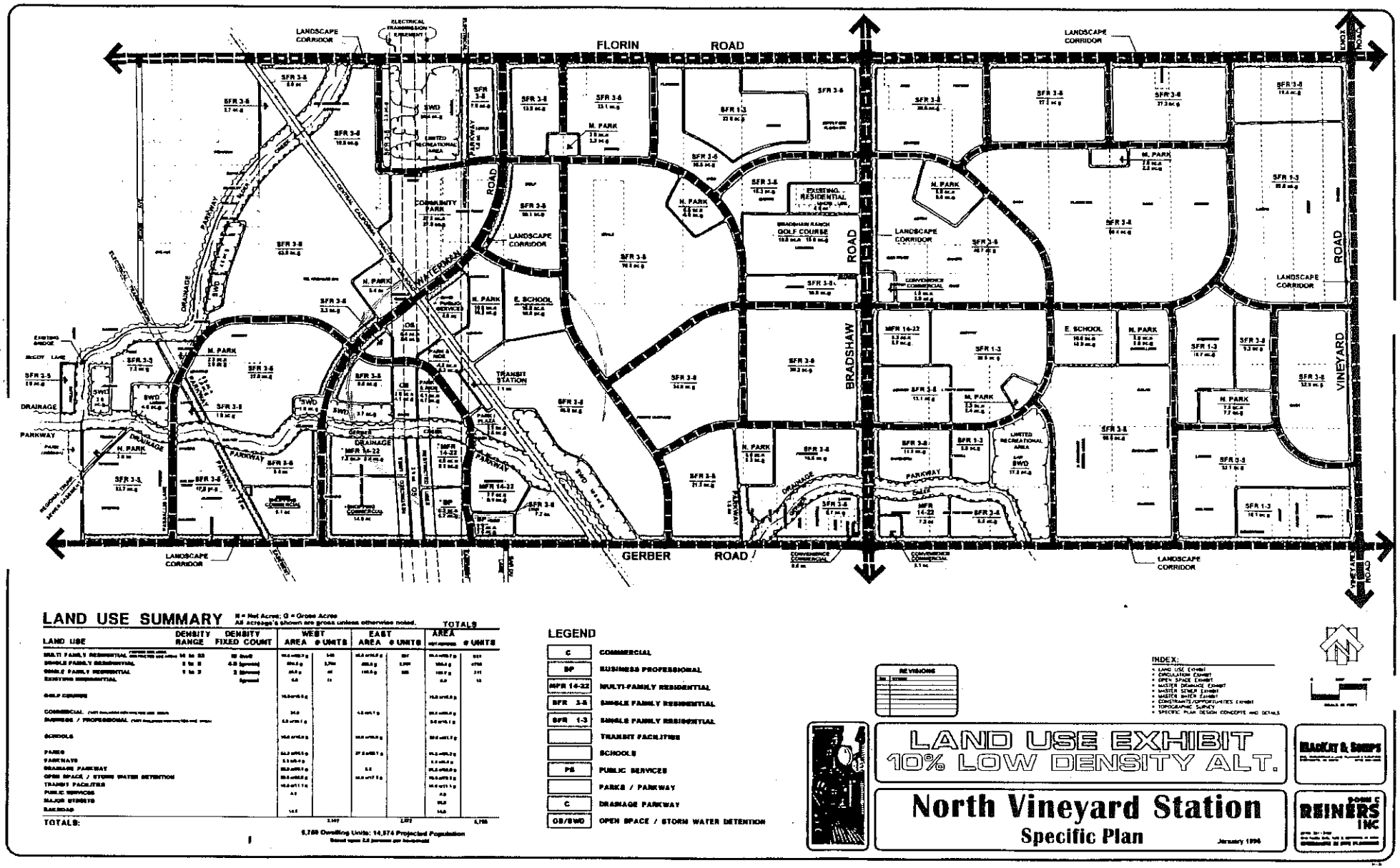


LEGEND

C	COMMERCIAL
BP	BUSINESS PROFESSIONAL
MFR 12-22	MULTI-FAMILY RESIDENTIAL
MDR 7-12	MEDIUM DENSITY RESIDENTIAL
SFR 4-7	SINGLE FAMILY RESIDENTIAL
SFR 3-6	SINGLE FAMILY RESIDENTIAL
SFR 1-3	SINGLE FAMILY RESIDENTIAL
	SCHOOLS
PS	PUBLIC SERVICES
	PARKS / PARKWAY
	DRAINAGE PARKWAY
OS/SWD	OPEN SPACE / STORM WATER DETENTION
	TRANSIT FACILITIES

0 300' 600'
SCALE IN FEET

Figure 3.2
Specific Plan Land Use Diagram



4.2b

Plate PD-C

-10% Alternative Specific Plan

NVSSP (93-0238)

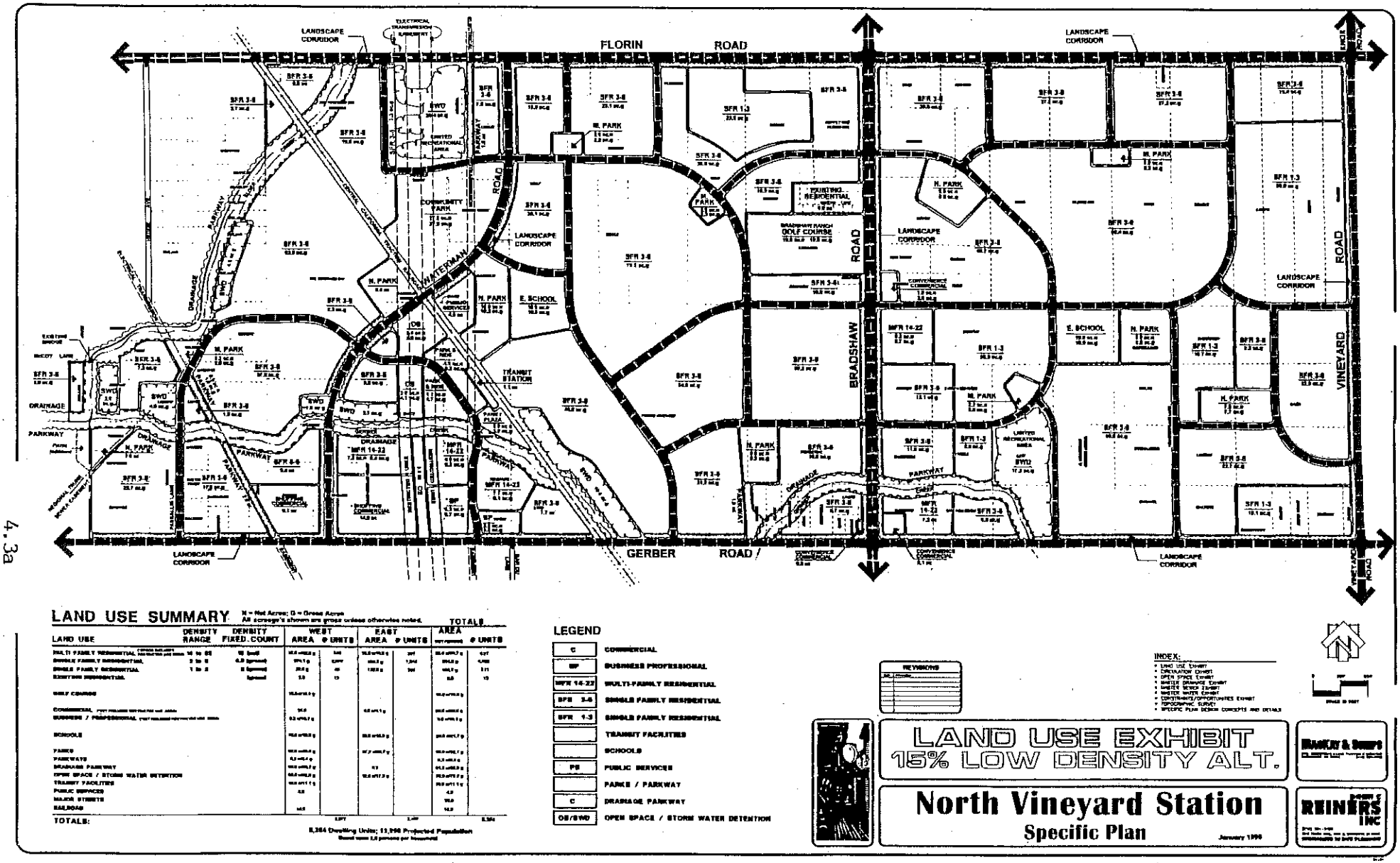
15% Density Reduction Specific Plan Alternative (-15% Alternative).

The general character of the 15% Density Reduction Specific Plan Alternative is a plan that provides a 15 percent reduction of the overall residential capacity of the Preferred Plan as requested by the Board of Supervisors. Similar to the -10% Plan, the land use pattern is generally the same as the Preferred Plan, but with further reduction of the Preferred Plan residential densities. The reduction in overall residential densities is accomplished by converting 45.4 acres of medium density residential uses and 287.3 acres of single family low density residential uses of 4 to 7 dwelling units per acre to single family density of 1 to 5 dwelling units per acre. In addition, approximately 12 acres of 'Park acreage is also converted to single family low density residential use of 1 to 5 dwelling units per acre.

The overall residential capacity of the -15% Alternative Plan is 5,384 dwelling units, 991 units less than the Preferred Plan and 403 units less than the -10% Alternative Plan. There are no medium density (4-7 du/ac) units included in the-15% Alternative just as int he -10% Alternative Plan. The -15% Plan is presented on Plate PD-D. Table PD-1 provides an acreage and/or dwelling unit (DU) comparison summary of the Preferred Plan and the -15% Alternative Plan, as well as the -10% Alternative Plan.

Modified Core Specific Plan Alternative.

The Modified Core Specific Plan Alternative or Core Relocations Alternative (Plate PD-E.1 and Plate PD-E.2), proposes relocation of the core area's mix of commercial, business professional, and multi-family residential uses from the south-west Plan Area (Waterman Road, Gerber Road/Creek area) to the north-central Plan Area (Bradshaw Road and Florin Road). However, the transit station, park and ride lots, and park plaza remain adjacent to the Central California Traction Railroad. The modified core area contains the same relative mix of commercial, business professional, multi-family residential, and public/quasi-public land uses as the Preferred Plan core area. However the modified core alternative does not include any drainage parkway features or improvements adjacent to the urban core and focus area as does the Preferred Plan. The Modified Core Specific Plan Alternative may be combined or overlayed with the Preferred Specific Plan, the -10% Alternative, or the -15% Alternative.



4.3a

Plate PD-D

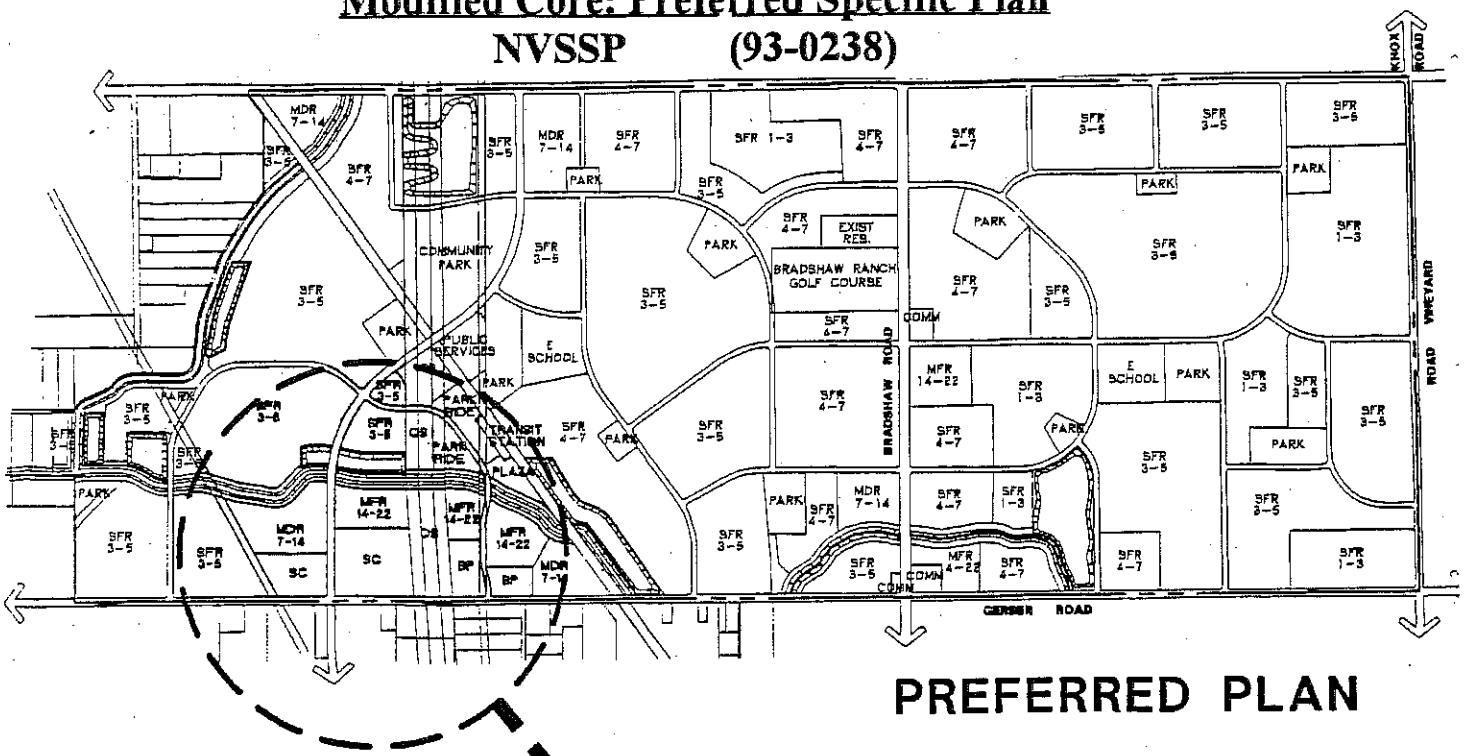
-15% Alternative Specific Plan

NVSSP (93-0238)

Plate PD-E.1

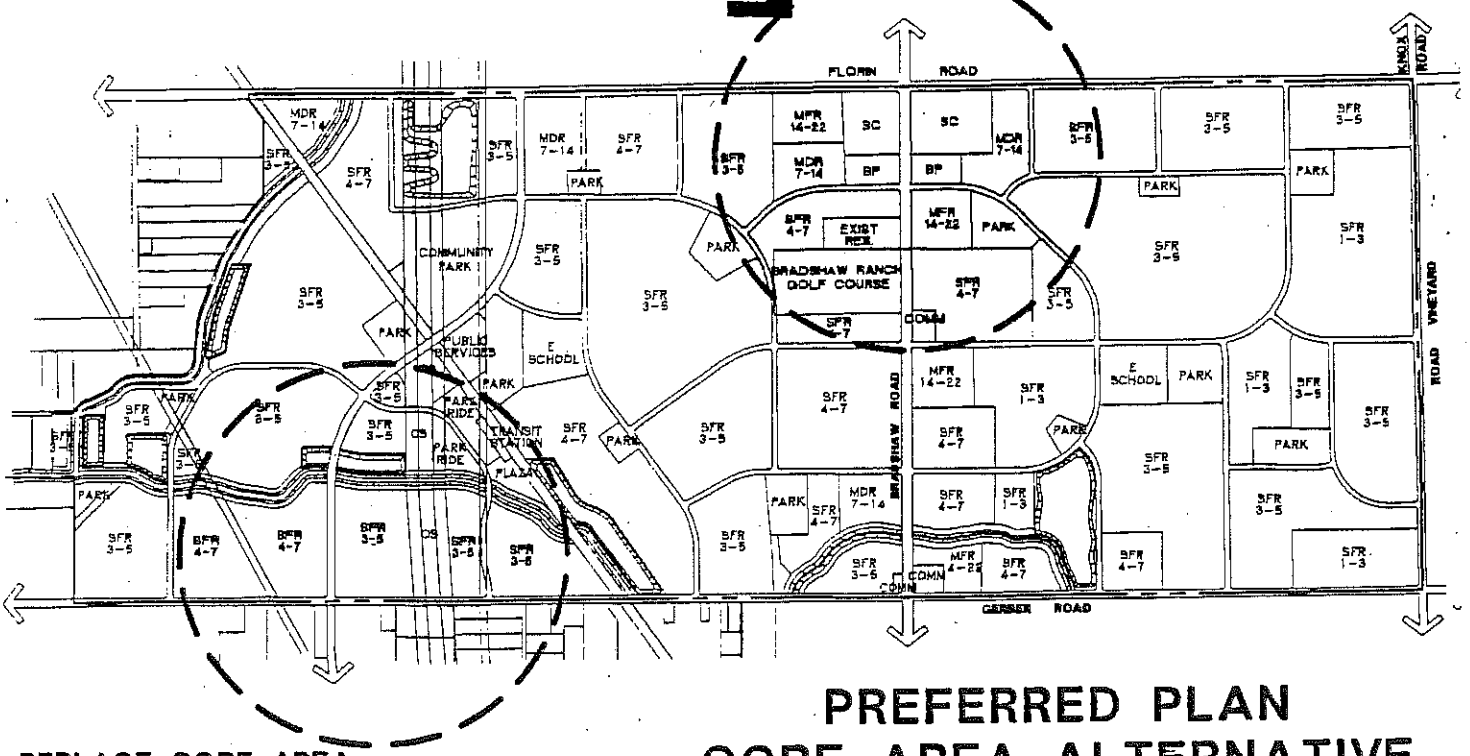
Modified Core: Preferred Specific Plan

NVSSP (93-0238)



PREFERRED PLAN

MOVE CORE AREA FROM GERBER & WATERMAN TO FLORIN & BRADSHAW



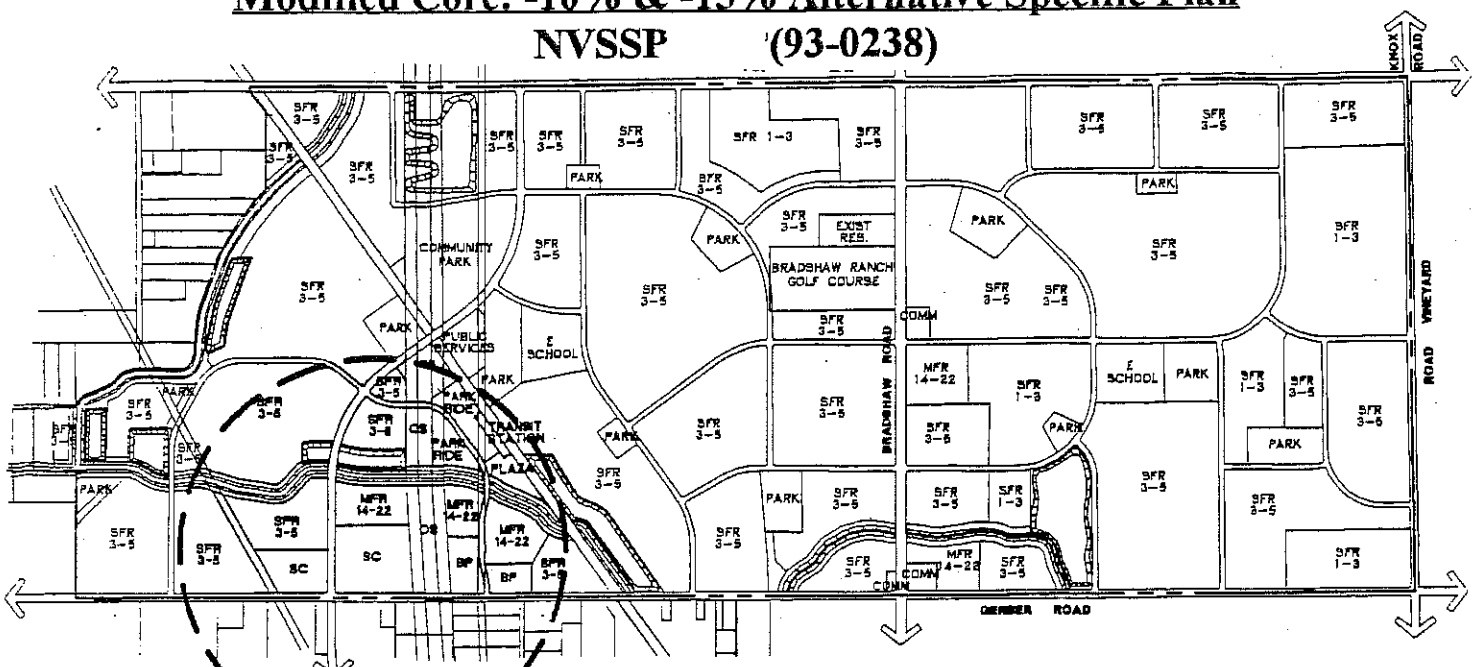
PREFERRED PLAN
CORE AREA ALTERNATIVE

REPLACE CORE AREA WITH SINGLE FAMILY RESIDENTIAL USES.

Plate PD-E.2

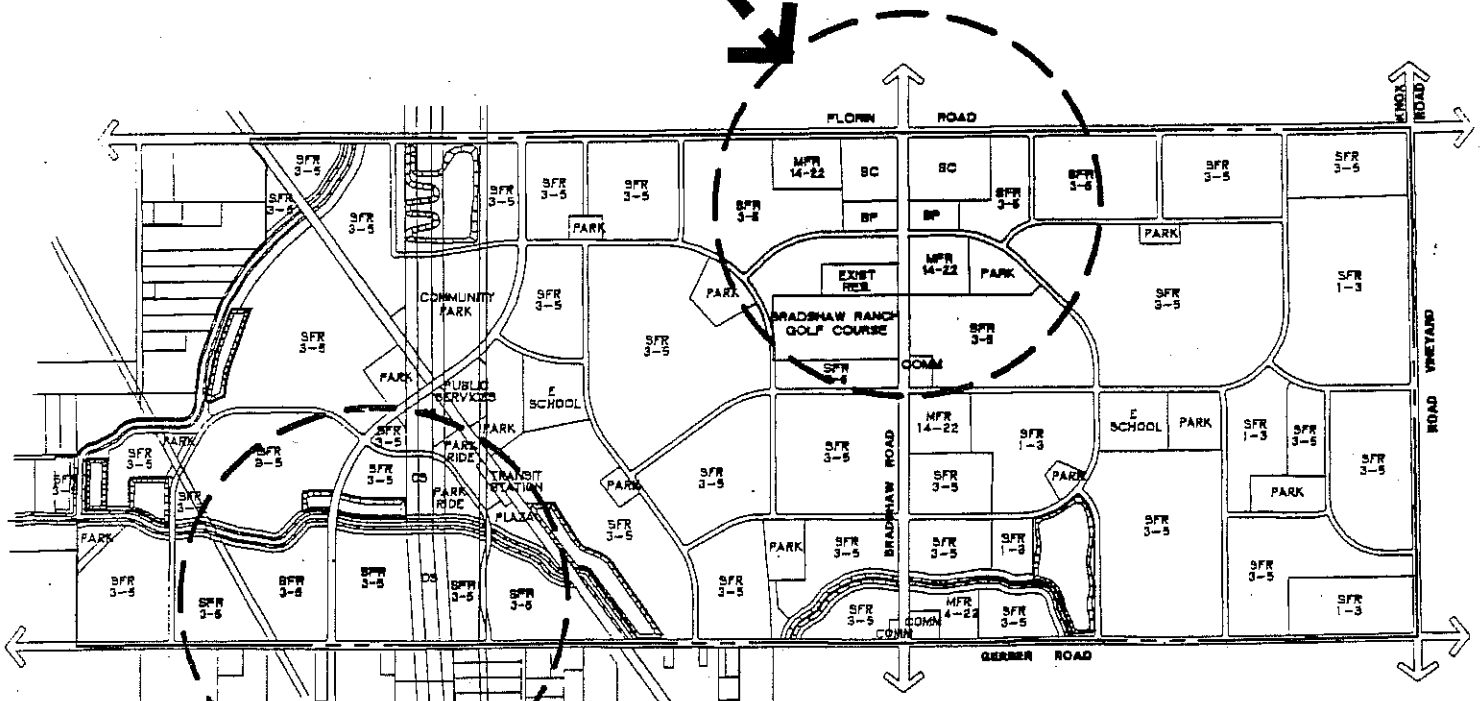
Modified Core: -10% & -15% Alternative Specific Plan

NVSSP (93-0238)



10% & 15% LOW DENSITY ALTERNATIVE

MOVE CORE AREA FROM GERBER & WATERMAN TO FLORIN & BRADSHAW



10% & 15% LOW DENSITY ALTERNATIVE

REPLACE CORE AREA WITH SINGLE FAMILY RESIDENTIAL USES.

CORE AREA ALTERNATIVE

Table PD-1
Land Use Summary
Preferred Plan and Alternatives

Land Use	Preferred Plan		-10% Alt.		-15% Alt.	
	Acres	Units	Acres	Units	Acres	Units
Residential						
Multi Family (14-22 du/ac)	39.7	637	39.7	637	39.7	637
Medium Density (7 to 12 du/ac)	45.4	442	-	-	-	-
Single Family (4-7 du/ac)	287.3	1,724	-	-	-	-
Single Family (3 to 5 du/ac)	644.5	3,222	980.4	4,796	984.0	4,423
Single Family (1 to 3 du/ac)	150.4	301	155.7	311	155.7	311
Existing Residential	6.0	13	6.0	13	6.0	13
Commercial	28.6	-	28.6	-	28.6	-
Business Professional	10.1	-	10.1	-	10.1	-
Schools	21.7	-	21.7	-	21.7	-
Parks	104.7	-	96.2	-	92.7	-
Parkways	6.4	-	6.4	-	6.4	-
Golf Course	19.9	-	19.9	-	19.9	-
Drainage Parkway	62.0	-	62.0	-	62.0	-
Open Space/Storm Water Detention	79.2	-	79.2	-	79.2	-
Transit Facilities	11.1	-	11.1	-	11.1	-
Public Services	4.9	-	4.9	-	4.9	-
Major Streets	58.0	-	58.0	-	58.0	-
Railroad	14.6	-	14.6	-	14.6	-
Totals	**1,594.5**	**6,339**	**1,594.5**	**5,759**	**1,594.5**	**5,384**
difference in dwelling units)			*(-580)*		*(-991)*	

Amendments to Existing Plans.

General Plan Land Use Diagram Amendment.

The existing General Plan designation for the entire Plan Area is "Urban Development Area" (see Plate PD-F). Amendments to the County General Plan Land Use Diagram are necessary for the proposed land uses and residential densities shown on the Preferred Specific Plan Land Use Plan and each of the alternative plans, if adopted. Plate PD-G shows the proposed General Plan designation for the Preferred Plan. Plates PD-H and PD-I show the proposed designations for the -10% Alternative Plan and the -15% Alternative Plan, respectively. Plates PD-J.1 and PD-J.2 shows the proposed General Plan designations for the Modified Core Alternative under either the Preferred Specific Plan or the -10% and the -15% Alternative Plans. Table PD-2 summarizes the County General Plan Designation acreages for the Preferred Plan, the -10% Alternative, and the -15% Alternative.

It should be noted that Specific Plan residential categories are different from those of the General Plan. The General Plan designation of "Medium Density" Residential at 13 to 30 units per acre is much higher than the "Medium Density" designation of the Specific Plan at 7 to 12 du/ac. This density range is considered "Low Density" under the General Plan. The Multi Family" designation of the Specific Plan at 14 to 22 du/ac is consistent with the "Medium Density" category of the General Plan.

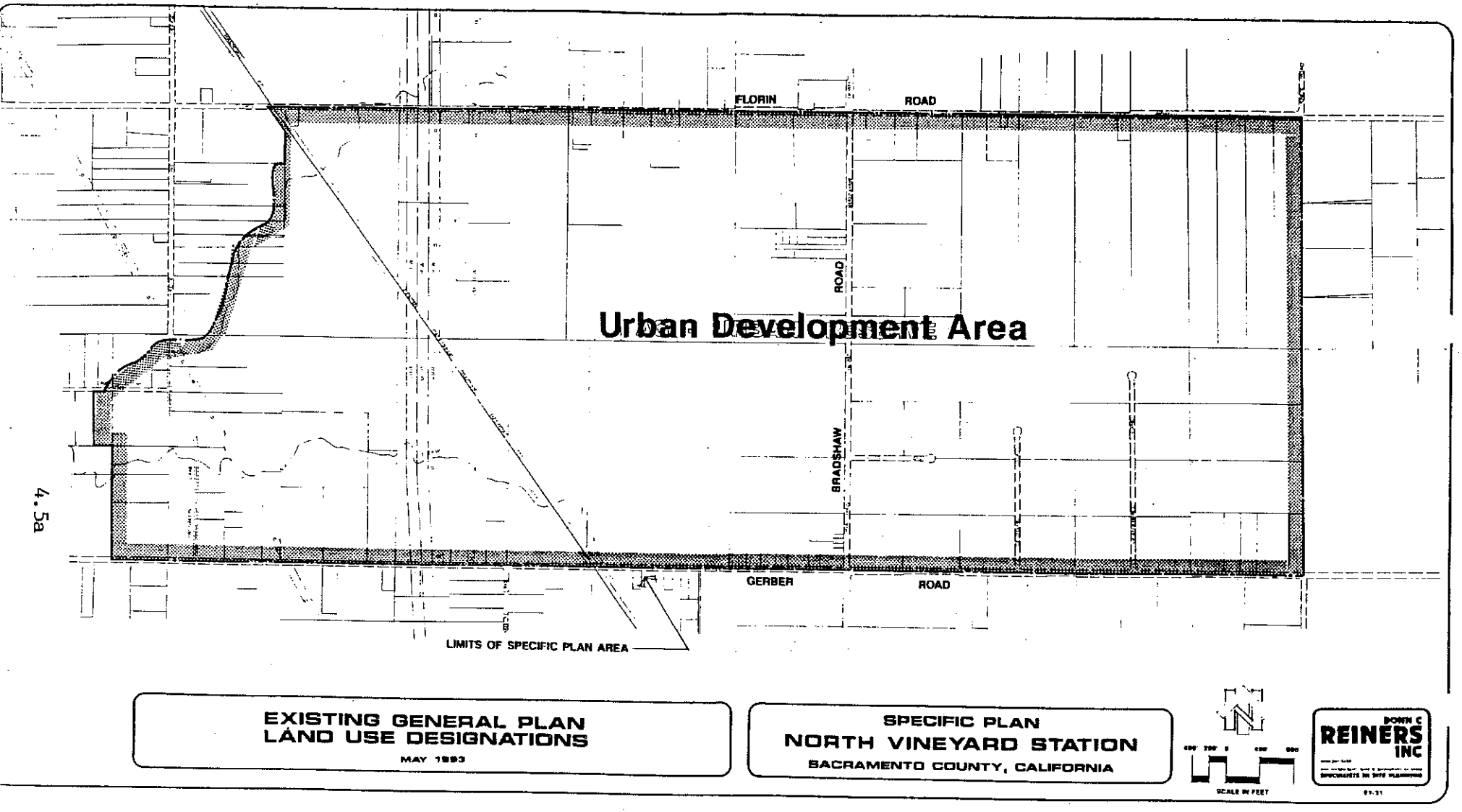


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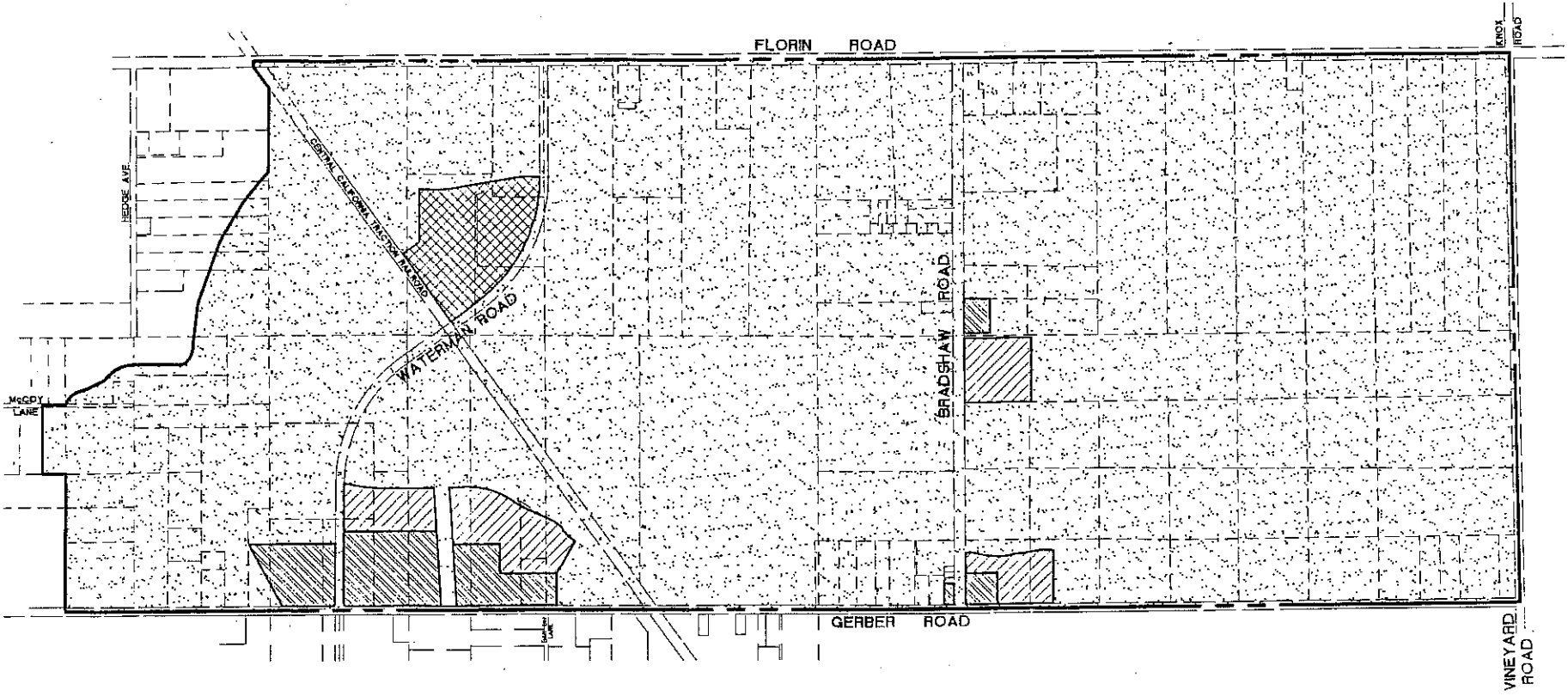
Plate PD-F
Existing General Plan
NVSSP (93-0238)

Plate PD-G
Preferred SP General Plan
NVSSP (93-0238)



LEGEND

- LOW DENSITY RESIDENTIAL
- MEDIUM DENSITY RESIDENTIAL
- COMMERCIAL & OFFICE
- RECREATION

NOT TO SCALE

Figure 3.1.C
Proposed General Plan Land Use Designations

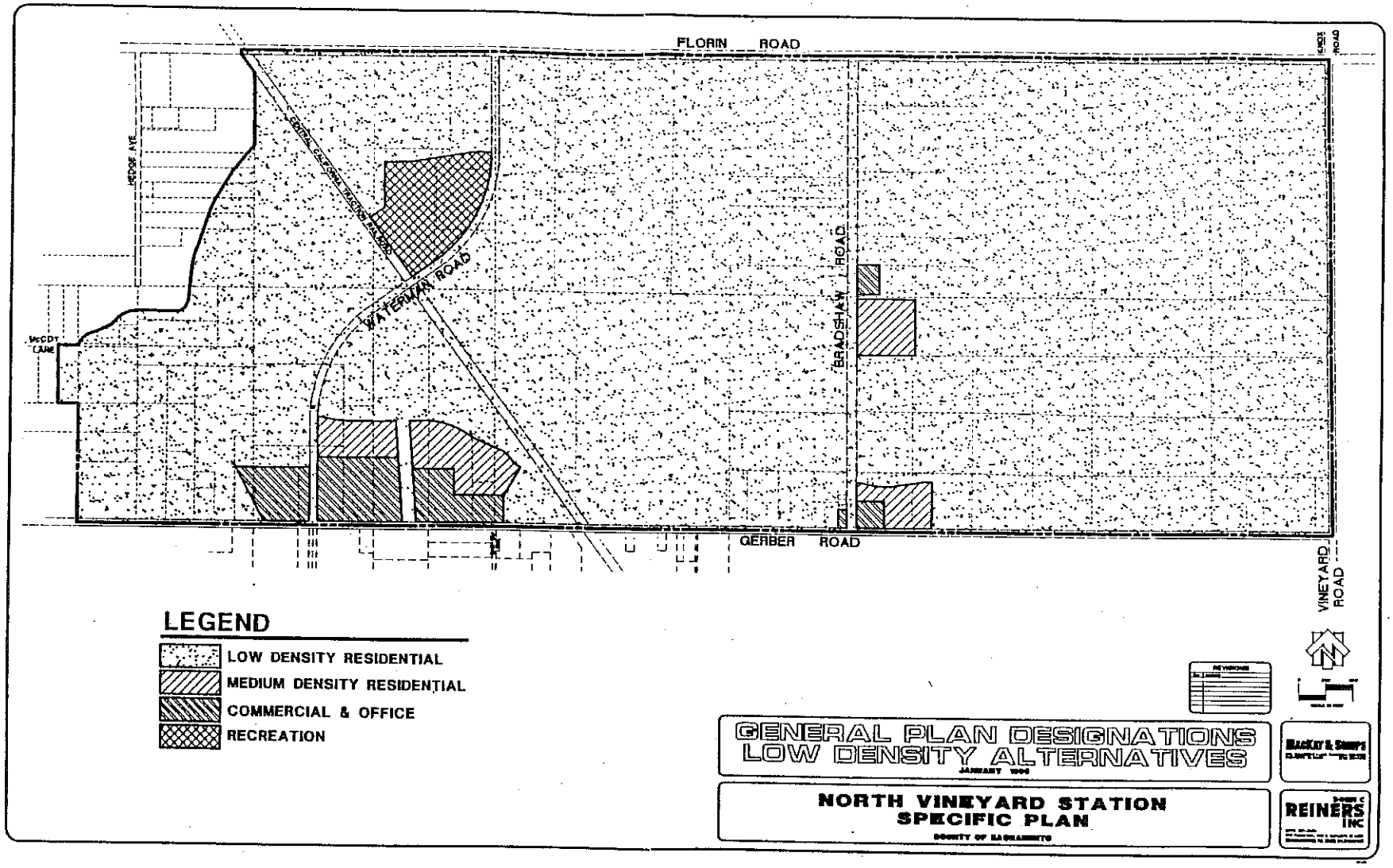


Plate PD-H

-10% Alternative SP General Plan

NVSSP (93-0238)

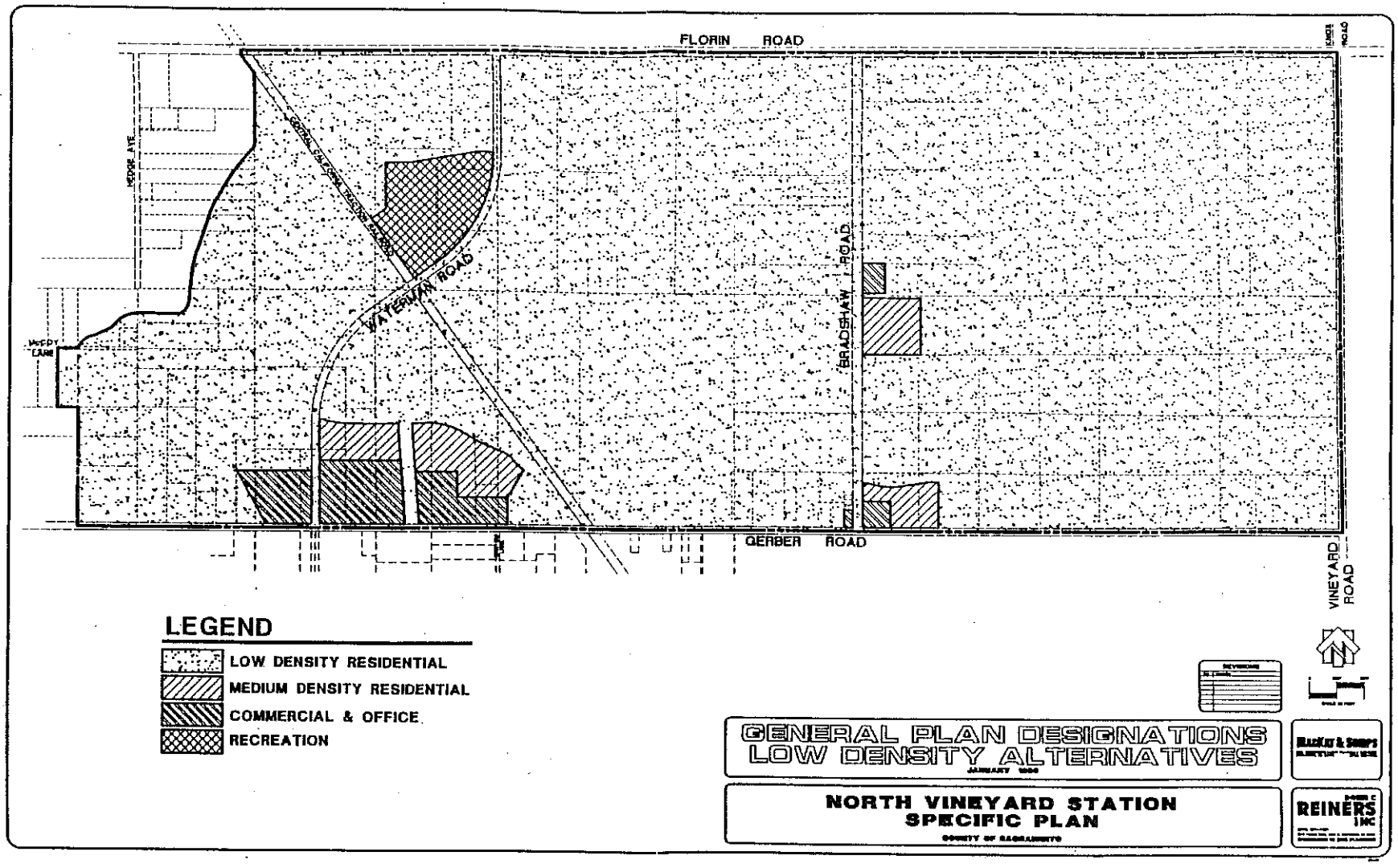


Plate PD-I

-15% Alternative SP General Plan

NVSSP (93-0238)

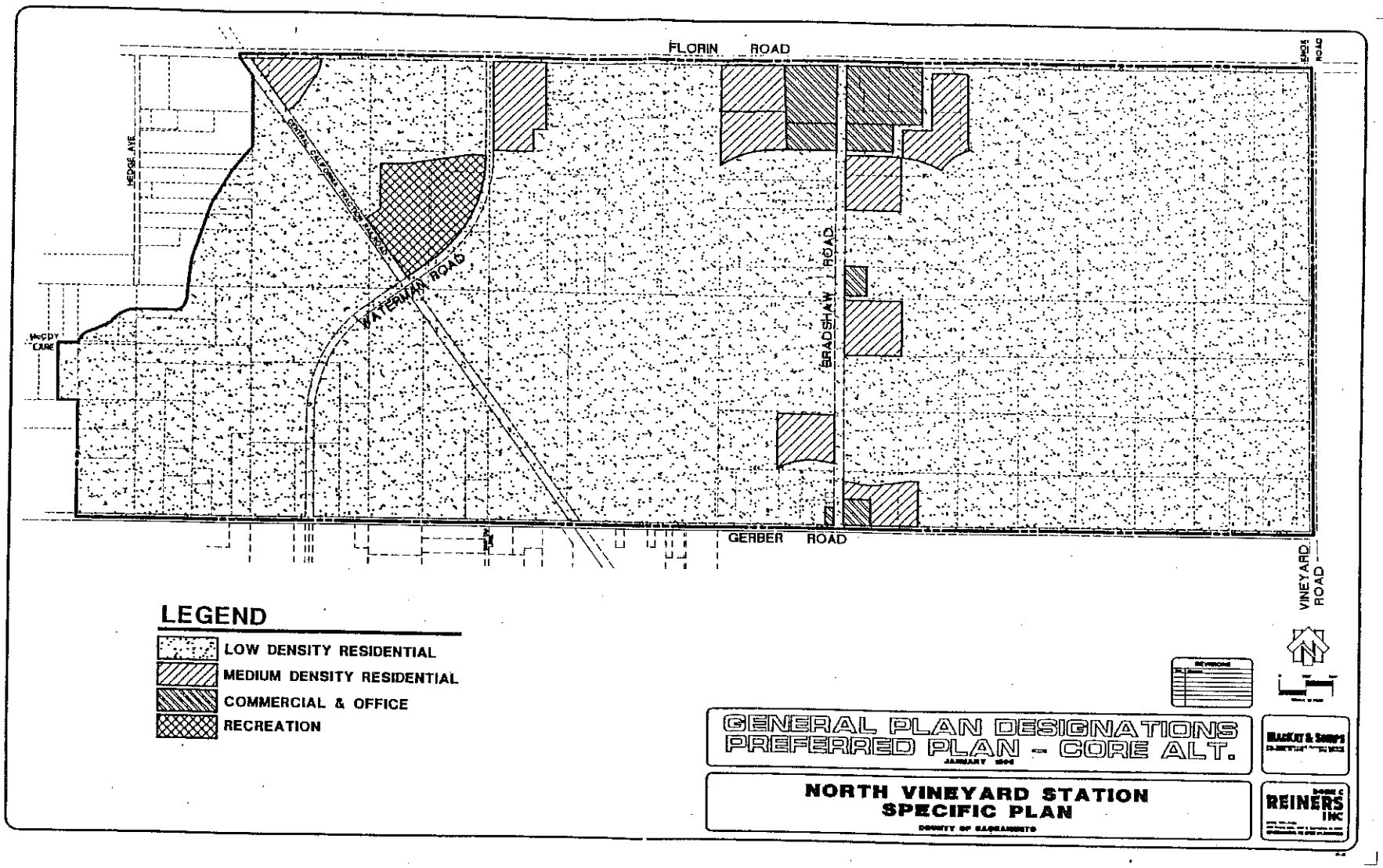


Plate PD-J.1

Modified Core: Preferred SP

NVSSP (93-0238)

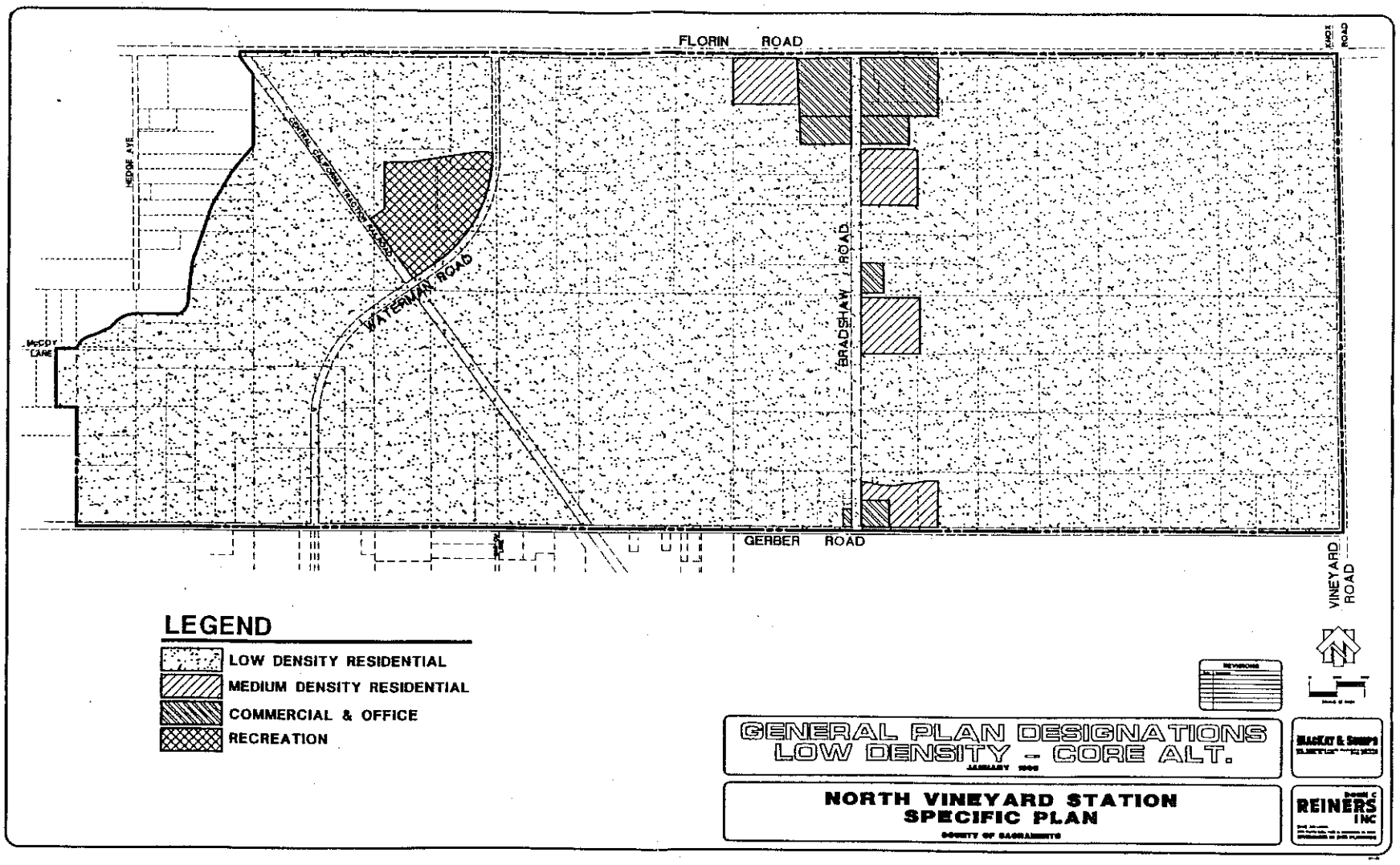


Plate PD-J.2

Modified Core: -10% & -15% Alternative SP

NVSSP (93-0238)

Table PD-2
General Plan Designations
Acreage Calculation

General Plan Designation Land Use ±	County General Plan Existing Acreage ±	NVSSP Preferred Plan Acreage ±	NVSSP -10% Alt. Acreage ±	NVSSP -15% Alt. Acreage
Urban Development	1,594.5	0	0	0
Low Density Residential (1-12 du/ac)	1,442.8	1,488.2	1,488.2 *(+45.4)*	*(+45.4)*
Medium Density Residential (13-30 du/ac)	0	85.1	39.7 *(-45.4)*	39.7 *(-45.4)*
Commercial & Office	0	38.7	38.7	38.7
Recreation	0	27.9	27.9	27.9
Total	**1,594.5**	**1,594.5**	**1,594.5**	**1,594.5**

(+more acreage than preferred plan)
(- less acreage than preferred plan)

General Plan Transportation Plan Diagram Amendment.

The proposed roadway network is depicted on (Plate PD-K) Transportation Diagram for the NVSSP planning area. The existing General Plan Transportation Diagram must be amended to accommodate the needed improvements for the project. Table PD-3 summarizes planned roadway improvements listed in the General Plan. The Transportation Diagram of the General Plan identifies the Central California Traction Railroad right-of-way as transportation corridor.

Table PD-3
Major Roadways
Planned Improvements

Roadway	Segment	Current Lanes	Planned Improvements Pre-2010	Post 2010
Gerber Road	Hedge Avenue to Vineyard Road	2	4	4
Vineyard Road	Gerber Road to Florin Road	N/A	-	4
Florin Road	Vineyard Road to Hedge Avenue	2	6	6
Bradshaw Road	Gerber Road to Florin Road	2	6	6
Central California Traction Railroad	Gerber Road to Florin Road	N/A	-	Trunk Line Network
Gerber Road	Hedge Avenue to Vineyard Road	N/A	Feeder Line Network	-
Florin Road	Vineyard Road to Hedge Avenue	N/A	Feeder Line Network	-

Source: Sacramento County General Plan Transportation Map.

The circulation pattern associated with the Preferred Plan and each alternative is shown on the corresponding land use plan. The circulation pattern in each of the land use alternatives is similar to that of the Preferred Plan. Within the project bounds, Waterman Road will be extended from its current terminus at Gerber Road to Florin Road. The NVSSP project includes one at-grade crossing of the Central California

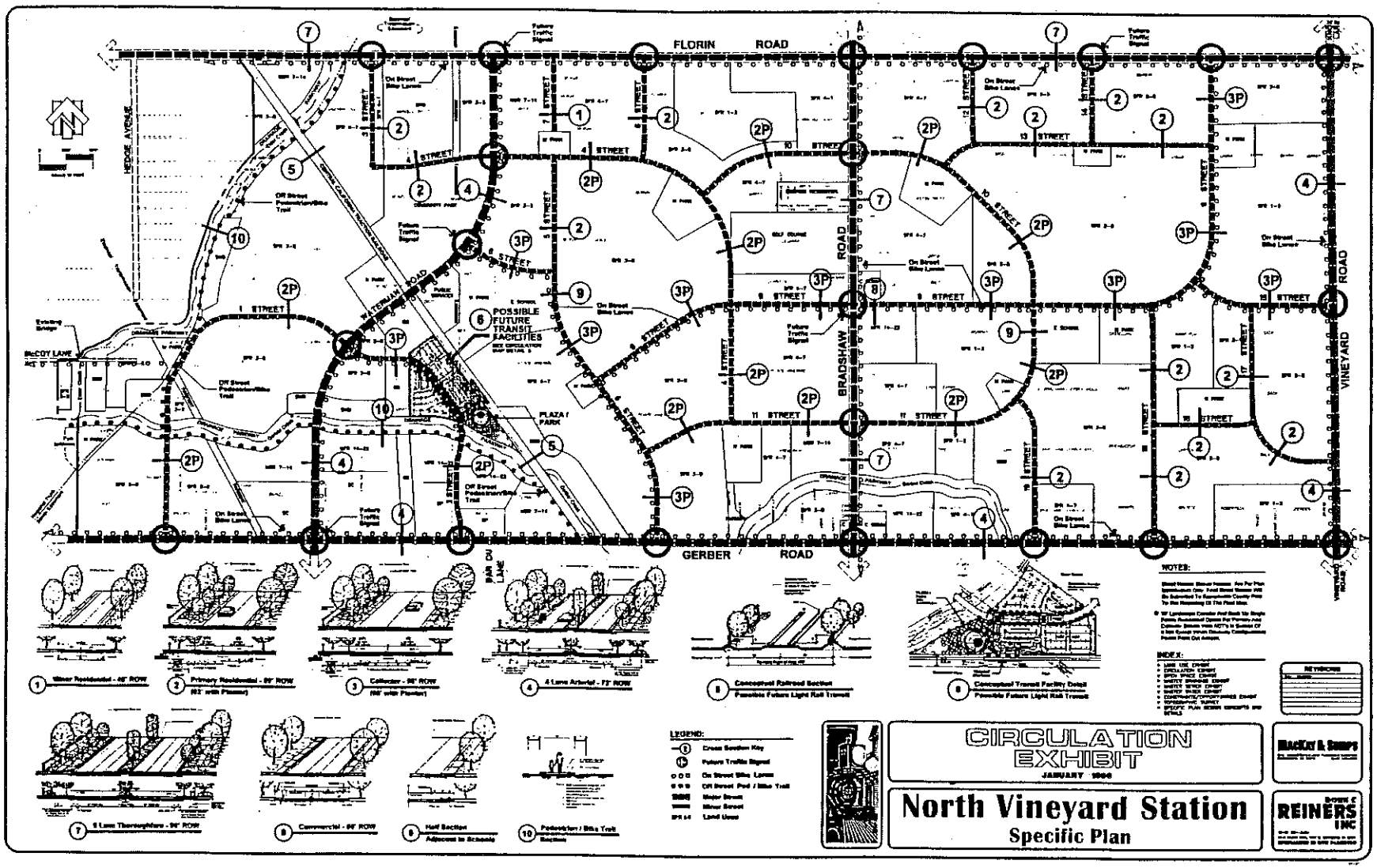


Plate PD-K

Transportation Diagram

NVSSP (93-0238)

Traction Railroad tracks at Waterman Road, approximately one-half mile south of Florin Road. Improvement of the two existing at-grade crossings at Florin Road and Gerber Road is also anticipated.

Vineyard Community Plan Amendment.

Plate PD-L shows the existing Vineyard Community Plan land use designations (and existing zoning) for the Plan Area. The existing Community Plan designations within the project area are AG-20/AG-20(F) and AR-10/AR-10(F). A Community Plan Amendment to a designation of "SP" (Specific Plan) will be required for the project (Plate PD-M). Allowed uses for any given area would be prescribed by both the written and graphic descriptions within the proposed Specific Plan document.

Specific Plan Document.

The Public Review Draft of the NVSSP document has been published under separate cover by the Sacramento County Planning and Community Development Department, and is hereby incorporated by reference. Copies of the Draft Specific Plan document are available from the County Planning Department at 827 Seventh Street, Room 230, Sacramento CA, 95814.

The Specific Plan document includes a written text, exhibits, graphics and appendices, including technical reports utilized in the preparation of this EIR. The proposed Specific Plan document will serve as both a policy and regulatory document if the plan is approved and adopted. The Specific Plan includes guiding principles permitted uses, development standards, and design guidelines for the various land uses identified on the proposed Preferred Specific Plan depicted on Plate PD-B. The Specific Plan document includes the land use plan that establishes the type and densities of land uses in the Plan Area. The Specific Plan document contains the following major elements:

A. Opportunities and Constraints Analysis
B. Description of Land Uses
C. Development Standards and Permitted Uses
D. Design Guidelines
E. Transportation and Circulation Plan.
F. Public Services and Facilities
G. Infrastructure Master Plans (Sewer, Water, Drainage)
H. Specific Plan Policies
I. General Plan Consistency Analysis
J. Technical Appendices

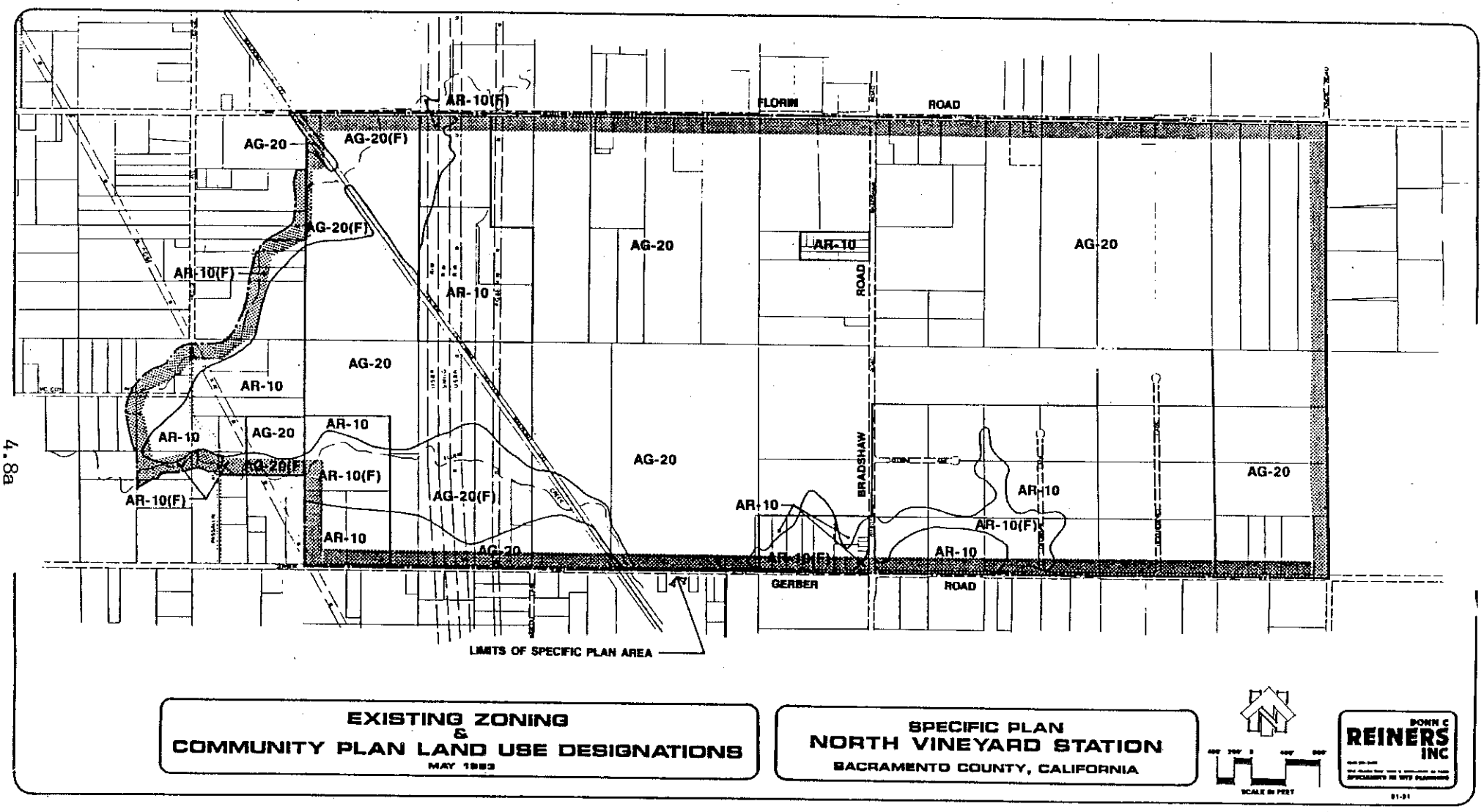


Plate PD-L

Existing Community Plan/Zoning

NVSSP (93-0238)

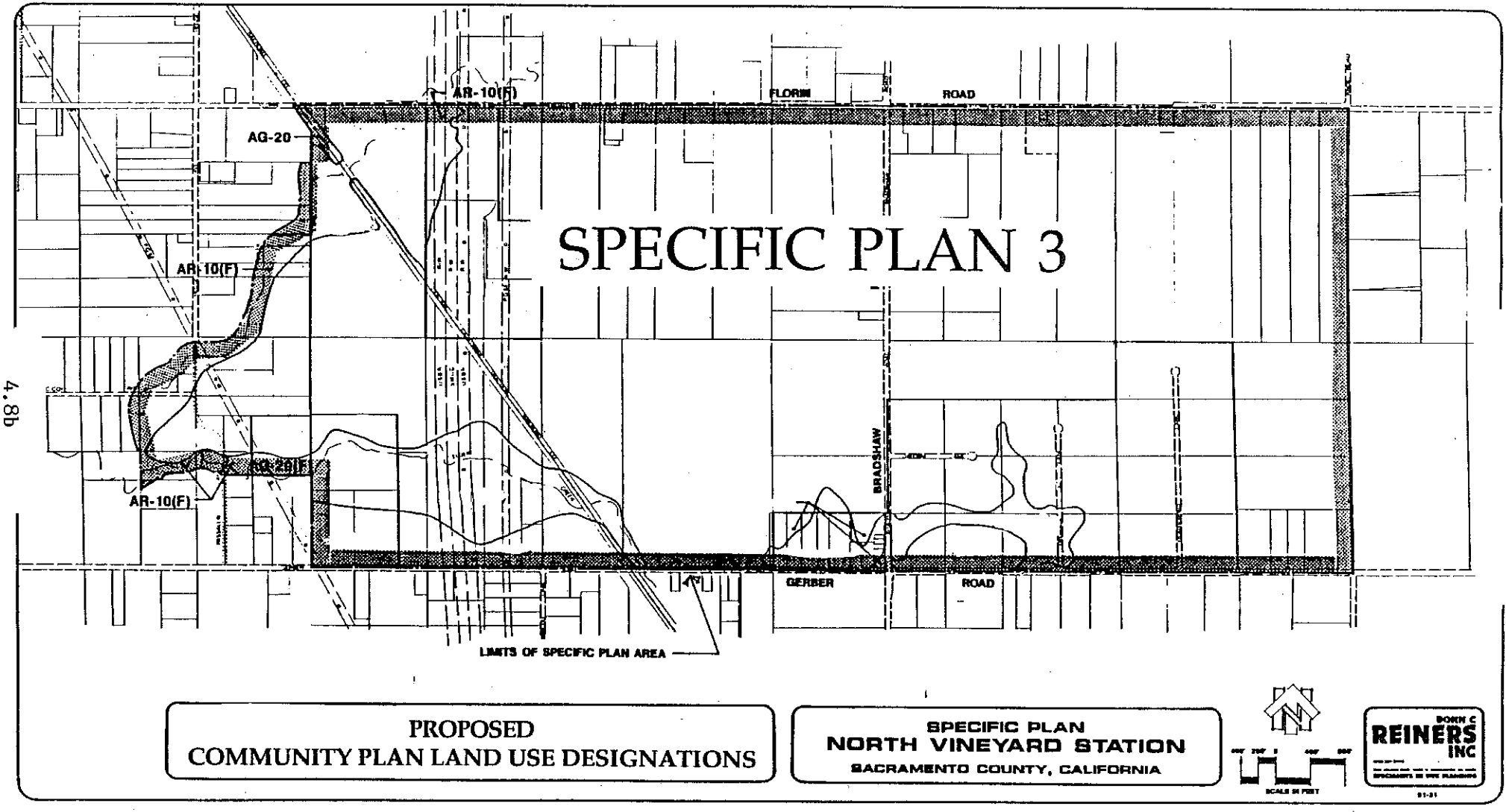


Plate PD-M
Proposed Community Plan
NVSSP (93-0238)

The "Technical Appendices" (element 'J' above) includes the following technical studies that have been completed and are currently included as separate volumes of this EIR. Each of the following technical studies and/or reports were utilized in preparation of the Specific Plan document and this EIR:

1. Arborist Reports, Tree Care, Inc.
2. Cultural Resource Assessment, Peak & Associates.
3. Acoustical Analysis, Brown-Buntin Associates, Inc.
4. Transportation Analysis, Fehr & Peers Associates.
5. Preliminary Geotechnical Engineering Report, Wallace-Kuhl & Associates.
6. Toxics/Site Assessment, Wallace-Kuhl & Associates.
7. Elder/Gerber Drainage Study, MacKay & Somps.
8. Water Master Plan, West Yost & Associates (for County Water Resources).
9. Sanitary Sewer Study, MacKay & Somps.
10. Wetland Delineation and Mitigation Plan, Sugnet & Associates.
11. Determinate Invertebrate Surveys, Sugnet & Associates.
12. Special Status Bird Surveys, Sugnet & Associates.
13. Special Status Reptile Surveys, Sugnet & Associates.
14. Special Status Amphibian Surveys, Sugnet & Associates.

Zoning Ordinance Amendment.

In some cases, the proposed Specific Plan development regulations deviate from the adopted County Zoning Ordinance. To allow for the proposed Specific Plan deviations, a Zoning Ordinance Amendment is also proposed as part of the project actions necessary to codify the North Vineyard Station Specific Plan development standards in to the County Zoning Ordinance.

Capital Improvement Program/Financing Strategy.

A Capital Improvement Program (CIP), and associated Financing Strategy has been prepared which identifies the infrastructure improvements necessary to support the Specific Plan's proposed level of development. The Specific Plan CIP and the associated Financing Strategy defines the methods of financing the needed infrastructure and provides a description of infrastructure phasing of development. Separate actions will be necessary to establish assessment districts, fee programs and/or other funding programs consistent with the proposed Specific Plan CIP. The final CIP and related Financing Strategy may be subject to subsequent environmental review.

Public Infrastructure and Services.

Drainage Improvements.

In conjunction with the Specific Plan, a Drainage Master Plan is being developed for the Plan Area. The NVS Drainage Master Plan identifies existing drainage facilities and flooding patterns and analyzes alternatives to recommend preferred flood control and conveyance facilities to serve the drainage needs of the Plan Area. The Drainage Master Plan (DMP) includes recommendations for Stormwater Quality Management Facilities and a framework for mitigation of wetlands impacted by recommended drainage improvements. Finally, the proposed NVS Drainage Master Plan identifies estimated costs of recommended drainage improvements.

The DMP proposes off-site improvements necessary to accommodate runoff associated with Specific Plan development, including:

1. Modification of downstream section of Elder Creek for a distance of approximately 5,000 feet.

2. An alternative off site detention facility located west of Elk Grove Florin Road.

3. Modification to an up stream section of Elder Creek for a distance of approximately 1,400 feet.

4. Modification of an off-site portion of Gerber Creek.

Water Supply Improvements.

The Plan Area lies within the sphere of influence boundaries of Zone 40 of the Sacramento County Water Agency. Water supply to the Specific Plan Area has been master planned according to Zone 40 Master Plans. In accordance with the Water Supply Planning Act (SB 901) the Sacramento County Water Resources Division studied alternatives for supplying the Specific Plan and surrounding areas with water. The NVS Specific Plan Water Supply Plan includes project-specific locations and sizing of water transmission facilities. Extension of off-site regional water transmission and storage facilities may require additional, separate environmental documentation.

Sanitary Sewer Improvements.

In conjunction with the Specific Plan, a Sanitary Sewer Master Plan has been developed for the Plan Area. The NVS Specific Plan Sewer Master Plan identifies provisions for accommodating project flows and flows upstream of the Plan Area. The proposed

Specific Plan includes location and sizing of sanitary sewer facilities within the Plan Area.

Project Location

The NVSSP planning area ("Plan Area") is located in the south-central unincorporated area of Sacramento County, at the western edge of the Vineyard community. The City of Sacramento's Central Business District is located approximately eleven miles to the northwest. The Plan Area lies entirely within Sections 4 and 5 of Township 7 North, Range 6 East and within the USGS Elk Grove quadrangle map.

The Plan Area encompasses 1,590± acres of the Vineyard Community Planning Area. The Plan Area is bounded by Florin Road to the north, Gerber Road to the south, the northerly extension of Vineyard Road on the east, and generally by Elder Creek's north and south forks (see Plate PD-A). Bradshaw Road transects the Plan Area in a north/south alignment. The right-of-way of the Central California Traction Railroad transects the western portion of the planning area.

Environmental Setting

Existing Plan Area Land Use.

The NVSSP project area is predominantly utilized for agricultural-residential uses, however, urban development has occurred within the surrounding Vineyard area, primarily the area east of Elk Grove-Florin Road and in the Vintage Park/Churchill Downs area. The project site is characterized by grassy fields and pastures. Many rural single-family residential dwellings are located within the planning area, along with barns and other out buildings. The small amount of agricultural activity that occurs in the area is generally limited to dry farming. The majority of the site has been subdivided over a period of several years into 147 parcels, most of which are from one-half to 30 acres in size.

The Draft Specific Plan document provides the following description of the existing land uses and facilities in the Plan Area:

Residential Uses.

Numerous residences and agricultural out buildings are located within the Plan area, principally along Florin, Gerber, and Bradshaw roads. Most of the homes are thirty years or older in age. The principal exception is the small cluster of

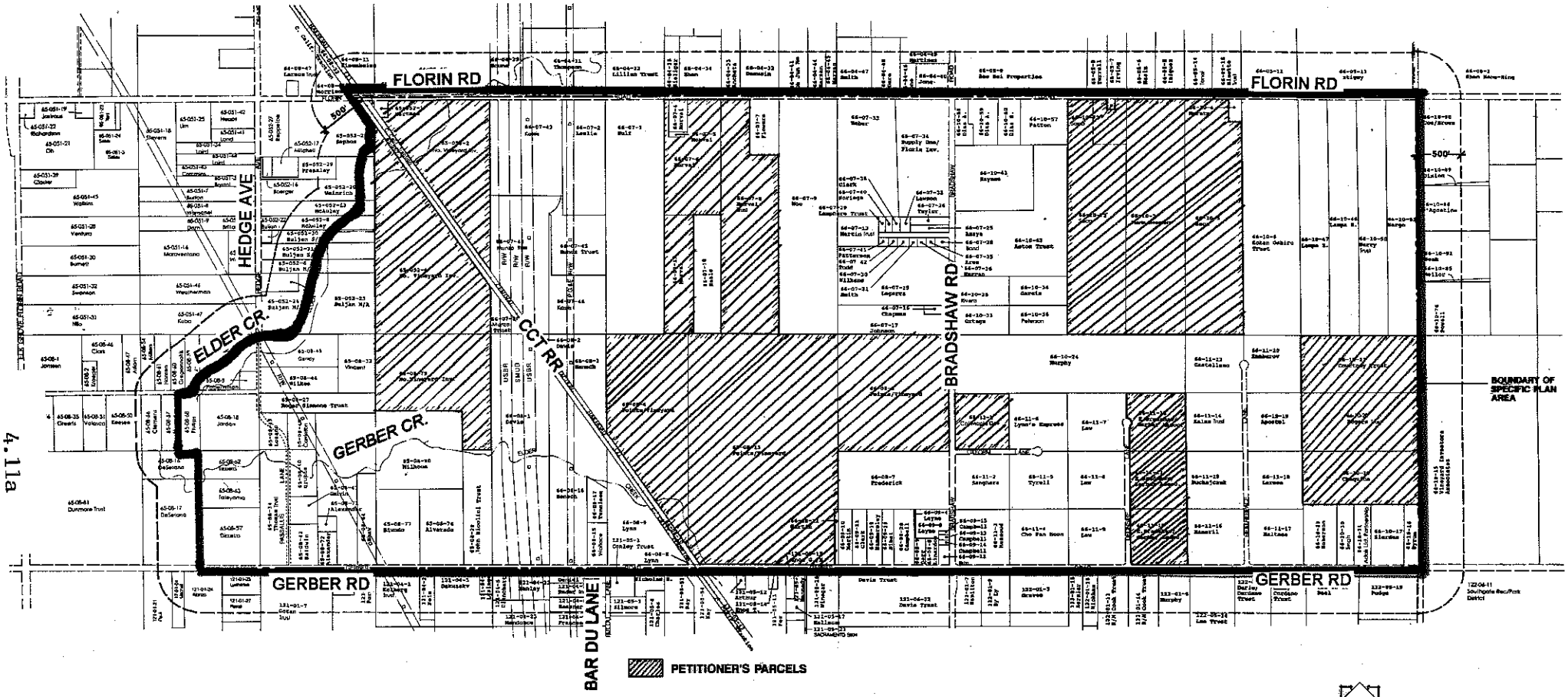


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Plate PD-N

Property Ownership Map

NVSSP (93-0238)

newer custom homes located on Heather Place Lane. Many of the older homes include small-scale dry farming or home occupations. The small neighborhood of homes on Gavern Lane are on roughly 6,000-square foot lots.

Commercial Uses.

The Bradshaw Golf Center occupies a 20-acre parcel on the west side of Bradshaw Road, one-third mile south of Florin Road. A convenience store/gas station/bar is located on the northwest corner of Bradshaw and Gerber roads. A feed store and an equestrian center are located on Bradshaw Road, and a small nursery is in operation on Gerber Road, near Passallis Lane.

Electrical and Natural Gas Utilities.

Tower-mounted high voltage power lines within five separate easements traverse the western side of the Plan area, approximately one mile west of Bradshaw Road. Three of the easements are contiguous and are oriented in a north-south direction. These three easements, owned by U.S. Bureau of Reclamation (USBR) and Sacramento Municipal Utility District (SMUD), total 400 feet in width and contain 230-kilovolt (kv) transmission systems. Two of these systems use truss towers operated by the Western Area Power Authority (WAPA) for the USBR. The WAPA easements are 125 feet wide. The WAPA tower systems straddle a SMUD-owned steel pole system which exists within a 150-foot easement. SMUD's facilities within this easement also include a 69 kv line on wood poles.

Pacific Gas and Electric Company (PG&E) operates a 230-kv truss tower system in a 75-foot easement located approximately 400 feet east of, and roughly parallel with, the WAPA/SMUD corridor. Also, PG&E has another 230-kv truss tower transmission line in a 75-foot wide easement running diagonally through the western-most portion of the Plan area.

The easements granted for these transmission line corridors include restrictions in land use character (e.g., new buildings are not allowed, and the height of landscaping is restricted). However, the easements may be used for a variety of land uses, including parking lots, low-height vegetation, and certain recreational uses.

Petroleum Pipeline.

A high pressure, 10-inch petroleum transmission pipeline, which belongs to Santa Fe Pacific Pipeline Partners L.P., is located within the Bradshaw Road right-of-way.

Railroad.

The Central California Traction Railroad occupies a 100-foot wide right-of-way that traverses the Plan area diagonally in a northwest-southeast direction. Currently, the tracks within the right-of-way are used by trains twice daily. There are two at-grade crossings - one at Florin Road and one at Gerber Road.

These existing land uses and facilities are depicted for the west, central, and east portion of the Plan Area on Plates PD-O.1, PD-O.2, and PD-O.3 respectively.

Adjacent Land Use.

Existing land uses surrounding the Plan Area are predominantly agricultural-residential (5-acre or larger lots). However, there are pockets of lower density development (2- to 3-acre lots) in the vicinity. Most of the existing development in the vicinity is located west and southwest of the Plan Area.

There are three existing residential areas on the perimeter of the Plan Area. Immediately west of the Plan area boundary are McCoy Avenue and Hedge Avenue. Development along McCoy Avenue consists of older homes on 2- to 10-acre parcels. Dwellings on these properties are often accompanied by minor agricultural uses. Development along Hedge Avenue is similar to that on McCoy Avenue. The Bar Du Lane neighborhood is located south of Gerber Road and west of the railroad. Bar Du Lane includes well-maintained single family dwellings on 2- to 3-acre parcels.

The largest suburban development in the area is Churchill Downs, which is located west of Bradshaw Road and approximately one-half mile south of Gerber Road. The residential density in this newer development is generally 5 to 6 dwelling units per acre, comparable to much of the proposed development in the North Vineyard Station Specific Plan.

Land to the east is primarily undeveloped and is designated Agricultural-Residential (1-10 ac/du). The undeveloped land to the north of the eastern half of the Plan area is designated General Agriculture (20 acre). Land north of the western half is designated Natural Reserve (and contains the Elder Creek recreation area) and Agricultural-Urban Reserve combined with Aggregate Resource Area. Land north of the Plan area has been used primarily for grazing.

Existing Site Conditions.

Topography.

Except for slight undulations in some locations in the eastern portion, east of Bradshaw Road, the Plan area appears visually flat. The highest elevation on the site is 81 feet above sea level and occurs near the eastern boundary, while the lowest elevation is 42 feet and occurs near the western boundary. There is evidence that the local topography has been changed over the years as a result of agricultural practices and parcelization. This is particularly noticeable in areas where wetlands abruptly end at property lines.

Drainage is directed toward the two creeks on the site - Gerber Creek and Elder Creek - both of which are located in the western portion of the Plan area. The confluence of the two creeks is located near the westernmost point of the Plan area.

Soils, Geologic and Seismic Conditions.

A large portion of the Plan Area is underlain by the lower member of the Quaternary-aged Riverbank formation and the remainder is underlain by the Tertiary-aged Laguna formation. The Riverbank formation represents dissected alluvial fans and is generally composed of alluvial gravel, sand and silt derived from the western slopes of the Sierra Nevada Range. The Laguna formation represents eroded alluvial fans composed of alluvial gravel, sand and silt also derived from the western slopes of the Sierra Nevada Range.

No active or potentially active faults are known to pass through or near the Plan Area, as indicated by published geologic maps.

According to the Soil Survey of Sacramento County, California (SSSCC), approximately 75 percent of the site is covered by soils classified as San Joaquin silt loam with slopes between 0 and 8 percent. Approximately 10 percent of the site is mapped as Red Bluff loam, possessing slopes between 0 and 2 percent. These soils are located in irregularly-shaped areas in the northern and eastern sections of the site. Two areas, covering approximately 10 percent of the site, are classified as Redding loam and Redding gravely loam, typified by slopes ranging from 0 to 8 percent. These soils are located in the south central portion of the site.

The remainder of the site is covered by four additional soil types. The first soil type is the San Joaquin-Durixeralfs complex, composed of 55 percent San Joaquin soil and 35 percent Durixeralfs soil. This soil type is located in two small areas near the center of the site. The second soil type is the San Joaquin-Galt complex composed of 45 percent San Joaquin soil and 40 percent Galt soil. This soil is located in one irregularly shaped area in the eastern portion of the site. The third soil type, located in the central portion of the site, is the San Joaquin-Xerarents complex with 45 percent San Joaquin soil and

40 percent Xerarents soil. The fourth soil type listed by the SSSCC is Hedge loam between 0 and 2 percent slopes. This soil has been mapped as a small area in the south-central portion of the site.

The SSSCC rates some of the soils with high clay content to possess moderate to high shrink-swell characteristics. The shallow depth to cemented soil strata result in poor permeability properties. These conditions result in the soils having possible limitations with respect to site development. Undisturbed natural soils at shallow depths are capable of supporting anticipated residential and commercial structural loads.

According to the Map of Ground Water Elevations, Spring 1995, for Sacramento County (Water Resources Division), ground water elevations beneath the Plan area are between 75 and 130 feet below ground surface. However, temporary "perched" high ground water conditions may exist shortly after intense rains and during or following the winter months due to the presence of relatively shallow and fairly impermeable cemented soils that underlie the site.

Surface Hydrology.

Elder Creek and Gerber Creek flow through the Plan Area. Elder Creek forms the northwestern boundary of the Plan Area and has a watershed of approximately 5,000 acres at its confluence with Gerber Creek at the western boundary of the Plan area. Approximately 500 acres of that shed are within the boundary of the Plan area. Gerber Creek has a drainage area of approximately 3,100 acres, approximately 960 acres of which are within the Plan Area. The creek crosses Gerber Road several times, flowing in and out of the Plan Area before draining into Elder Creek at the western boundary of the Plan area.

Some reaches (or segments) of each of these creeks have been modified or relocated along property lines, possibly in connection with agricultural practices. The two creeks are generally shallow and broad. Significant rainfall results in widespread, but generally shallow, flooding. Floodplain depths range from one-half foot to one and one-half feet. This local flooding is attributed to a number of factors, including 1) inadequate channel capacity, 2) inadequate capacity of roadway culverts, and 3) the presence of numerous private roadway/driveway crossings of the channels with inadequate culvert capacities. An additional flooding factor is the Laguna Creek shed jump, which occurs during high flow events in that creek. In such events, approximately 580 cubic feet per second jumps from Laguna Creek at the Central Traction Railroad and travels north along the railroad to Gerber Creek.

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map for the County of Sacramento, several large areas surrounding the two creeks on the site are listed as "Special Flood Hazard Areas inundated by 100-Year Flood." These areas include the major portion of the site west of the railroad tracks crossing the

site and an area approximately 500 feet to the east of the railroad tracks. A flood area approximately 500 feet wide follows Elder Creek across the site and exits across the western boundary of the site.

Wetlands and Other Waters.

There are five categories of wetlands and waters of the United States within the Plan Area, including vernal pool, seasonal wetland, freshwater marsh, drainage swale, and perennial creek, totaling approximately 51 acres. Stock ponds also occur in several locations within the Plan area. Following are descriptions of the wetland resources found in the Plan Area.

Vernal pools are depressions within the grassland landscape which pond during the wet winter months and dry out during spring. They are generally small, but can exist in a wide range of depths (several inches to several feet) and sizes (several square feet to several thousand square feet). Vernal pools can occur as isolated basins or as depressions within swales. Maturation of various plant species is from late winter to late spring. These wetlands occur throughout the grassland areas, but are most abundant in the eastern half of the Plan Area.

Approximately 18 acres of vernal pools have been identified within the Plan area. Vernal pools support a specialized plant community. Vegetation is dominated by native non-grass species.

Seasonal wetlands are typically shallow and do not pond as deep as vernal pools, although their effective saturation period is about the same. Approximately 18 acres of seasonal wetlands have been identified within the Plan area. Seasonal wetlands are generally more variable than vernal pools with regard to hydrology in that they can occur in basins or on slopes. Vegetation is typically non-native grasses and forbs.

Freshwater marsh is typically deeper than seasonal wetlands and vernal pools. Freshwater marsh occurs on approximately seven acres and is characterized as having a longer wet period (usually well into the summer).

Two *intermittent creeks* occur within the Plan Area and cover approximately six acres. Elder Creek crosses the northwestern corner, and Gerber Creek is located along the southern boundary, near Gerber Road. Elder Creek is the larger of the two, both in size and flow. Both creeks are relatively low volume and would be seasonal in flow duration if not for irrigation and urban water runoff. Supplemental water has extended the flows of these creeks (particularly Elder Creek, which is intermittently wet throughout the year) into the dry season. Within each channel, isolated pools persist throughout the year.

Several *man-made ponds* (stock ponds) occur in the plan area. These features occur in

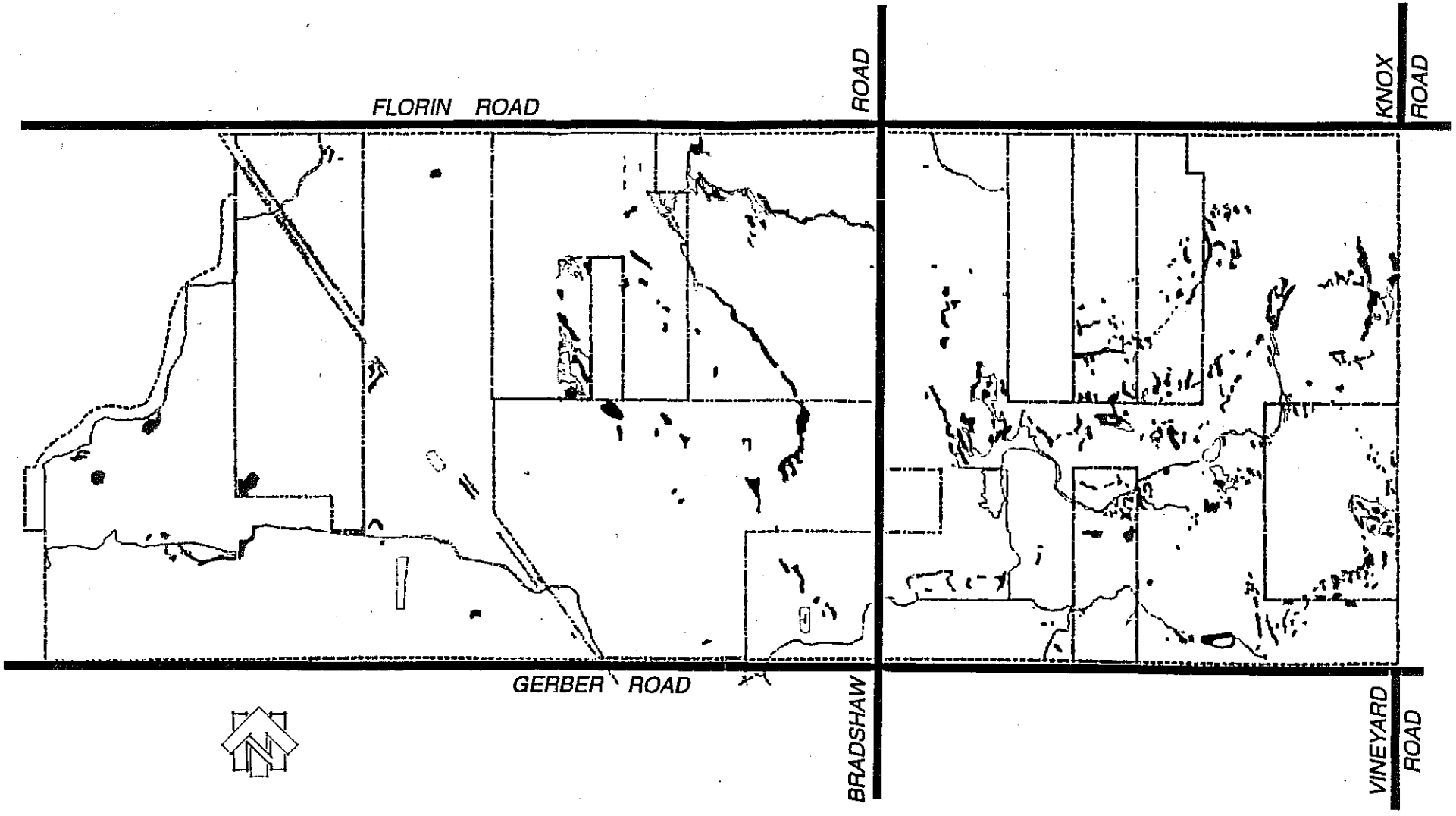


Plate PD-P
Plan Area Wetland Resources
NVSSP (93-0238)

several forms including impoundments of drainage swales, excavations within drainages, or excavation on uplands. Water level in the stock ponds fluctuates widely through the year, typically filling in winter and drying out or declining to lowest levels in fall. Vegetation within these ponds also varies widely depending on water regime and level of disturbance.

Drainage swales are sloped seasonal wetlands, that is, water conveyance systems for local watersheds. They are saturated for slightly lesser periods of time than seasonal wetlands but tend to support a similar flora. Drainage swales, which constitute approximately two acres of the total wetland area, are similar to seasonal wetlands except they convey water on a shallow gradient. The Plan Area supports few of these features because of its overall flat topography.

Wetland resource distribution for the Plan Area is depicted on Plates PD-P.

Vegetation.

The Plan Area vegetation is characterized primarily by annual grasses and forbs. Very few native woody plant species occur, except for where water is at or near the surface. Following are descriptions of the principal terrestrial habitats within the Plan area:

The dominant habitat type in the Plan Area is non-native annual grassland. These areas are typically not irrigated and occur in several forms including historically disturbed fallow ground, dry pasture (primarily used for cattle and horses), and "buffer" areas along roads and near houses. Flood irrigation of pastures occurs during the dry months in many parts of the Plan area. Plant species (forage) consists of a mixture of typical dryland species, as well as many species that occupy the margins of wetlands.

Numerous trees are scattered throughout the Plan area, typically associated with homesites or situated along fence lines. A tree survey of the participating properties was conducted by Tree Care Inc. While the survey did not address all parcels within the Plan area (participating parcels account for 36.4 percent of the total area), it accurately characterizes the general nature of the tree cover of the entire Plan area. The survey included native oaks 4-inch diameter at breast height (DBH) and non oak trees of 18-inch DBH. The survey revealed a total of 48 trees with a combined diameter of 1,470 inches. Predominant species were eucalyptus (814 inches total combined diameter), black walnut (121 inches), and fruitless mulberry (168 total inches). Other species include Italian stone pine, catalpa, Modesto ash, box elder, Japanese black pine, silver maple, London plane, weeping willow, and Monterey pine. All trees surveyed were in fair to poor condition. Most of the vegetation around the residences consists of ornamental species. These areas support most of the trees and shrubs.

Wildlife.

Throughout the Plan area, wildlife use is associated with that of urban (developed areas) or cropland (pastures and fallow fields) habitats. Wildlife associated with urban habitat includes birds such as American crow, European starling, house finch, and house sparrow. Mammals typical of this habitat include raccoon, striped skunk, and Virginia opossum. Wildlife associated with cropland habitat include birds such as ring-necked pheasant, mourning dove, brewer's blackbird, and western meadowlark. Mammals typically associated with cropland habitats include black-tailed jackrabbit and California ground squirrel. Raptors such as red-tailed hawk and turkey vulture have been observed foraging over open cropland areas.

There are six special-status plant species that they potentially be found the Plan Area, all associated with wetland habitat. Five of these species are primarily found in vernal pools: Grenies legenere, Boggs Lake hedge hyssop, ahart's dwarf rush, Sacramento Orcutt grass and slender Orcutt grass. The sixth, Sanford's arrowhead, is associated with still or slow moving water that occurs in ponds and ditches from late spring through summer. Based on determinant surveys conducted on lands of Plan participants, no special-status species were observed.

Surveys conducted within the Plan Area participating properties revealed that there are three special-status invertebrate species that may occur within the Plan area. Among the participating properties, vernal pool fairy shrimp and vernal pool tadpole shrimp were observed. No elderberry shrubs, primary host plant of the Valley Elderberry Longhorn Beetle (federally "threatened"), have been observed within the Plan Area.

There are two special-status reptiles that may occur within the Plan area. Within the Plan area, habitat for northwestern pond turtle is restricted to Elder Creek and Gerber Creek, which flow through the western and southern portions, respectively. Habitat for giant garter snake does not exist in Elder Creek within the Plan area, but may exist along Gerber Creek. Surveys conducted for the northwestern pond turtle and giant garter snake revealed one northwestern pond turtle along the Elder Creek corridor.

Special-status birds that may occur within the Plan area can be grouped into three categories: potential nesting species, non-nesting species (no suitable nesting substrate is present), and potential winter residents (do not nest in this region but winter-over). On the basis of special-status bird surveys, there are four special-status species which may potentially nest or forage within the participating properties: northern barrier, Burrowing owl, loggerhead Strike, tricolored blackbird. Suitable nesting sites are present within the non-participant properties of the Plan area; however, no determinate surveys were conducted within those parcels. Burrowing owls and foraging tricolored blackbirds have been actually observed in the Plan area.

The presence of special-status mammals species within the Plan Area is highly unlikely

due to current and historic land-use practices (i.e., agricultural, rural residential, etc.),

Cultural Resources.

The Eastern Miwok and the Plains Miwok occupied the lower reaches of the Mokelumne, Cosumnes and Sacramento rivers, including the area of south Sacramento County surrounding the Plan area, for a considerable period of time. A study of known village sites in the region indicates that small villages away from the major rivers appear to concentrate on the collection of fish species that inhabited slow-moving waters. There are no known villages in the immediate vicinity of the Plan area, and no prehistoric artifacts or evidence of prehistoric use of the Plan area was found. It is possible that Native American people may have utilized the Plan Area for seasonal resource collection, but did not inhabit it on a permanent basis.

There is no indication that any important events or activities occurred in the Plan area in the early history of the region. The primary historical use of the area has been for agriculture, beginning after the gold rush in the early 1850s. The first lands to be farmed were the rich bottom lands along the major watercourses. By the mid-1860s, the prime farm land had been claimed, leaving lands with poorer soils and less available water, such as the Plan area. With irrigation, the soils in the area were found to be suitable primarily for the raising fruits such as strawberries, grapes, peaches, and apples. The service center for the farmers of the area was the town of Florin, which formed in 1875 about three miles from the northwest quarter of the Plan area along the Central Pacific railroad. Florin served as the shipping point for the farm products of the region.

The Central California Traction Railroad (CCT) was organized in 1905. The 53-mile CCT main line connected Sacramento with Stockton, with a branch from the main line to Lodi. The section from Sheldon to Sacramento through the Plan area was completed in 1910. Passenger service was eliminated in 1933, and in 1946 the use of electricity was discontinued in favor of diesel service. One historic period archeological site was discovered near the railroad tracks in the northwest portion of the Plan area. It consists of a small scatter of 1930s/40s era refuse that was primarily domestic in nature. No existing structures, or structures shown on historic period maps or other documentary sources, were located anywhere near this refuse deposit.

None of the surviving structures within the Plan Area represent the early years of pioneer settlement in this area. The earliest structures date to about the turn of the century. There are several structures dating within the 1900-1920 era, representing small rural residence types and agricultural utility buildings common for this period. Examples range from well preserved to poorly maintained to remodeled beyond recognition. None of the extant buildings are associated with important individuals or events.

Noise Environment.

The Sacramento County Noise Element establishes a land use compatibility criterion of 60 dB L_{dn} for exterior noise levels in outdoor residential activity areas affected by transportation-related noise sources. An exterior noise level of up to 65 dB L_{dn} is allowed only after a practical application of the best available noise-reduction technology is included in the design. In addition, an interior noise level criterion of 45 dB L_{dn} is applied to residential land uses with windows and doors closed.

The existing ambient, or background, noise environment in the Plan Area is defined primarily by traffic on local roadways, railroad operations, and occasional aircraft overflights. The contributions from each of these noise sources to the overall ambient noise environment is described below.

During two 24-hour monitoring periods, three train operations occurred during each 24-hour period, resulting in L_{dn} noise measurements of 61.2 dB and 61.1 dB. If the noise levels due to the train events for these two days are subtracted from the hourly average noise levels during which the train operations occurred, the resulting ambient noise (L_{dn}) values for the two days are 53.3 dB and 54.3 dB.

Noise level measurements were conducted along the Central California Traction Railroad at a distance of approximately 50 feet from the railroad tracks. The noise level measurements indicated that between two and three operations occur per day along the tracks. Currently up to four train operations may occur during a 24-hour period, resulting in 60 dB and 65 dB L_{dn} railroad noise contours at distances of 78 feet and 36 feet respectively from the tracks. According to railroad staff, historically up to eight train operations occurred during a 24-hour period, and in the past five years traffic has doubled along the railroad line. There were no estimates of future operations.

During the field review in the summer of 1995, no aircraft operations were noted as flying directly over the Plan area. The new guiding document for determining potential future noise impacts associated with the Mather Airport is entitled *Mather Airport Comprehensive Land Use Plan Update, May 1996, Draft.* Based upon this document, the Plan area is located outside the 60 dB CNEL contour and thus, is not substantially affected by aircraft overflight noise.

Hazardous Materials.

No obvious evidence of significant hazardous materials contamination was observed during preliminary field reconnaissances of the Plan area. Some observed evidence and/or features indicate that some sites have the potential for hazardous materials contamination; however, no obvious evidence of contamination was observed.

No potential or confirmed state or federal "Superfund" sites are known to exist within

the Plan area. However, the B & E Market, located at the northwest corner of Bradshaw and Gerber roads, is listed as a site where an unauthorized hazardous materials release is known to have occurred.

The Plan area has consisted of fallow land or has supported dry farming, natural grass grazing, and irrigated pasture land uses since the 1940s. These agricultural uses typically require little to no applications of environmentally persistent pesticides. Prior to the 1940s, the area was used for row crops and vineyards. While higher value row crops and vineyards have a somewhat increased potential for the past application of persistent pesticides, the vast length of time (more than 50 years) between the former vineyard and row crop cultivation negates potential concern for any significant levels of persistent pesticide residuals in existing surficial soils of the Plan Area. Therefore, the potential for residual agricultural chemical concentrations in existing surficial soils of the Plan Area is low.

Current strawberry cultivation within the Plan area is not anticipated to involve the use of environmentally persistent pesticides. Nearly all of the persistent agricultural chemicals of the organochlorine pesticide variety have been banned since the time of their prevalence in the 1950s, 1960s, and early 1970s.

Numerous pole-mounted electrical transformers exist within the Plan area. No obvious evidence of transformer leakage was observed on accessible sites. Sites within the Plan area that developed in the early 1980s and later are unlikely to contain PCB-containing transformers. However, many transformers within the Plan area most likely predate 1979 and are not tagged with respect to PCB content. These transformers are therefore of unknown PCB content.

Because the federal government banned nearly all uses of friable asbestos in building materials by 1978/79, existing structures within the Plan area built subsequent to 1979 are not likely to contain asbestos in their building materials. However, most of the existing structures within the Plan area predate 1979 and potentially contain asbestos in their building materials.

Numerous water supply wells are located within the Plan area, some of which are currently in an improperly abandoned condition. However, since there are no large quantity agricultural wastewater producers, industrial facilities, or commercial facilities that discharge wastewater to land within the Plan area and the existing dairy within the Plan area is a relatively small-scale operation, groundwater contamination potential is considered low.

Several stored and abandoned vehicles and other materials and debris are located behind the structures of the Rose Nursery. In 1993, underground gasoline tanks were removed from the B & E Market site, located on the northwest corner of Bradshaw and Gerber roads. Although petroleum residues were detected in subsurface soils, the potential for

groundwater contamination is low. This facility is also discussed in the Superfund Sites section, since it is an agency-listed facility.

As previously noted, a buried liquid petroleum pipeline, owned, operated and maintained by Santa Fe Pacific Pipeline Partners, L.P., lies beneath the western edge of the Bradshaw Road right-of-way. No leaks, ruptures or problems are known to have occurred along the pipeline course adjacent to or in the vicinity of the Plan area. The section of pipeline within the Plan area does not appear on the regulatory agency databases as an identified contamination or spill site.

Project Objectives

The overall goal of the North Vineyard Station Specific Plan is to provide for the orderly and systematic development of the planning area through the establishment of a comprehensive planning program that is consistent with the Sacramento County General Plan and to respond to opportunities and constraints in the local community area. The North Vineyard Station Land Use Plan has been developed in accordance to this objective and compliance with adopted goals, policies and diagrams of the Sacramento County General Plan, as adopted December 15, 1993. Staff from the Planning Department assisted the North Vineyard Station Citizens Advisory Committee (CAC) in the formation of a development strategy to characterize the type and form of development within the study area. This development strategy was articulated in the form of guiding principles. These principles were developed to ensure that a high quality land use plan would be developed to provide for the orderly and systematic development of the planning area that meets the objectives of the General Plan. These guiding principles are as follows:

1. Plan, develop and maintain a comprehensive, balanced, integrated, safe and efficient transportation system to ensure mobility for all residents.

2. Promote efficient traffic patterns and effective levels of transit service, which connects the project area to surrounding neighborhoods and provide access to larger market areas throughout the County while minimizing congestion on residential streets.

3. Prepare a Comprehensive Drainage Master Plan to mitigate the threat of flooding within the project area.

4. Provide and maintain an adequate level of public services to the project area including water, sewer, parks, schools, police, fire and library services

5. Promote the location of desirable land uses to minimize land use compatible conflicts

6. Locate desirable future land uses to maximize the opportunity to create an overall pattern of planned orderly development containing a system of land use adequately and sufficiently served by a balanced system of transportation and community services and facilities.

7. The project area should have a center focus that combines commercial, civic, cultural and recreational uses.

8. As many activities as possible should be located within easy walking distance of transit stops or within core area.

9. All planning should be in the form of complete and integrated communities containing housing, shops, work places, parks and civic facilities essential to the daily life of the residents.

10. Provide a diversity of housing types to enable citizens from a wide range of economic levels and age groups to live within the area.

11. Encourage a housing production mix the sizes, types and price range of units and allow for innovative housing construction technologies to provide amenities requested by area residents, including large garages and larger homes.

12. Provide a well defined edge, such as agricultural green belts or wetland corridors, and avoid urban encroachment to such areas

13. Allow for agricultural residential use as a buffer between urban areas and agricultural or constrained areas such as floodplain and wetland resource areas

14. The area should contain an ample supply of specialized open space in the form of squares, greens and parks whose frequent use in encouraged through placement and design.

15. Provide opportunities for open space, recreation and visual relief by planning for parks, trails and parkways. Establish a loop trail that encircles the area and promote open space and recreation use of the areas creeks and sloughs.

16. Whenever possible, the natural terrain, drainage & vegetation of the area should be utilized in conjunction with parks, greenbelt & open space.

17. Counter increasing crime/perception of crime through design improvements and crime prevention activities to increase the safety of residents, business, employees and customers and to maintain and promote neighborhood patronage.

18. Incorporate crime prevention techniques in the urban design of all new developing area within the community. Development plans shall address crime prevention measures including increased visibility and interaction between uses.

19. Encourage the concentration of employment and activity centers, particularly in relation and proximity with higher density residential areas, in order to facilitate shorter travel distances and the use of non-auto modes of travels.

20. Streets, pedestrian paths and bike paths should contribute to a system of fully connected routes to all destinations. Their design should encourage pedestrian and bicycle use by being small and spatially defined by buildings, trees and lighting.

21. Establish development standards that foster compatible design solutions and are aimed at improving how new development projects will fit into the area with the overall intent of defining the area's character.

22. Ensure that a Public Infrastructure Plan and an Infrastructure Financing Plan is adopted, as a component of the Specific Planning program, prior to the occurrence of any new urban development within the area.

23. Public facilities constructed and completed timely with the construction of new residential projects.

24. Improve the quality of life for current and future residents of the project area by ensuring that adequate level of public services are provided.

ENVIRONMENTAL IMPACTS

Land Use

The Land Use section discusses the existing land uses and conditions on and adjacent to the project site, or Plan Area, and provides an expanded project description of the Preferred Plan and the proposed alternatives. The reviewer should note that several of the project description Plates and/or Tables referenced in this section are located in the Project Description Section of this EIR.

This section evaluates potential land use impacts associated with the proposed project land use type, density, and distribution on the project site and in the vicinity of the project site expected to result from project approval and implementation, and from other cumulative development within the project area.

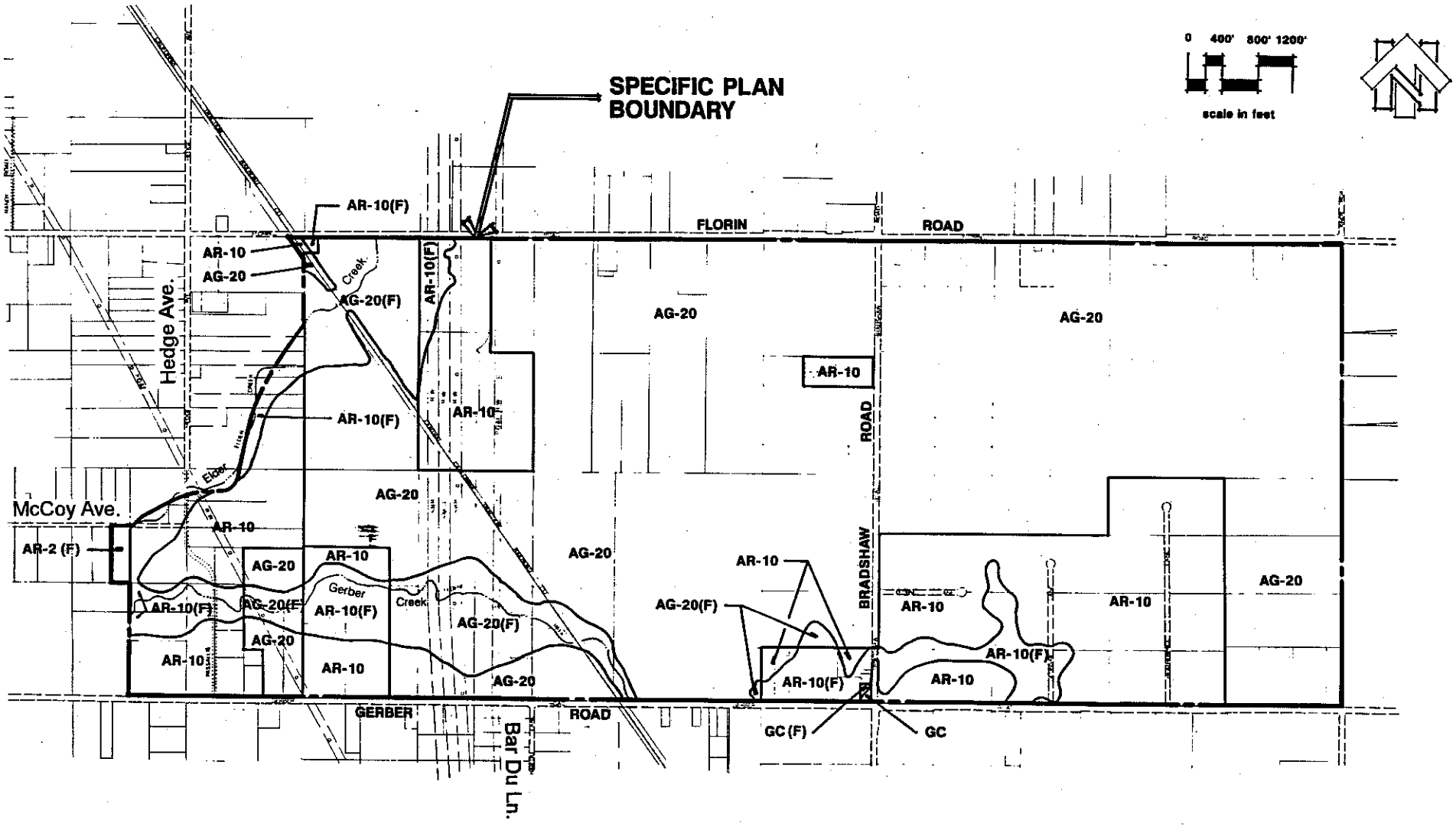
Setting.

The NVSSP planning area ("Plan Area") is located in the south-central unincorporated area of Sacramento County; and at the northeastern edge of the urbanized portion of the community of Elk Grove. The City of Sacramento's Central Business District is located approximately eleven miles to the northwest. The Plan Area lies entirely within Sections 4 and 5 of Township 7 North, Range 6 East and within the USGS Elk Grove quadrangle map.

The Plan Area encompasses 1,590± acres of the Vineyard Community Planning Area. The Plan Area is bounded by Florin Road to the north, Gerber Road to the south, the northerly extension of Vineyard Road on the east, and generally by Elder Creek's north and south forks (see Plate PD-A). Bradshaw Road transects the Plan Area in a north/south alignment. The right-of-way of the Central California Traction Railroad transects the western portion of the planning area.

The NVSSP project area is predominantly utilized for agricultural-residential uses zoned AR-2, AR-10, and AG-20 (see Plate LU-A). The project site is characterized by grassy fields and pastures. Many rural single-family residential dwellings are located within the planning area, along with barns and other out buildings. The small amount of agricultural activity that occurs in the area is generally limited to dry farming. The majority of the site has been subdivided over a period of several years into 147 parcels, most of which are from one-half to 30 acres in size.

Existing land uses surrounding the Plan Area are predominantly agricultural-residential (5-acre or larger lots). However, there are pockets of lower density development (2- to 3-acre



LEGEND

AR-2	Agricultural Residential 2	GC	General Commercial
AR-10	Agricultural Residential 10	(F)	Flood Combining Zone
AG-20	Permanent Agricultural Intensive		

PLATE LU-A

Existing Zoning : Plan Area

lots) in the vicinity. Most of the existing development in the vicinity is located west and southwest of the Plan Area.

Immediately west of the Plan area boundary are McCoy Avenue and Hedge Avenue residential areas. The property along Hedge Avenue south of Florin Road is zoned AR-10 and AR-10(F) along the flood plain and channel of Elder Creek. The property along McCoy Avenue east of Elk Grove-Florin Road is zoned AR-2/AR-2(F), AR-5/AR-5(F), and AR-10/AR-10(F). The 'F' flood combining zone occurs along the Elder Creek flood plain and channel areas. Development along McCoy and Hedge Avenue consists of older homes on 2- to 10-acre parcels. Dwellings on these properties are often accompanied by minor agricultural uses. Immediately south of Gerber Road and west of the railroad is the Bar Du Lane residential area. The Bar Du Lane residential area includes well-maintained single family dwellings on 2- to 3-acre parcels in the AR-10 zone.

The largest suburban development in the area is Churchill Downs, which is located west of Bradshaw Road and approximately one-half mile south of Gerber Road. The residential density in this newer development is generally 5 to 6 dwelling units per acre, comparable to much of the proposed development in the North Vineyard Station Specific Plan.

Land to the south and east of the Plan Area is primarily undeveloped and is designated Agricultural-Residential (1-10 ac/du). The undeveloped land to the north of the eastern half of the Plan area is designated General Agriculture (20 acre). Land north of the western half is designated Natural Reserve (and contains the Elder Creek recreation area) and Agricultural-Urban Reserve combined with Aggregate Resource Area. Land north of the Plan area has been used primarily for grazing.

Land uses along the Elder Creek off-site impact areas for the proposed Drainage Master Plan transition from agricultural residential uses to low density residential uses. Elder Creek flows west across the north side of the Champions Golf Links facility zoned AR-10/AR-10(F) at the northeast corner of Elk Grove-Florin Boulevard. From the Golf Links Facility Elder Creek flows beneath Elk Grove-Florin Boulevard through agricultural residential property zoned AR-10/AR-10(F), AR-1/AR-1(F), AR-2/AR-2(F), AR-5/AR-5(F). The land use zoning for the Elder Creek off-site areas is shown on Plate LU-B. Land uses along the Gerber Creek off-site impact areas for the proposed Drainage Master Plan are zoned AR-10/AR-10(F) and AG-20/AG-20(F) as shown on Plate LU-C.

Proposed Specific Plan & Project Alternatives.

The following section describes the proposed "Preferred Specific Plan", and three project plan alternatives prepared in response to the Board of Supervisors direction (see Plates PD-B through PD-E). The three project plan alternatives include: a 10% Residential

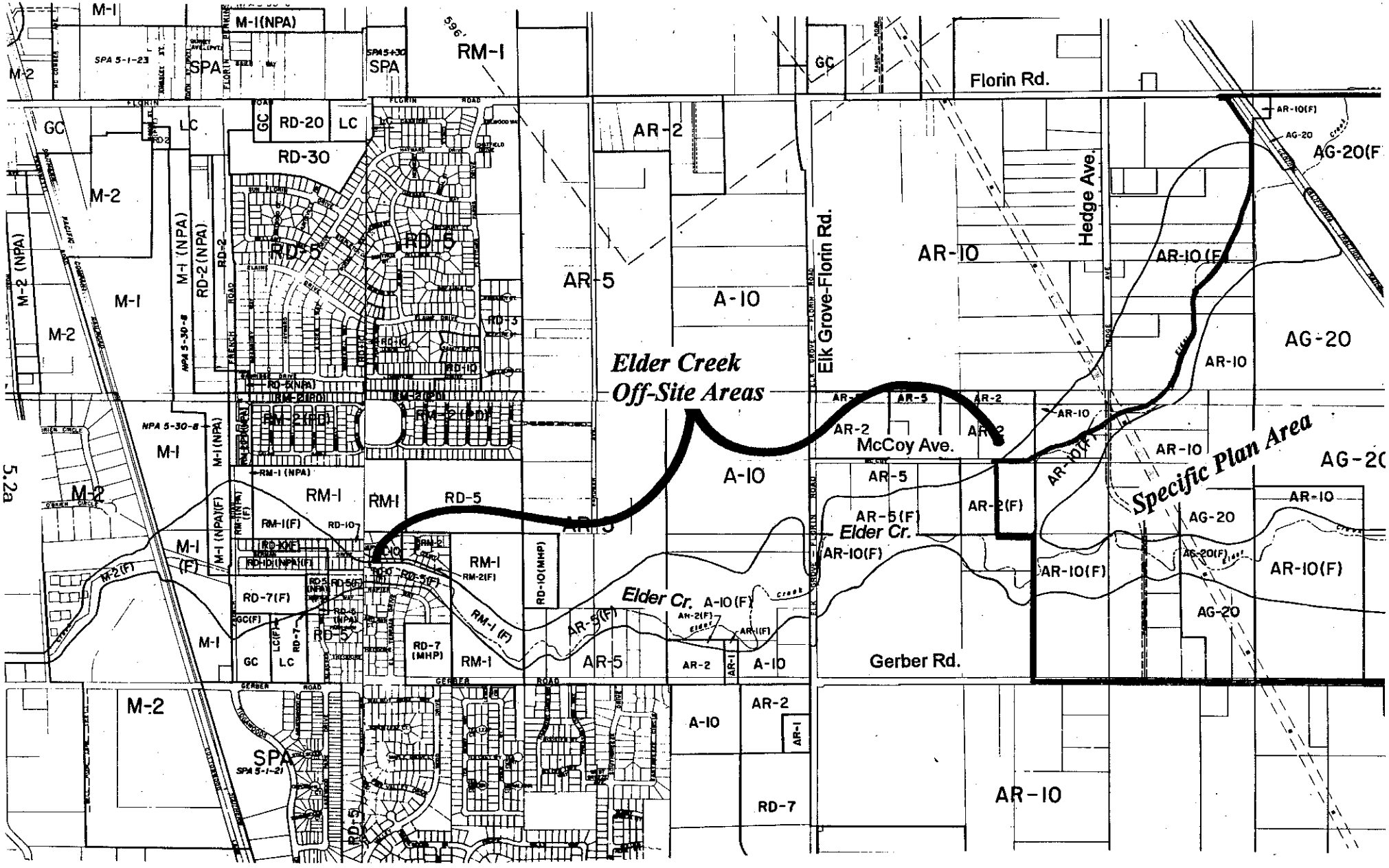


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PLATE LU-B

<u>Exsting Zoning : Elder Creek Off-Site Areas</u>

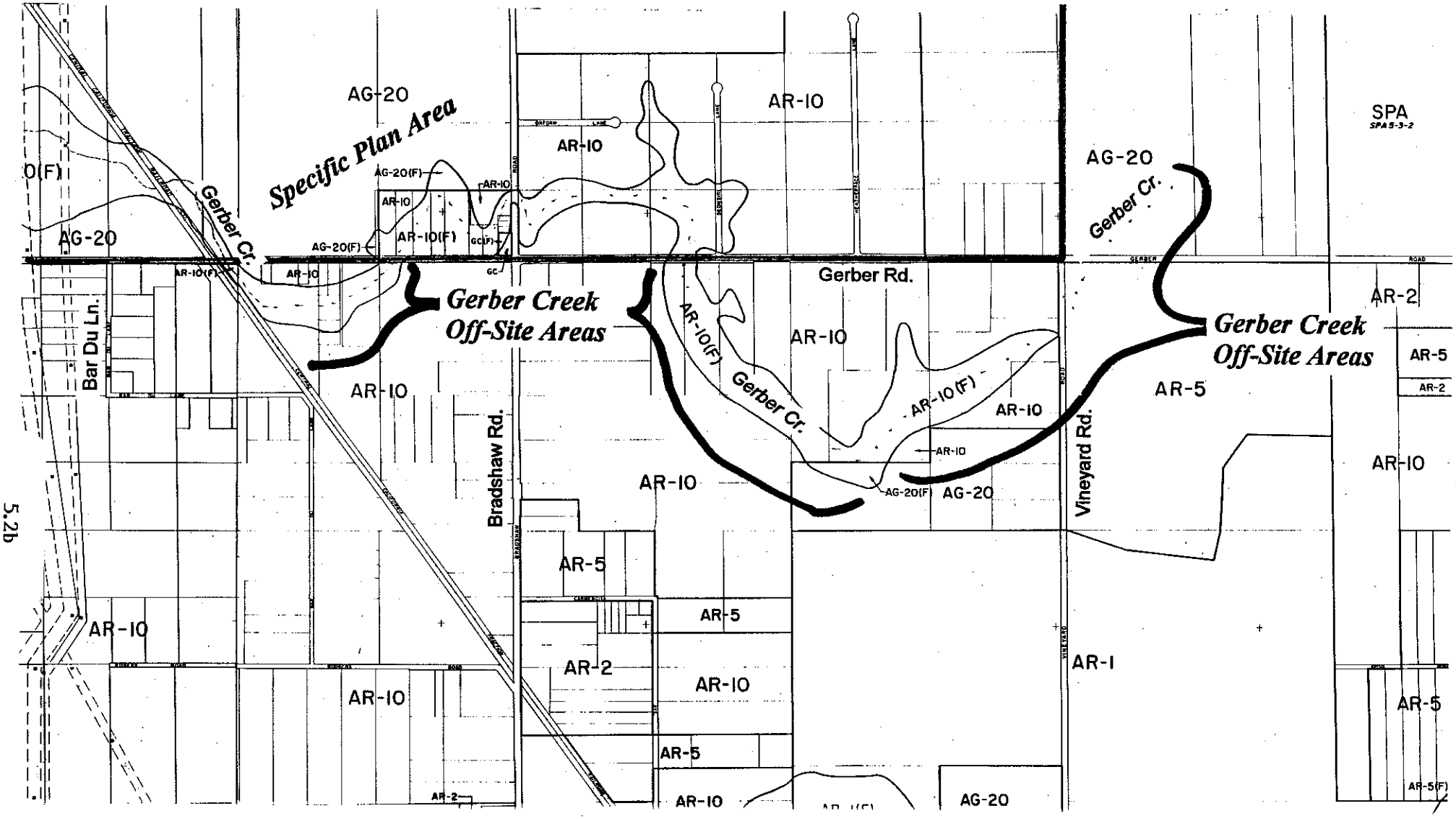

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PLATE LU-C

Existing Zoning ; Gerber Creek Off-Site Areas

Density Reduction Alternative, a 15% Residential Density Reduction Alternative, and a Modified Core Alternative as described below.

Preferred Specific Plan.

The proposed plan is the Preferred Specific Plan developed by the project co-sponsors. The Preferred Specific Plan consists of a 6,339-dwelling unit (DU) residential land use plan with supporting commercial, business professional, park, school, and open space uses. The urban core and focus area of the Preferred Plan, is located on the north side of Gerber Road and west of the Central California Traction Railroad, along a portion of Gerber Creek. The Preferred Plan urban core and focus area includes commercial, business professional, and multi-family residential uses located in proximity to the railroad tracks and Gerber Creek. Proposed urban core and focus area uses include a transit station, park and ride lots, a park plaza and a drainage parkway and related amenities along Gerber Creek. The Preferred Plan includes two elementary school sites, one on each side of Bradshaw Road, and several community and neighborhood parks. The Preferred Specific Plan: Land Use Plan (graphic) is shown on Plate PD-B.

The proposed Specific Plan Document provides the following land use summary overview description:

> In response to direction contained in the Sacramento County General Plan, the North Vineyard Station Specific Plan responds to the need for a well-planned, high quality suburban environment in the Vineyard area. The Plan has been prepared following public input, extensive analyses of environmental conditions, adjacent land use, and area-wide infrastructure needs, and a multitude of other factors.
>
> The Plan provides for the ultimate development of the entire 1,595-acre area, including 6,339 dwelling units in a wide range of types and densities, retail commercial and business professional uses for the convenience of local residents, parks and open space, schools, and all public facilities necessary to support the ultimate population at adopted service levels.
>
> A key land use feature is the community's commercial core area, located at the intersection of Waterman Road and Gerber Road. Another important land use component is the Drainage Parkway system. Created within the alignments of Gerber and Elder creeks, these areas will serve the dual purposes of providing open space and passive recreation while dramatically improving storm drainage in the area.
>
> The Plan places a high priority on aesthetics, quality of life, and land use compatibility. Accordingly, the most intensive land uses are placed in close proximity to major streets, transit facilities, and commercial sites. Open space buffers and other

mechanisms are employed to further enhance land use compatibility. And, to ensure visual continuity and quality of the built environment, all Plan area streets and land uses are subject to consistent policies and design guidelines.

Transportation alternatives are a primary consideration of the Plan. The Plan includes a hierarchy of streets that will facilitate the safe and efficient movement of motorists, pedestrians, and bicyclists throughout the Plan area and beyond. Also, a network of off-road trails within the Drainage Parkways compliments the extensive pedestrian and bicycle transportation system along public streets.

The following is a summary of the key features of the Preferred Plan:

- A primarily residential community that includes a wide range of housing types and densities, all served by necessary public infrastructure.
- Well-defined residential neighborhoods, served by nearby parks and schools.
- A commercial center at the Waterman Road/Gerber Road intersection that will provide retail commercial shopping and employment opportunities for area residents.
- Parks and other open space dispersed throughout the community to serve both active and passive recreational needs.
- A railroad corridor designated as a future public transit right-of-way, including a future transit station and associated plaza park.
- A naturalized storm drainage system within Drainage Parkways that is part of a larger, county-wide solution to area-wide flooding.
- A network of pedestrian and bicycle pathways along streets and within dedicated open space.
- A street network that provides safe and efficient travel throughout the Plan area, with multiple connections to existing major streets beyond the Plan area.
- Development standards, land use policies, and design guidelines that will guide development through ultimate build out of the Plan.

Table LU-1
PREFERRED PLAN
Land Use Summary

Land Use	Fixed Count/[2]	Net Acres	Gross Acres	Dwelling Units
Residential/Density Range/[1]				
Single Family SFR/1-3	2 (gross)	--	150.4	301
Single Family SFR/3-5	5 (gross)	--	644.5	3,222
Single Family SFR/4-12	6 (gross)	--	281.3	1,724
Existing Residential	--	--	6.0	13
Medium Density MDR/7-12	10 (Net)	44.2	45.4	442
Multi-Family MFR/14-22	18 (net)	35.4	39.7	637
Commercial		28.5	28.6	
Business Professional		9.5	10.1	
Schools		20.0	21.7	
Parks		99.5	104.7	
Golf Course		19.8	19.9	
Parkway		6.3	6.4	
Drainage Parkway		61.3	62.0	
Open Space/Storm Water Detention		76.6	79.2	
Major Streets		--	58.0	
Transit Center		10.0	11.1	
Public Services		--	4.9	
Railroad		--	14.6	
Totals			**1,594.5**	**6,339**

1/ Density is expressed as dwelling units per acre.
2/ Fixed count refers to the density average used to calculate dwelling yields. Medium Density Multi-family counts are based on net acreage; all Single Family counts are based on gross acreage.

10% Density Reduction Specific Plan Alternative (-10% Alternative).

The 10% Density Reduction Specific Plan Alternative, or "-10% Alternative", is in response to direction by the Board of Supervisors to prepare a land use plan that proposes a ten percent reduction in residential dwelling unit yield than depicted on the Preferred Plan. The -10% Alternative plan land use pattern is essentially the same as the Preferred Plan, but with reduced residential densities. The reduction in overall residential densities is accomplished by converting 45.4 acres of medium density residential uses and 287.3 acres of single family low density residential uses of 4 to 7 dwelling units per acre to single family density of 1 to 5 dwelling units per acre. In addition, approximately 8.5 acres of 'Park' acreage is also converted to single family low density residential use of 1 to 5 dwelling units per acre.

The overall residential capacity of the -10% Alternative Plan is 5,759 dwelling units, 580 units less than the Preferred Plan. There is no medium density residential use in the -10% Alternative Plan. The urban core and focus area acreages remain generally the same as the preferred plan. The -10% Alterative is presented on Plate PD-C. Table PD-1 provides an acreage and/or dwelling unit (DU) comparison summary of the Preferred Plan and the -10% Alternative Plan land uses.

The proposed Specific Plan Document notes the following principal differences between this -10% Alternative and the Preferred Plan:

- The potential number of dwelling units has been reduced by 10 percent to 5,759. This results in a projected population of 14,974.
- The Medium Density Residential (MDR 7-14) category has been eliminated.
- The Single Family Residential (SFR) 4-7 category has been eliminated.
- The acreage and dwelling units in the Single Family Residential (SFR) 3-5 category have increased to 980.4 acres and 4,798 dwelling units. The fixed count density has been reduced from 5. 0 to 4.9 dwelling units per acre.
- The acreage and dwelling units in the Single Family Residential (SFR) 1-3 category have been increased slightly to 155.7 acres and 311 dwelling units.
- As a result of reduced population, the number of park sites has been reduced to 13 and the park acreage has been reduced to 91.5.

Table LU-2
-10% ALTERNATIVE PLAN
Land Use Summary

Land Use	Fixed Count/2	Acres/3	Dwelling Units
Residential/Density Range/1			
Single Family SFR/1-3	2 (gross)	155.7	311
Single Family SFR/3-5	4.9 (gross)	980.4	4,798
Existing Residential	--	6.0	13
Multi-family MFR/14-22	18 (net)	35.4	637
Commercial		28.5	
Business/Professional		9.5	
Schools		20.0	
Parks		91.5	
Golf Course		19.8	
Parkway		6.3	
Drainage Parkway		61.3	
Open Space/Storm Water Detention		76.6	
Major Streets		58.0	
Transit Center		10.0	
Public Services		4.9	
Railroad		14.6	
Totals		**1,594.5**	**5,759**

1. Density is expressed as dwelling units per acre.
2. Fixed count refers to the density average used to calculate dwelling yields. Multi-family counts are based on net acreage; all Single Family counts are based on gross acreage.
3. All acreage is net unless otherwise specified.

15% Density Reduction Specific Plan Alternative (-15% Alternative).

The general character of the 15% Density Reduction Specific Plan Alternative is a plan that provides a 15 percent reduction of the overall residential capacity of the Preferred Plan. Similar to the -10% Plan, the land use pattern is generally the same as the Preferred Plan, but with further reduction of the Preferred Plan residential densities. The reduction in overall residential densities is accomplished by converting 45.4 acres of medium density residential uses and 287.3 acres of single family low density residential uses of 4 to 7 dwelling units per acre to single family density of 1 to 5 dwelling units per acre. In addition, approximately 12 acres of 'Park acreage is also converted to single family low density residential use of 1 to 5 dwelling units per acre.

The overall residential capacity of the -15% Alternative Plan is 5,384 dwelling units, 991 units less than the Preferred Plan and 403 units less than the -10% Alternative Plan. The -15% Plan is presented as Plate PD-D. Table PD-1 provides an acreage and/or dwelling unit (DU) comparison summary of the Preferred Plan and the -15% Plan.

The proposed Specific Plan Document notes the following principal differences between this -15% Alternative and the Preferred Plan:

- The potential number of dwelling units has been reduced by 15 percent to 5,384. This results in a projected population of 13,998.
- The Single Family Residential (SFR) 4-12 category has been eliminated.
- The acreage and dwelling units in the Single Family Residential (SFR) 3-5 category have increased to 984 acres and 4,423 dwelling units. The fixed count density has been reduced from 5. 0 to 4.5 dwelling units per acre.
- The acreage and dwelling units in the Single Family Residential (SFR) 1-3 category have been increased slightly to 155.7 acres and 311 dwelling units, respectively.
- As a result of reduced population, the number of park sites has been reduced to 13 and the park acreage has been reduced to 88 acres.

Table LU-3
-15% ALTERNATIVE PLAN
Land Use Summary

Land Use	Fixed Count/2	Acres/3	Dwelling Units
Residential/Density Range/1			
Single Family SFR/1-3	2 (gross)	155.7	311
Single Family SFR/3-5	4.5 (gross)	984.0	4,423
Existing Residential	--	6.0	13
Multi-family MFR/14-22	18 (net)	35.4	637
Commercial		28.5	
Business/Professional		9.5	
Schools		20.0	
Parks		88.0	
Golf Course		19.8	
Parkway		6.3	
Drainage Parkway		61.3	
Open Space/Storm Water Detention		76.6	
Major Streets		58.0	
Transit Center		10.0	
Public Services		4.9	
Railroad		14.6	
Totals		**1,594.5**	**5,384**

1. Density is expressed as dwelling units per acre
2. Fixed count refers to the density average used to calculate dwelling yields. Multi-family counts are based on net acreage; all Single Family counts are based on gross acreage.
3. All acreage is net unless otherwise specified.

Core Relocation Specific Plan Alternative.

The Core Relocation Specific Plan Alternative (Plate PD-E.1 and Plate PD-E.2), proposes relocation of the core area's urban land use densities/intensities away from the Bar Du Lane residential neighborhood.

The Core Relocation alternative proposes relocation of the core/focus area's mix of commercial, business professional, and multi-family residential uses from the south-west Plan Area (Waterman Road, Gerber Road/Creek area) to the north-central Plan Area (Bradshaw Road and Florin Road). The transportation/transit oriented components of the Preferred Plan Core Area (transit station, park and ride lots, park plaza) remain adjacent to the Central California Traction Railroad and are not relocated with this alternative. Similarly, the drainage parkway features or improvements of the Preferred Plan Core Area remain adjacent to Gerber Creek. The relocated core area alternative contains the same relative mix of commercial, business professional, multi-family residential, and public/quasi-public land uses as the Preferred Plan core area.

The Core Relocation Specific Plan Alternative may be combined or overlayed with the Preferred Specific Plan, the -10% Alternative, or the -15% Alternative. Core Relocation Alternative combinations with the Preferred Plan, the -10%, or -15% Alternative, is accomplished by substituting lower density residential (SFR 3-5 and SFR 4-7) for the mix of commercial, business professional, and multi-family residential uses that are relocated to the north-central Plan Area.

Proposed Amendments to Existing Plans.

General Plan Land Use Diagram Amendment.

The project description section of this document contains all the land use exhibits discussed herein. The existing General Plan designation for the entire Plan Area is "Urban Development Area" (see Plate PD-F). Amendments to the County General Plan Land Use Diagram are necessary for the proposed land uses and residential densities shown on the Preferred Specific Plan Land Use Plan and each of the alternative plans, if adopted. Plate PD-G shows the proposed General Plan designation for the Preferred Plan. Plates PD-H and PD-I show the proposed designations for the -10% Alternative Plan and the -15% Alternative Plan, respectively. Plates PD-J.1 and PD-J.2 shows the proposed General Plan designations for the Modified Core Alternative under either the Preferred Specific Plan or the -10% and the -15% Alternative Plans. Table PD-2 summarizes the County General Plan Designation acreages for the Preferred Plan, the -10% Alternative, and the -15% Alternative.

General Plan Transportation Plan Diagram Amendment.

Plate PD-K shows the roadway network depicted by the Transportation Diagram of the General Plan for the NVSSP planning area. Table PD-3 summarizes planned roadway improvements listed in the General Plan. The Transportation Diagram of the General Plan identifies the Central California Traction Railroad right-of-way as transportation corridor.

The circulation pattern associated with the Preferred Plan and each alternative is shown on the corresponding land use plan. The circulation pattern in each of the land use alternatives is similar to that of the Preferred Plan.

Within the project, Waterman Road will be extended from its current terminus at Gerber Road to Florin Road. The NVSSP project includes one at-grade crossing of the tracks of the Central California Traction Railroad at Waterman Road, approximately one half mile south of Florin Road. Improvement of the two existing at-grade crossings at Florin Road and Gerber Road is also anticipated.

Vineyard Community Plan Amendment.

Plate PD-L shows the existing Vineyard Community Plan land use designations (and existing zoning) for the Plan Area. The existing Community Plan designations within the project area are AG-20/AG-20(F) and AR-10/AR-10(F). A Community Plan Amendment to a designation of "SP" (Specific Plan) will be required for the project (Plate PD-M). Allowed uses for any given area would be described by both the written and graphic descriptions within the proposed Specific Plan document.

Proposed Specific Plan Document.

The proposed Public Review Draft of the NVSSP document has been published under separate cover by the Sacramento County Planning and Community Development Department, and is hereby incorporated by reference. The current version is dated May 28,1997. Copies of the Draft Specific Plan document are available from the County Planning Department at 827 Seventh Street, Room 230, Sacramento CA, 95814.

The proposed Specific Plan document includes a written text, exhibits, graphics and appendices, including technical reports utilized in the preparation of this EIR. The proposed Specific Plan document will serve as both a policy and regulatory document if the plan is approved and adopted. The Specific Plan includes policies as well as permitted uses,

development standards and design guidelines for the various land uses identified on the proposed Preferred Specific Plan graphics depicted on Plate PD-B. The Specific Plan document includes the land use plan that establishes the type and densities of land uses in the Plan Area. The Specific Plan document also includes several major elements that address site development opportunities and constraints , describe land uses, and outline development standards, permitted uses, design guidelines, and infrastructure requirements.

In addition, all of the "Technical Studies" or "Technical Analysis" referenced in this EIR and published as separate EIR volumes are also a component of the proposed Specific Plan.

Proposed Zoning Ordinance Amendment.

In some cases, the proposed Specific Plan development regulations deviate from the adopted County Zoning Ordinance. To allow for the proposed Specific Plan deviations, a Zoning Ordinance Amendment is also proposed as part of the project actions necessary to codify the North Vineyard Station Specific Plan development standards in to the County Zoning Ordinance.

Impacts and Analysis.

General Plan Consistency:

Background.

The County General Plan Land Use Element recognizes that the demand for land has created a number of problems in Sacramento County. These problems include an increased consumption of open space, deteriorating air quality, decrease in housing affordability, degradation of public facilities, and increase in traffic congestion. The General Plan also notes that efficient land and resource use in Sacramento County can best be achieved by being committed to a mitigating pattern of land use that concentrates development in configurations designed to protect valuable agricultural lands, conserve natural resource areas, reduce automobile travel distances and related air pollution, as well as conserve energy, and enhance the efficient provision of infrastructure and services. As discussed in the General Plan Land Use Element (p.17), development in the county unincorporated area is characterized by low density suburban sprawl. This pattern of development has led to inefficient use of infrastructure and delivery of services, increased traffic congestion, and diminished air quality. A more efficient pattern of land use is needed to effectively address the shortcomings of continued suburban sprawl in Sacramento County.

Low-density, auto-dependent land uses have characterized Sacramento County development in the last several decades. County suburban sprawl illustrates continued conflicts with: protecting and preserving the County's diminishing open spaces and natural habitat/resource areas; the need to protect human health; the need to produce a variety of housing types to support a diverse and growing County population and economy; and the ability of County government to continue to pay for support and maintainence of infrastructure to serve low density development.

In recognition of these issues, the County General Plan adopted the following Land Use Element goals:

> Land Use Element Goal: An orderly pattern of land use that concentrates urban development, enhances community character and identity through the creation and maintenance of neighborhoods, is functionally linked with transit, and protects the County's natural, environmental and agricultural resources. (p.35)
>
> Strategies to Accommodate Growth Goal: Accommodate projected population and employment growth areas where the appropriate level of public infrastructure and services area or will be available during the planning period. (p. 38)

The proposed North Vineyard Station Policy Plan contains four general policies that are intended to guide the long-term growth and development of the Specific Plan Area as follows:

NVS-1. Create an overall pattern of planned orderly urban development containing a system of land uses adequately and efficiently served by a balanced transportation system.

NVS-2. Provide higher density residential and higher intensity commercial uses proximate and physically related to transit stops along transit corridors in order to minimize vehicle trips and expand the use of alternative modes of transportation.

NVS-3. Provide for the orderly development within the Plan area through the use of phasing and implementation measures to ensure the timely delivery of services to new urban land uses with minimal impact to existing land uses.

NVS-4. Enhance community identity and character by ensuring that the character of development is compatible with surrounding development, and that the new development is appropriately designed to fit within its surrounding.

As discussed in the General Plan Land Use Element, near-term urban/suburban development should first be accommodated through infill development, or build-out of community areas where infrastructure and services presently exist. However, it is recognized that infill development alone can not accommodate all of the county development projected to occur during the planning period. The General Plan therefore also designates several new urban growth areas at the edge or fringe of existing urban/suburban development to accommodate the additional projected growth . The stated objective for new urban growth areas is:

> *Thirty percent of projected population growth (28,300 units) accommodated through efficient transit-oriented development in new urban growth areas at the urban fringe.*

These County designated urban growth areas are identified on Plate LU-D. The subject Specific Plan Area is located in a designated urban growth area. The Specific Plan text includes planning principles used to guide formulation of a land use plan which will meet the goals and objectives of the General Plan (see "Project Objectives").

Many of the urban growth areas are also located within areas outlined dotted lines on the General Plan Land Use Diagram (see Plate LU-E). These "dotted line areas denote those areas that must be designed in a manner that conforms to the transit-oriented development (TOD) concept outlined in Land Use Policy LU-26. General Plan Land Use designations for these TOD development areas were either directly addressed by designating specific Urban TOD or Neighborhood TOD sites on the General Plan Land Use Diagram itself, or by designating the area as an Urban Development Area on the General Plan Land Use Diagram and including a conceptual TOD design plan in the text and exhibits of the County General Plan document. The Plan Area is located within the TOD development area designated as an Urban Development Area (UDA). Since the Plan Area is located in a UDA of the Vineyard Community, the "Vineyard Area Conceptual Plan" of the General Plan is applicable with regard to transit oriented development design and specific TOD site locations (see Plate LU-F).

The Vineyard Area Conceptual Plan is a conceptual land use plan designed in a manner that conforms to the transit-oriented development (TOD) concept outlined in Land Use Policy LU-26 which states:

LU-26. Developments in the areas designated on the Land Use Diagram as Urban or Neighborhood TODs shall be designed in a manner that conforms to the concepts of transit-oriented development, including:

- High intensity, mixed-use development concentrated in a Core Area within an easy walk (one quarter mile) of a transit stop on the Trunk or Feeder Line

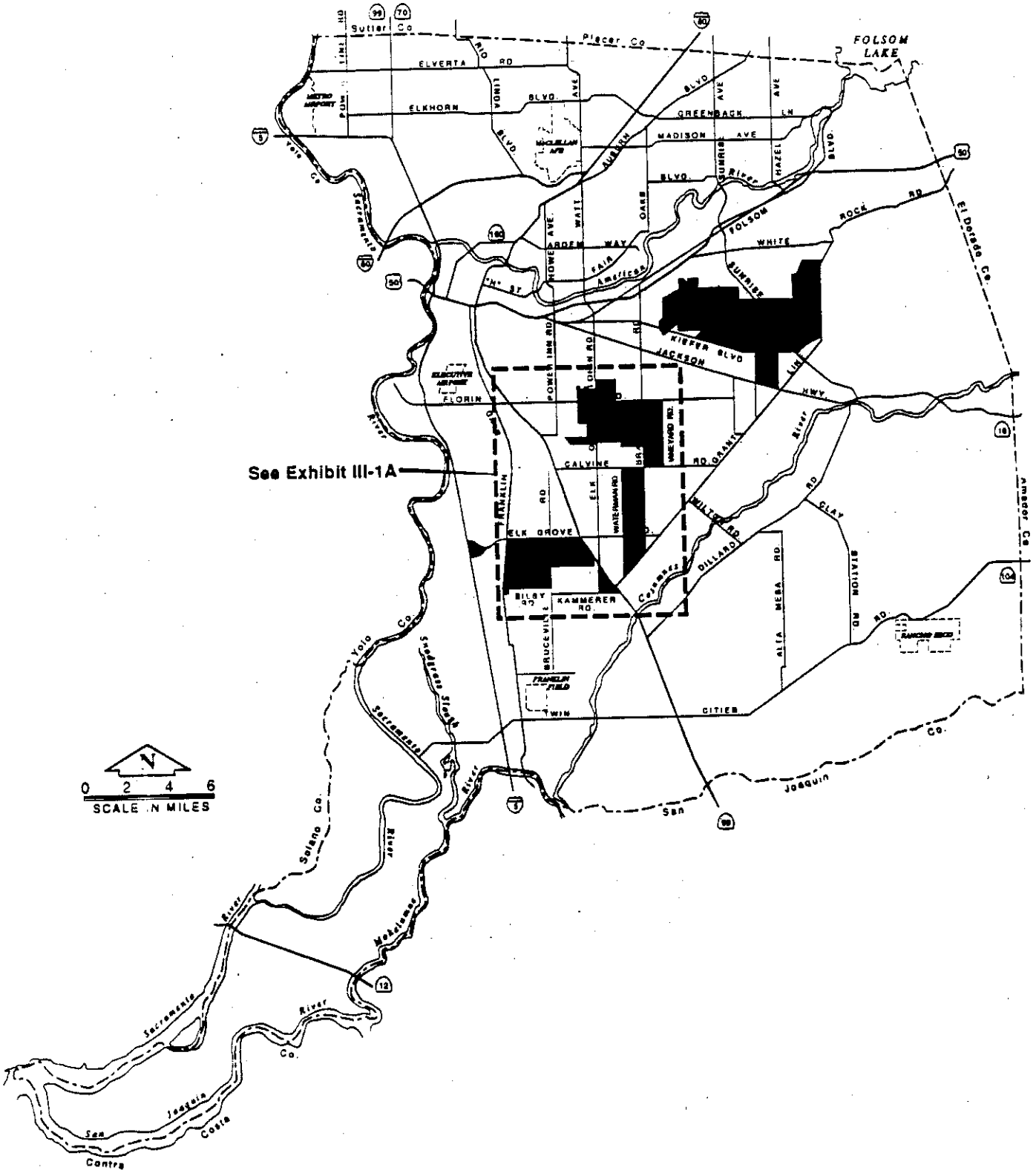
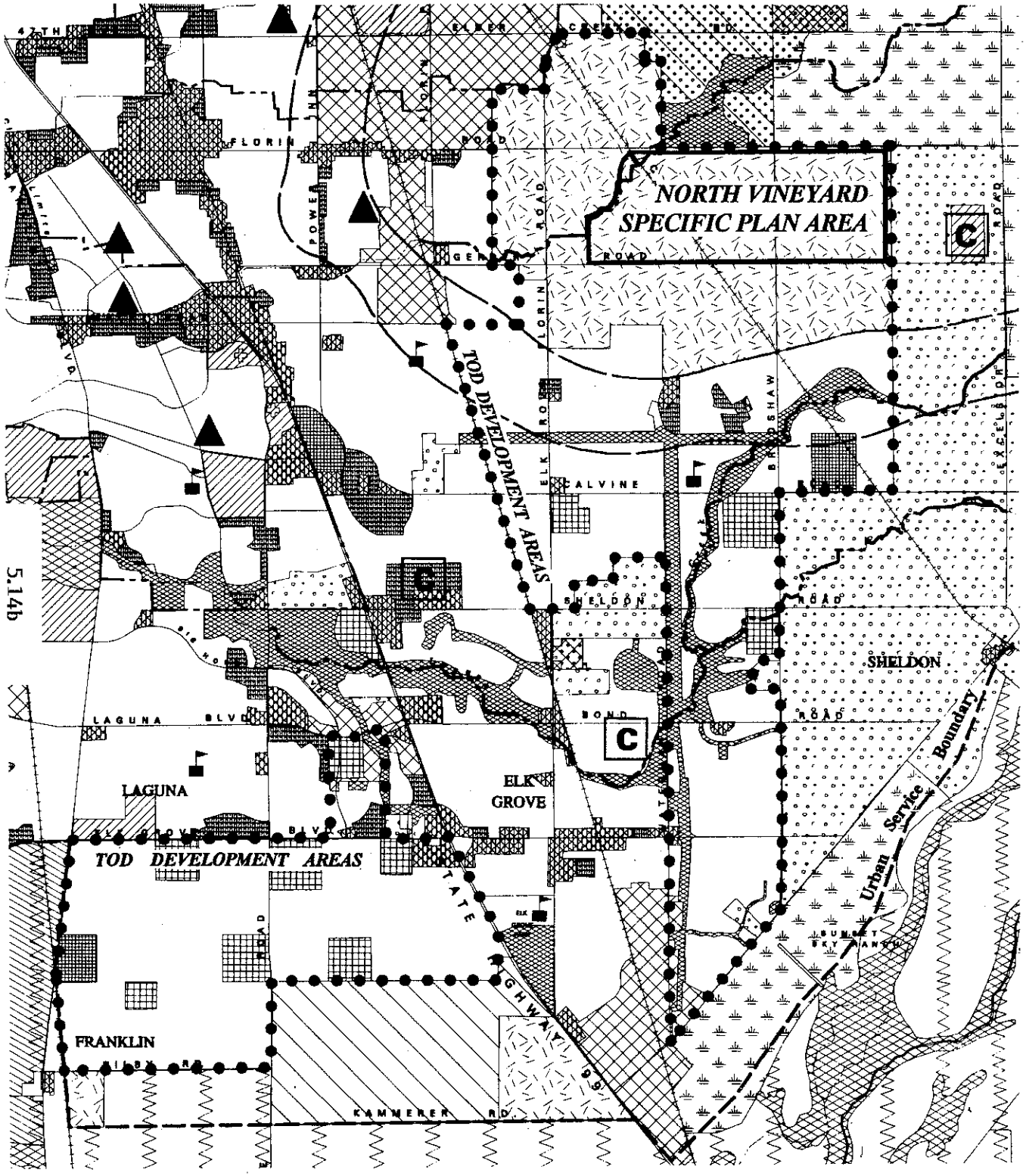


PLATE LU-D

County Urban Growth Areas



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GENERALIZED LEGEND*

- Specific Plan Area
- Urban Development Area
- Agricultural Residential
- Low Density Residential (1-12 du/ac)
- Medium Density Residential (13-30 du/ac)
- Open Space: Recreation
- Open Space: General Ag (20 Ac)
- Urban Service Boundary

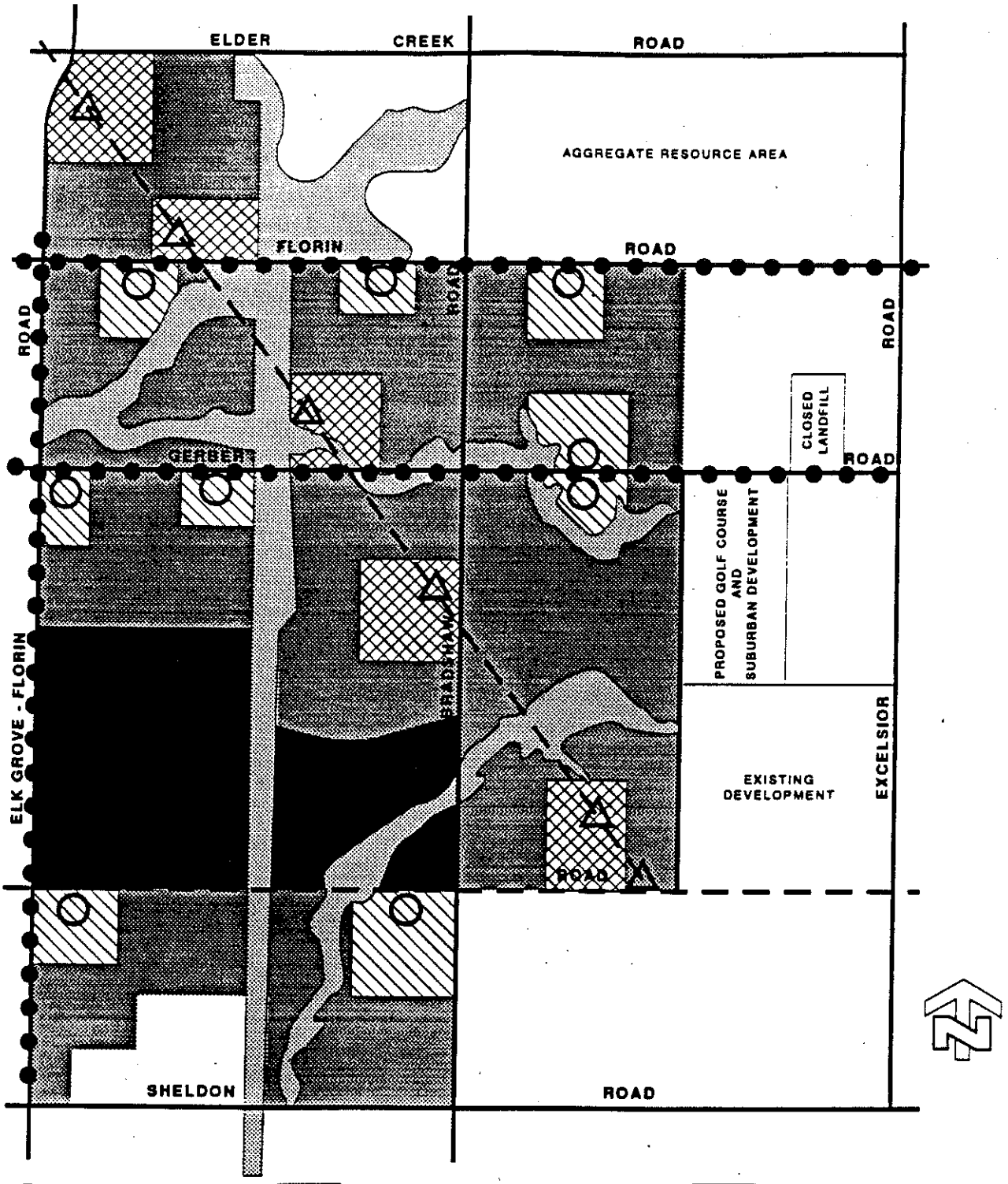
(TOD Development Areas). Areas within the dotted line reflect the County's policy of locating higher density, mixed-land use configurations along transit lines. The County will require new development in these areas to be designed in a manner that conforms to the concepts of transit-oriented development as found in Land Use Element Policy LU-26. Modification to TOD orientation size and geographic location may occur as specific stop locations and configurations are further defined by Regional Transit and as specific site planning occurs. The Transit/Land Use Relation Strategy in the Land Use Element text further defines TODs.

*(*See: County General Plan Land Use Diagram for more detailed legend)*

North

PLATE LU-E

General Plan Land Use Diagram



Trunk Line Network
LRT Stop
Local Transit Center
Feeder Line Network
Open Space
Roadways/Streets
Urban TOD
Neighborhood TOD
Low Density Residential
Secondary Areas

PLATE LU-F

Vineyard Area Conceptual Plan

Prepared by the Sacramento County Planning and Community Development Department

Network.

- An emphasis on neighborhood support commercial services at street level in the Core Area that can serve the residents of the Core and surrounding Secondary Areas, with other employment encouraged in the Urban TODs created along the Trunk Line Network.

- A pleasant walking environment created through good land use design, short distances, amenities, and streetscape features.

- Direct, multiple linkages, especially for bicycles and pedestrians, between the Core Area and the surrounding Secondary Area.

There area two types of TOD's that can be developed: "Urban TODs" and "Neighborhood TODs". Urban TODs are to be located on the Trunk Line Network at Light rail stops or at bus transfer stations. Because they are adjacent to the major spine of the regional transit system, these TODs may have a higher percentage of job-generating uses and may be developed at higher commercial intensities and residential densities. Neighborhood TODs are located on feeder bus lines within 10 minutes travel time from light rail stops or bus transfer stations. Neighborhood TODs should place a greater emphasis on residential uses and local shopping services.

The portion of the Vineyard Area Conceptual Plan applicable to the Plan Area identifies four transit-oriented development sites, three of which are Neighborhood TODs and one of which is an Urban TOD. Two of the Neighborhood TODs are located on Florin Road, east and west of Bradshaw Boulevard. The third Neighborhood TOD is located on Gerber Road east of Bradshaw Boulevard. The Urban TOD is located north of Gerber Road and primarily on the east side of the Central California Traction Railroad tracks as highlighted on Plate LU-F.

An overlay of the Vineyard Area Conceptual Plan on the Plan Area Property Ownership Map highlights the fact that all of the designated TOD areas are located on the Specific Plan proponent properties as depicted on Plate LU-G. The Neighborhood TODs on Florin Road are generally located on the Florin Investors-Saca proponent properties east of Bradshaw Road and the Morvai Trust properties west of Bradshaw Road. The Neighborhood TOD on Gerber Road is generally located on the E. Bradshaw/Gerber Investors properties and the Urban TOD is generally located on the Point Vineyard properties.

The County's TOD Design Guidelines (Calthorpe Associates, September 30, 1990) note that TODs in Urban Growth Areas must be at least 40 acres and no more than 160 acres in size (TOD Guideline 3B). These Guidelines specify that TODs are mixed-use neighborhoods which are to be developed around a transit stop and a core commercial area. The entire TOD

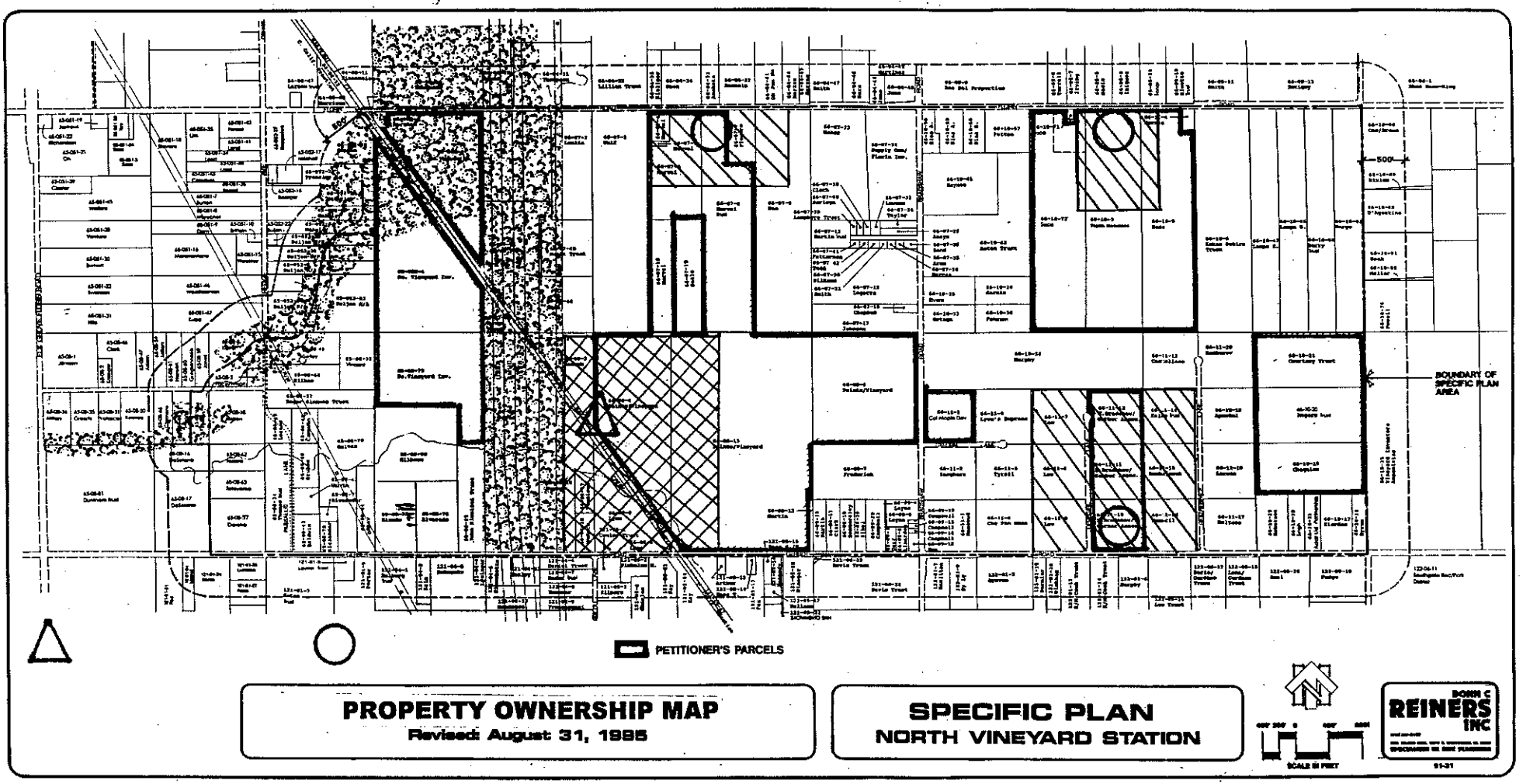
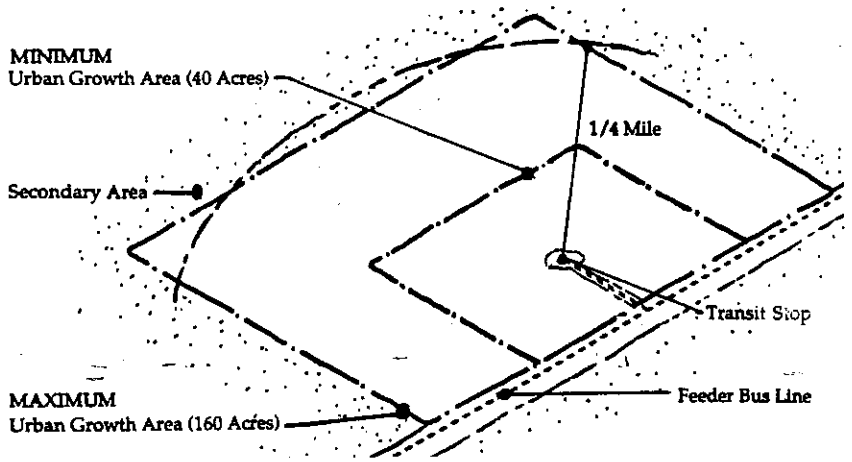
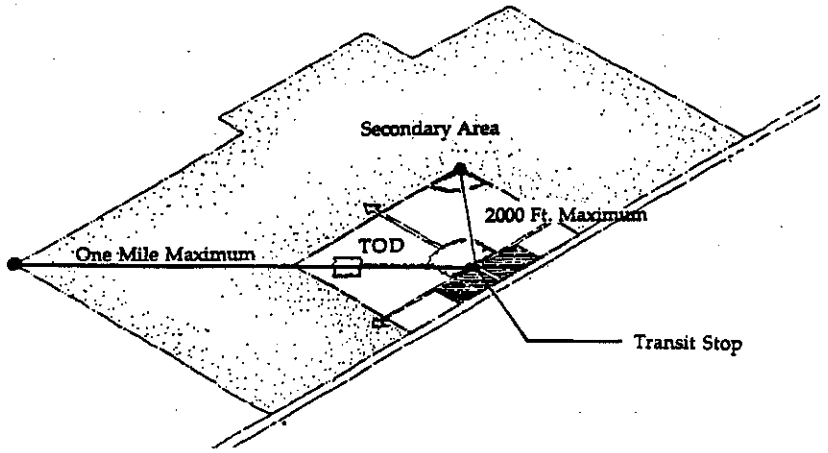
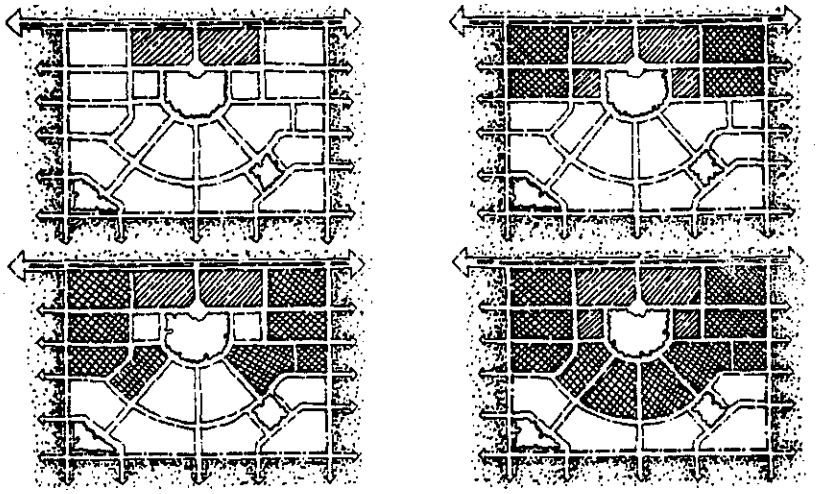


Figure 1.7
Property Ownership Map

PLATE LU-H

Tod Guidelines & Diagrams for Urban Growth Areas

TOD GUIDELINE	TOD DIAGRAM
3B: Urban Growth Areas Site Size. TOD sites in Urban Growth Areas must be at least 40 acres, and no more thatn 160 acres, in size. These TOD sites must be complemented by Secondary Areas.	
3D: Distance From Transit Stop. The TOD must not contain land further than 2,000 feet from a transit stop. The Secondary area may contain land no further than one mile form the transit stop.	
4A: Proportion of Uses. The following is a list of gross land use areas within the TOD and their minimum and maximum percentage of site area: **Use** / **Neighborhood TOD** / **Urban TOD** Public / 10% min. / 10% min. Core / 10-15% / 10-30% Housing / 40-80% / 20-60% Office / 0-40% / 20-60% Public Core Housing Office	

site must be within an average one-fourth mile walking distance of a transit stop. In Urban Growth Areas, 40 acres is considered the minimum area necessary to develop a TOD that can function as a mixed use transit-oriented destination. A 160-acre block is equivalent to a 1/4 mile square, which is a distance most people are willing to walk, without hesitation, to a transit stop (TOD Guideline 3D). The General TOD Guidelines and Diagrams for Urban Growth Areas area identified on Plate LU-H.

Secondary areas of lower density housing, schools, parks, open space and commercial and employment uses can surround TODs for up to a one mile biking distance. TODs must either be located on a segment of the Trunk Line Network (either a light rail or express bus line) or on a segment of the Feeder Bus Line Network within 10 minutes transit travel time from the Trunk Line Network. The design, configuration, and mix of uses in a TOD is to provide an alternative to traditional suburban development by emphasizing a pedestrian-oriented environment and reinforcing the use of public transportation.

The Housing Element of the General Plan refers to the Specific Plan process as a means to enhance the provision of housing within the County. Mixed-use developments (i.e. TODs) are cited in the Housing Element (p. 80) as one of the objective means to increase the supply of housing stock, particularly in expanding affordable housing opportunities.

Land Use Element Consistency.

Transit Oriented Developments: Neither the Preferred Plan nor the other Plan Alternatives clearly identify TOD areas. Instead, the Preferred Plan and the Plan Alternatives focus on relatively low-density land use patterns characteristic of development elsewhere in Sacramento County. Approximately 70% of the total acreage (90% of the residential acreage) in the Plan Area is designated for Low Density Residential land uses on the proposed General Plan exhibits/diagrams (Plates PD-H through K). General Plan Policy LU-11 states that Specific Plans for areas within the Urban Service Boundary should provide a balance of employment, neighborhood services, and different housing types where ever feasible.

The Preferred Plan and the Plan Alternatives do not follow the Vineyard Area Conceptual Plan (Plate LU-F) which the General Plan endorses as a means to achieving efficient land use. The exclusion of TOD sites on the proposed General Plan exhibits/diagrams maybe deemed inconsistent with the General Plan Land Use Element goals, policies, and text which urges the development of efficient land use plans and the reduction of suburban sprawl. The exclusion of TOD sites on the proposed General Plan exhibits/diagrams may also be deemed inconsistent with the County General Plan Land Use Diagram "dotted line" designation (Plate LU-E) of this site for transit-oriented development design.

Regional Transit (RT) has submitted comments regarding transit service planning for the Plan Area:

> The California Traction Company (CTC) railroad right-of-way, along with Bradshaw and Florin Roads, are reflected in RT's Transit Master Plan's 20-year service framework for expanded transit services. The development of high-quality transit service to the North Vineyard Station area will be contingent upon many factors, including but not limited to:
>
> - Land uses within the corridor at residential densities and commercial intensities to sustain transit service;
> - Residential and commercial site designs to enhance access to transit facilities; and
> - Adequate capital and operating financial resources to construct and operate the transit mode and level of service desired.
>
> The Preferred Plan Alternative reflects that almost all (93%) of the land area designated as "residential" will be low density residential (1-7 du/ac). This type of low density, suburban development pattern typically does not support high-quality transit service. Low density, "leap-frog" residential subdivision, coupled with auto-oriented street/circulation patterns, lowers transit productivity and increases the operating costs to the transit operator.
>
> Therefore, given the development scenarios depicted in the Preferred Plan Alternative, it probably would not be cost-effective for RT to provide a high level of transit service in the future to the North Vineyard Station community. The DEIR should analyze the future transportation impacts of this new growth area assuming that a lower level of transit service (i.e., at best, hourly, or limited peak-period weekday bus service along one arterial, such as Florin/Bradshaw Roads, or the CTC right-of-way) might be provided to the North Vineyard Station area if adequate capital and operating funds are available.
>
> Additionally, if the CTC corridor is developed in the future as a multi-purpose travel way for walking, bicycling, and high-occupancy vehicle use, then consideration should be given to providing access to this right-of-way with pedestrian walkways at points other than major street intersections. This would improve access to the corridor and encourage its use, thereby reducing dependency on the automobile.

Transportation Plan

In addition to residential densities, street configurations and pedestrian/bicycle pathways are also factors that influence transit use. Streets that are designed in a grid-type pattern shorten distances, encourage walking and bicycling, and improve direct access to major streets where transit service could be provided.

The proposed plan utilizes a significant amount of curvilinear street patterns. Circuitous street configurations discourage pedestrian and bicycle access to transit streets. For example, the circuitous and indirect configurations of Streets #5, 9, 10, and 11 as shown on Plate PD-K (*PD-B of this document*) will not provide convenient access to the CTD corridor. If the CTC corridor is to be developed for alternative transportation purposes, then street and pedestrian/bicycle access to this corridor from the majority of the plan area should be designed to shorten walking/bicycling distances to this corridor. The DEIR should analyze the impacts of the transportation plan on the mode split of the North Vineyard Station Specific Plan Area.

The location identified for the future "transit station" along the CTC right-of-way may not be the most advantageous site if it is to be developed for transit park-and-ride purposes. This site is relatively isolated along the CTC right-of-way and is not located at the junction with an arterial such as Florin Road or a collector street, such as Waterman road. This type of design limits direct, convenient access to the proposed transit facility by other types of transportation modes, including automobiles. We recommend that areas to be utilized for park-and-ride/transit facilities to be located near a major arterial, such as Florin Road, or at least a collector street such as Waterman Road. The remaining potential transit stops along the CTC right-of-way could then be utilized primarily for pedestrian and bicycle access. (Anthony J. Palmere, Planning Manager)

Despite the fact that the no TOD sites are proposed within the Plan Area, the Specific Plan document includes a discussion on LU-26 stating: "The Plan embraces certain aspects of Policy LU-26 by creating a higher density mixture of land uses bounded by the railroad corridor, the Waterman Road extension, and Gerber Road" (p. 3-11 *5/29/97 Public Review Draft*). The plan may fall short of providing some of the more essential components of a TOD such as a core commercial area, mixed uses emphasizing a pedestrian oriented environment and housing with an average minimum density of 12 units per acre.

Land Use Policy LU-27 notes the primary concepts in LU-26 should be employed 'wherever feasible' in urban development areas. Again, LU-26 states that developments in areas designated as Urban or Neighborhood TODs shall be designed in a manner that conforms to

the concepts of transit-oriented development. The key to implementation of transit-oriented development design for the project would be the designation of at least one TOD site within the Specific Plan Area. Given the amount of vacant, unconstrained land located within the Plan Area, there does not appear to be any clear rationale for not identifying and designating a TOD site in the Plan Area as envisioned by the General Plan.

In order to comply with the General Plan Land Use Diagram "dotted line area" requiring future development to comply with transit-oriented development policy LU-26 and in order to comply with the Vineyard Area Conceptual Plan TOD locations and TOD Guidelines for Urban Growth Areas, the final General Plan exhibits/diagrams should be modified to include at least one or more distinct General Plan TOD land use designations. To comply with Policies LU-26 and LU-27, the proposed urban core area could be designated as an Urban TOD on the General Plan exhibits/diagrams.

Mixed Use Development: The stated objective of the County "Urban Growth Management Strategy" (Land Use Element p. 57) is to have "neighborhoods with a balanced mix of employment, neighborhood services, and different housing types". The following land use policies establish guidelines to be used when reviewing development proposals in order to promote neighborhoods with a balanced mix of land uses and services for a strong sense of community:

LU-10 Promote a better balance of employment, neighborhood services, and different housing types by reviewing development projects and the surrounding community and designing new projects wherever feasible so that they maintain or improve the mix of uses in the community.

LU-11 Specific Plans and Community Plans for areas within the Urban Service Boundary should provide a balance of employment, neighborhood services, and different housing types wherever feasible.

LU-12 Depending on its emphasis, a mixed use development should include the following proportions of different uses, shown as percentages of the site area:

Mixed Use Development Ratios per Policy LU-12			
Use	Commercial	Office	Residential
Retail	50-70%	10-30%	10-30%
Office	0-20%	50-70%	0-30%
Residential	20-40%	0-30%	50-80%
Public	10-30%	10-30%	10-30%
NOTE: Commercial uses refer to the LC and SC zones. Office uses refer to the BP and MP zones. Residential uses refer to the RD-5 through RD-50 zones.			

The County General Plan supports balanced, mixed use development. As noted in Policy LU-12, the balance mixture of land uses depends on the emphasis of the proposed development. In this case, the emphasis of the Preferred Plan and Plan Alternatives is residential development. According to LU-12, a balanced residential based development should include about 10-30% retail use/area, 0-30% office use/area and 10-30% public use/area. For the 1,595± acre Specific Plan area, compliance with the Policy LU-12 table would require a 160-480 acres of retail use/area, 0-480 acres of office use/area, and 160-480 acres of public use/area. As currently proposed, the Preferred Plan contains 28.6 gross acres (1.7%) of designated commercial, 10.1 gross acres (96%) of Business and Professional, and 214.7 acres (13.5%) integrated as "public use" (excludes transportation and drainage facilities).

The intent of Policies LU-10, LU-11, and LU-12 is also to enhance neighborhood character and minimize automobile travel by promoting mixed-use development that combines residential uses with commercial, office and public uses on the same site. Providing home, job, shopping and recreation destinations near each other will shorten most automobile trips, and eliminate some altogether by promoting foot and bicycle travel.

The Specific Plan document provides the following "Commercial Concept" statement:

> The North Vineyard Station Specific Plan includes a limited amount of commercial and business/professional development primarily for the convenience of future residents of the Plan and nearby areas. Commercial development designated within the Plan area is not intended to meet all of the retail commercial needs of Plan area residents and is not intended to include major shopping and employment facilities for the larger South County area. Instead, the Plan designates a small portion (less than 2 percent) of the total land area to commercial uses. In this way, planned commercial uses will serve the

frequently recurring needs of area residents for commercial goods and services. This limitation on new commercial development is consistent with the following General Plan policy:

> *Policy LU-34. Discourage the creation of excessive amounts of retail shopping facilities.*

The 32.3 net acres devoted to commercial use are distributed among seven sites, which range in size from one-half to 14.9 net acres. Each commercial site is located on a major street intersection. Included are two Neighborhood Commercial sites, three small Convenience Commercial sites, and two Business/Professional sites. (p. 5-1, *5/28/97 Public Review Draft*)

The Specific Plan designates less that 2 percent (38 acres) of the total land area to commercial uses. This is inconsistent with the County's Urban Growth Management Strategy and General Plan policies LU-11 and LU-12 to achieve a balanced mix of employment (commercial and business/professional) and residential uses.

Housing Element Consistency:

The General Plan Housing Element (July 1996) stated goal (p. 5) is:

> Promote an adequate supply of decent, safe and affordable housing to meet the needs of all residents of Sacramento County without regard to race, color, age, sex, religion, natural origin, family status or disability.

The Housing Element Housing Strategy establishes the following sub-goal:

> Provide an adequate supply of suitable sites for the development of a range of housing that varies sufficiently in terms of cost, design, size, location, and tenure to meet the housing needs of all segments of the County's population.

There are several objectives stated in the Housing Element that are directly applicable to the proposed Specific Plan:

Objective: Sufficient land to allow for the development of adequate new housing to ensure the availability of housing for all households in Sacramento County.

Objective: An adequate supply of land zoned for multi-family and single

family use enabling the future construction of a range of housing that varies in terms of cost, design, size, location and tenure to meet the future housing needs of all segments of the population.

Objective: Identify, and zone, adequate sites to accommodate the housing needs of all economic groups consistent with the County's share of the Regional Housing Need.

Objective: Efficient use of land resources through increased development yields and achievement of overall residential minimum density requirements

Objective: Affordable housing opportunities for low-income households equitably distributed in all communities through the unincorporated area of the County.

Adequate housing, both in supply and quality, provided in an efficient and affordable manner is the common theme throughout the aforementioned objectives. A significant portion of the sites planned at appropriate densities to accommodate lower income households (i.e., RD-20 and greater) will be provided in the County's New Urban Growth Areas, and planned through the preparation of a Specific Plan, Comprehensive Plan or large scale development application. Discussion in the Housing Element states:

> Table 3.1[*Table LU-4 of this document*] show that the Specific Plan, Comprehensive Plans and large scale development projects will yield a range of 4,820 to 5,440 units in the multiple family category. In addition, sites for 1,910 dwelling units will be made available form the designation of SC and LC commercial uses within these areas. The Specific Plans, Comprehensive Plans and large scale development projects will make available adequate sites for 6,730 to 7,350 very low income housing units by June 30, 1998.
>
> Even with the adoption of the Specific Plans, Comprehensive Plans and large scale development projects shown on Table 3.1 [*Table LU-4*], the County will still need to address a shortfall of 175 to 635 very low income dwelling units This additional shortfall in dwelling units will be addressed by permitting multiple family uses in specified commercial zones as a matter of right pursuant to Housing Element Program HE-5(b). A vacant land inventory prepared in March 1995 revealed a vacant land supply of approximately 567 acres zoned SC and LC.

In comparing the project Land Use Summary table (Table PD-1) to the anticipated multi-family dwelling unit yield (Table LU-4) for the various specific/comprehensive plans,

TABLE LU-4

ANTICIPATED MULTIPLE FAMILY DWELLING UNIT YIELD SPECIFIC PLANS & COMPREHENSIVE PLANS ADOPTED PRIOR TO JUNE 30, 1998

Plan Area	Acres Designated Multiple Family	Unit Yield (Range)	Acres Designated SC, LC	Unit Yield[1]	Total
East Antelope	0	0	4	NA	0
East Elk Grove	0	0	23	115	115
East Franklin	28-31	560-620	47	235	795-855
North Vineyard Stn.	31-35	620-700	28	140	760-840
Vineyard Springs	22-29	440-580	18	90	530-670
Poppy/Laguna Ridge	36-40	720-800	45	225	945-1,025
Sunrise-Douglas	72-80	1,440-1,600	189	945	2,385-2,545
Lent Ranch	15-20	300-400	18	90	390-490
Elliot Ranch [2]	44	740	14	70	810
TOTALS	**248-279**	**4,820-5,440**	**386**	**1,910**	**6,730-7,350**

[1] Unit yield assumes one-quarter of available acreage designated SC & LC multiplied by 20 (i.e., RD-20).

[2] The unit yield in the multiple-family column matches the total approved as part of the project.

Source: Sacramento County General Plan Housing Element, Revised July 17, 1996

North Vineyard Station appears to be able to accommodate multi-family units within the targeted range. However, it is important to note that the project Land Use Summary table assumed an average 18 dwelling units per net acre yield under the Multi-Family MFR/12-22 category to achieve the projected 637 multi-family units. Historically, projects have been built at the lower end of the density range rather than higher. Build out of the multi-family sites at lower densities could result in a shortfall of units compared to General Plan expectations. Furthermore, the expectation that 25% of the 28 acres of commercially zoned (SC & LC) land within the Plan Area will be developed for multi-family use at a density of 20 units per acre and yield an additional 140 units may be unrealistic. The Plan states that only a limited amount of commercial land is proposed, enough provide the necessary conveniences for Plan Area residents. The demand for commercial services in the area is likely to utilize all of the available commercial land. Given these factors, it is highly unlikely that the Plan will yield its expected share of multi-family units. The Plan's MFR/12-22 land use category is shown to correspond with the General Plan Medium Density Residential category which has a much higher density range of up to 30 units per acre. Expanding the Plan's density range to match that of the General Plan and increasing Plan area housing densities will also provide opportunities to apply TOD concepts and satisfy many Land Use Element policies.

Land Use Compatibility With Surrounding Uses:

The North Vineyard Station Specific Plan Area was established as an Urban Development Area under the 1993 General Plan for the purpose of accommodating projected growth in the County over the ensuing 20 years. The Urban Development Area category is defined in the General Plan as follows:

> The Urban Development Area (UDA) designation indicates where the County will conduct studies leading to leading to the appropriate configuration of urban land uses for the area. The UDA differs from the Agricultural-Urban Reserve designation in that development in the UDAs is anticipated within the next 20 year planning period.

Therefore, although the Plan Area and much of the surrounding properties are currently zoned for agricultural-residential and general agricultural uses, the conversion of this land for urban development was committed during the General Plan approval process and the related land use impacts were also acknowledged at that time. The evolution of the project area from rural setting to an urban one will result in some land use conflicts that, albeit temporary in some situations, could last for several years. Those choosing to maintain a rural lifestyle will feel the pressures of encroaching urbanization, while some urban dwellers may find adjacent agricultural practices to be annoying. Some small scale farming operations may

find some of their activities will have be curtailed or substantially modified in order to mitigate impacts to adjacent urban uses. Conversely, urban uses can bring undesirable influences to agricultural uses such trespass, vandalism, domestic pets, and traffic congestion.

For the North Vineyard Station Plan Area, the greatest potential for long term conflicts exist on the eastern and northeastern edges. The land immediately east (east of the extension of Vineyard Road) is designated Agricultural- Residential (1-10 du/ac) on the General Plan; the land to the northeast (east of Bradshaw Road, north of Florin Road) is designated General Agriculture (20-acre minimum). These areas are not planned for urbanization within the 20-year planning horizon of the General Plan. The proposed land use interface at these locations is Single Family Residential 1-3 units per acre; the lowest density land use category proposed in the Preferred Plan and Plan Alternatives. Landscape corridors 25 feet wide are proposed along both Florin Road and Vineyard Road. The setback distances provided by the landscape corridors and the width of the streets themselves, plus the intervening masonry sound walls to be installed for traffic noise mitigation should provide sufficient buffering between the urban/rural interface.

There are several existing and/or developed Agricultural-Residential (ag-res) lands located within the Plan Area that could benefit from Specific Plan buffering provisions, as suggested by General Plan Policy LU-42. Of particular concern, from a land use compatibility and buffering perspective, are the existing ag-res areas in the vicinity of the confluence of Elder and Gerber Creek. Of additional concern are the land use compatibility problems associated with the siting of the Preferred Plan 'Urban Core' immediately adjacent to existing and/or developed ag-res properties along Gerber Road and Bar Du Lane. General Plan Land Use Diagram designation of the Plan Area as an Urban Growth Area subject to TOD design guidelines, does not necessarily preclude buffering, protecting and actually incorporating existing ag-res areas into the proposed Specific Plan. Specifically, General Plan Policy LU-43 states that "Community and Specific Plans prepared for urbanizing areas may provide for additional Agricultural-Residential areas provided they are functionally integrated with other urban uses in the context of the Plan". The "Modified Core" or "Core Relocation Option" was introduced for consideration to address the land use compatibility concerns raised by the resident of the Bar Du Lane ag-res neighborhood. In the core relocation option, the major focus of the more intensive uses would be shifted to the Florin/Bradshaw Road intersection.

In conclusion, potential land use compatibility impacts associated with holdover agricultural-residential or general agricultural uses located both within and just outside the Urban Development Area ***can be mitigated to less than significant levels*** through implementation of General Plan policies, proposed Specific Plan policies and established Zoning Code development standards.

Recreation/Open Space: The Preferred Plan and Plan Alternative General Plan

exhibits/diagrams (Plates PD-G through PD-J) designate only one site for Recreation/Open Space land use. This is not consistent with the proposed Preferred Plan and Plan Alternative land use diagrams (see Plates PD-B through PD-E) which specify recreation/open space uses in several locations. The proposed General Plan Recreation land use site corresponds to the 30± acre community park proposed at the northeast corner of the Central California Traction Railroad and Waterman Road intersection, beneath the electric transmission lines. Absent from the proposed General Plan exhibits/diagrams is a Recreation/Open Space land use designation that corresponds to the proposed drainage parkway areas along Elder and Gerber Creeks, the storm detention basin sites, and the Bradshaw Ranch Golf Course on Bradshaw Road.

In order to ensure consistency between the Preferred Plan and Plan Alternatives land use plans and the proposed General Plan diagrams with regard to Open Space land uses, the final General Plan Diagram shall be modified to include a Recreation/Open Space designation that corresponds to the proposed drainage parkway areas, storm detention basin sites, and the Bradshaw Ranch Golf Course on Bradshaw Road.

It should also be noted that the proposed 30± acre Community Park site identified on the Preferred Plan and Plan Alternatives within the electrical transmission corridor does not comply with the Southgate Parks and Recreation District park requirements. The District has already rejected this Community Park site and related proposed Open Space Plan altogether and has endorsed a separate Open Space Plan for the Plan Area (see Public Services discussion). The final General Plan Diagram should be modified to include a Community Park site or sites that satisfies the Southgate Park District's requirements or otherwise resolves differences between the proposed project and the desires of the service provider.

The Preferred Plan and Plan Alternatives General Plan exhibits/diagrams are also generally inconsistent with the open space areas depicted on the General Plan 'Vineyard Area Conceptual Plan discussed previously. The Vineyard Area Conceptual Plan includes wide 'Open Space' areas and corridors along Elder/Gerber Creeks and the entire electrical transmission line corridor. Most of the creekside open space includes the existing 100-year flood plain. An overlay of the Vineyard Area Conceptual Plan on the Plan Area Property Ownership Map highlights the fact that most of the North Vineyard Investors property on the south side of Florin Road and east of Elder Creek and the railroad tracks, is designated for Open Space use on the conceptual plan for the area. The entire Conceptual Plan Open Space width from Elder Creek to the east side of the electrical transmission lines is about 1200 feet wide. In general, the Open Space widths along Elder and Gerber Creeks range from the 1,200 feet as noted above to about 300 to 600 feet on average.

Review of the proposed project shows no General Plan Open Space land use designations along Elder Creek, Gerber Creek, and/or the electrical transmission lines. The only

designated recreation area, is the proposed Community Park site which the Southgate Parks and Recreation District has rejected. The final General Plan Diagram should be modified to include distinct General Plan Open Space and/or Recreation land use designations along the parkway and flood plain corridors of Elder and Gerber Creek, and a Community Park site or sites that satisfies the Park District requirements.

Summary of Land Use Impacts:

The proposed General Plan Diagrams (Plates PD-G through J) for the Preferred Specific Plan, the 10% and 15% Reduced Density Plan Alternatives, as well as the Modified Core Alternatives result in predominantly low density residential throughout the plan area.

> **The Preferred Plan** provides for the construction of 6,339 dwelling units. Of these dwelling units 5,260 (83%) are single family units, 442 (7%) are medium density units, and 637 (10%) are multi-family dwelling units.
>
> **The -10% Plan Alternative** provides for the construction of 5,759 dwelling units, or 580 less dwelling units than the Preferred Plan. This reduction of dwelling units over the Preferred Plan conflicts with the General Plan Land Use, Growth Management, and New Growth Area Goals noted previously. Of these dwelling units 5,120 (89%) are single family units, 637 (11%) are multi family units. This alternative proposes no medium density units.
>
> **The -15% Plan Alternative** provides for the construction of 5,384 dwelling units, or 955 units less than the Preferred Plan and a reduction of 373 single family units from the -10% Alternative. Of these proposed numbers of dwelling units 4,747 (88%) are single family units, and 637 (12%) are multi-family units. This alternative proposes no medium density units, or other housing type.
>
> The **Modified Core Alternative** moves the core area on both the 10% and -15% alternative from along the railroad tracks and Gerber Road to along Florin Road and Bradshaw Road. This consideration of shifting the core area was primarily prompted by concerns expressed over the intensification of land uses adjacent to the established agricultural residential neighborhood (Bar du Lane) on the south side of Gerber Road.

The Preferred Plan and Alternatives may not meet several General Plan goals, objectives and policies which are intended to maximize efficiency in land use and improve community identity as the projected growth needs of the County are accommodated during the 20-year planning horizon. The densities and land use patterns proposed are similar to the low density development typical other suburban communities. The Preferred Plan and Alternatives are

land consumptive and auto-oriented, which tends to exacerbate traffic and air quality impacts; however, these impacts were acknowledged during update of the County General Plan when the subject Specific Plan area was designated for growth. In order to minimize further environmental degradation, it is essential that the projected growth needs of the General Plan are met within approved urban growth areas. If the designated growth areas are not developed to their full potential, direct, adverse physical impacts to the environment could occur through the further loss of agricultural lands and open space/natural habitat areas.

In conclusion, potential land use compatibility impacts associated with holdover agricultural-residential or general agricultural uses located both within and just outside the Urban Development Area ***can be mitigated to less than significant levels*** through implementation of General Plan policies, proposed Specific Plan policies and established Zoning Code development standards.

Land use impacts resulting from non-compliance with General Plan goals, objectives and policies are considered ***potentially significant and adverse.*** Mitigation of potential land use impacts to a less than significant level would required redesign of the Plan area to be consistent with the intent of the General Plan for new growth areas. This issue is discussed further in the Alternatives section of this document.

Mitigation Measures.

In order to ensure consistency between the proposed project and the County General Plan Policy Document and related General Plan Land Use Diagram the following Land Use mitigation measures are recommended:

LU-1 The final General Plan Diagram should be modified to include at least one General Plan TOD land use designations/locations.

LU-2 Consideration should be given to designating a higher density multi-family residential category such as MFR/23-30 which still falls with the General Plan Medium Density Residential category (13-30 du/ac).

LU-3 The final General Plan Diagram shall be modified to include a Recreation/Open Space designation that corresponds to the proposed drainage parkway areas, storm detention basin sites, and the Bradshaw Ranch Golf Course on Bradshaw Road, in order to ensure consistency between the proposed land use plans and the proposed General Plan diagrams with regard to Recreation/Open Space land uses.

LU-4 The final General Plan Diagram shall be modified to include a Community Park site or other park sites that resolve differences between the proposed specific plan and the Southgate Park District's requirements.

Public Services

The project site is located in a semi-rural area of unincorporated Sacramento County where some urban public facilities and services are not currently in place. Most of the developed parcels in the area are agricultural-residential, utilizing private wells and septic systems. Public services and facilities such as schools, libraries and parks are spaced at considerable distances due to low population and minimal service demands.

The following is a list of the basic public services provided in the project area and the agencies responsible for providing those services:

Water Supply	Sacramento County Water Maintenance District Sacramento County Water Agency
Sewer Service	Sacramento Regional County Sanitation District
Electric Service	Sacramento Municipal Utility District
Natural Gas Service	Pacific Gas and Electric Company
Fire Protection	Florin Fire Protection District
Police Protection	Sacramento County Sheriff's Department
Schools	Elk Grove Unified School District
Library Services	Sacramento Public Library
Parks	Southgate Recreation and Park District
Solid Waste Disposal	Sacramento County Solid Waste Management Division

The following is a discussion of public facilities and service supply/demand issues related to the project. Some of the service providers have submitted comments pertaining to their ability to provide service to the project, including recommended conditions of approval that must be satisfied by the developer before service can be adequately provided. It should be noted that public facility financing, drainage, water supply and sewer service are discussed in separate sections of this EIR.

Energy Facilities and Services

The Sacramento Municipal Utility District (SMUD) provides electric service to the project site and most of the Sacramento metropolitan area while the Pacific Gas and Electric Company (PG&E) provides natural gas service in Sacramento County and 48 other surrounding counties.

Staff of SMUD (E. Teays, March 28, 1996) has reviewed the project proposal and offered the following comments:

> "SMUD is planning to construct a new electric distribution substation along Bradshaw Road between Florin Road and Gerber Road.
>
> A 69kV overhead pole is planned for construction along Bradshaw Road.
>
> The applicant or other responsible parties should address and resolve project related electrical facility issues through close coordination with SMUD in project planning and development. Coordination with SMUD should occur and any required agreements should be established prior to issuance of necessary permits or approvals for the project."

Staff of PG&E (L. Norton, April 4, 1996) has reviewed the project and provided the following comments:

> "PG&E operates and maintains 2 separate 230 kv tower lines crossing through the Plan area. The easements for these tower lines have restrictions for buildings, structures and height limitations for lighting and landscaping. Should any of the Plan roads or future development plans require grading that diminishes the minimum ground to conductor clearance on these tower lines, the project proponent will be liable for costs associated with correcting the ground clearance infraction.
>
> To promote the safe and reliable maintenance and operation of utility facilities, the California Public Utilities Commission (CPUC) has mandated specific clearance requirements between utility facilities and surrounding objects or construction activities. To ensure compliance with these standards, project proponents should coordinate with PG&E in the development of their plans. Any proposed development plans should provide for unrestricted utility access and prevent easement encroachments that might impair the safe and reliable maintenance and

operation of PG&E's facilities...

> ...Expansion of gas distribution and transmission lines and related facilities is a necessary consequence of growth and development. In addition to adding new gas distribution feeder mains, additions needed to accommodate additional load on the gas system could include facilities such as regulator stations, odorizer stations, valve lots, distribution and transmissions lines."

Project impacts to existing energy facilities are expected to be less than significant with the coordination of energy providers, planners and developers. Future development of property within the Plan area will be subject to project specific review and the implementation of any conditions deemed appropriate at that time. With implementation of project specific conditions and coordination with providers, impacts to energy facilities and services are considered less than significant.

Fire Protection.

The Plan area is located within the service boundaries of the Florin Fire Protection District. The Public Review Draft of the Specific Plan (1997) describes the level of service provided by the Fire District as follows:

> The Insurance Services Office (ISO) rating is the recognized classification for a fire department or district's ability to defend against major fires. A rating of 10 generally indicates no protection, whereas an ISO rating of 1 indicates high firefighting capability. The District has been given an ISO rating of 3 in areas where a water distribution system and hydrants are in place and an ISO rating of 8 in "unwatered" areas.

Effective January 1997, the District has contracted with the American River Fire District for all fire services. The nearest stations are:

Station 50 - located on Gerber Road, near Elk Grove-Florin Road;

Station 52 (Reserve - contains no staff or apparatus) - located on Elder Creek Road, near Bradshaw Road; and

Station 55 - located on Excelsior Road, near Gerber Road.

Currently, emergency calls from within the Plan area are handled from Station 55 and Station

50, and no new facility within the Plan area is needed. With the development of the North Vineyard Station project, increased emergency call volume will require re-opening Station 52. This need will arise long before buildout. However, it is anticipated that the existing Station 52 will not serve the needs of the Plan upon buildout. The existing facility will need to be replaced with one that will house five firefighters and three pieces of apparatus. The American River Fire Protection District (M. Cooper) estimates the total cost for the fire station, engine/water tender, wildland interface engine, and ambulance at $1,795,000.00 and requests that, because development of North Vineyard Station will prompt the need, the developers should be responsible for the entire amount.

Future development of property within the Plan area will be subject to project specific review and the implementation of any conditions deemed appropriate at that time. With implementation of project specific conditions and coordination with providers and planners, impacts related to fire protection and emergency rescue service are considered less than significant.

Sheriff's Patrol Services.

The Sheriff's Department provides specialized law enforcement services to Sacramento County and local police protection to the unincorporated area. Local police protection includes response to calls and trouble spots, investigations, surveillance, and routine patrolling.

Demand for local police protection exceeds the supply of resources. Demand results from population growth; increased rates of crime, particularly major crimes and crime associated with use and sale of drugs; and services mandated by the State and the Courts. Supply of resources is linked primarily to the County General Fund. Growing demand and a relatively slower growing resource base has led to an inability to maintain historic levels of service. While population and the number and severity of crimes has increased substantially in the past ten years, the number of patrol officers has increased less than one percent.

The reallocation of resources has led to a reduction in local police protection services. The Sheriff's Department no longer provides patrol and investigative service in response to all citizen complaints. Case acceptance criteria are used to screen citizen complaints, set priorities for response, and to determine how staff will be assigned. Felonies take priority over misdemeanors, and crimes against persons take property over property crimes. Visits on residential burglaries, noise disturbances, vandalism, vehicle thefts, vehicle burglaries, and preventive patrol are no longer provided.

The Plan area is in Sheriff's Department District 7, which encompasses 535 of the total 880 square miles in the unincorporated area of Sacramento County. The Public Review Draft of

the Specific Plan (1997) indicates the following regarding law enforcement services and standards within the Plan area:

> The Sheriff's Department "processing center" is located at Marketplace 99 shopping center, at the corner of Bond Road and East Stockton Boulevard. The center is staffed by one lieutenant, three community-oriented policing officers and volunteers. The purpose of the center is to provide a place for the public to file complaints and reports and ask questions.
>
> The Department's adopted service standard is one patrol officer per 1,000 residents. In 1994, there were insufficient patrol officers to meet the Department's service standard on a County-wide basis, including District 7.

In 1994, the Sheriff's Department opened the South Patrol Station on the corner of Waterman Road and Bond Road in the Elk Grove community. This station provides patrol and investigative services, in part, to the Plan area.

Since the Specific Plan integrates residential, commercial and open space uses, there is the potential for locations to be created (behind commercial centers, dark areas of parks, throughways, etc.) where attention to crime prevention could enhance the Department's ability to patrol efficiently and otherwise deter criminal activity and improve public safety. The Public Review Draft of the Specific Plan (1997) addresses these issues:

> Because of the uncertainty that Sheriff's Department patrol officer service standards will be achieved, particular attention is being given to designing the North Vineyard Specific Plan in a manner that will reduce the demand for patrol officers. Design elements that address public safety are described throughout the
>
> Plan and include, but are not necessarily limited to, streets, open space, landscaping, and lighting. The use of design elements within the Plan area to enhance security is consistent with the following General Plan policy:
>
>> *Policy PF60.* Design neighborhoods and buildings in a manner that prevents crime and provides security and safety for people and property; when feasible.
>
> A specific example of how the Plan adheres to this policy is found in the design of Drainage Parkways. Particular attention has been given to ensuring that these open space areas are visible from adjoining areas and easily accessible by law enforcement personnel. As a further means of achieving consistency with this policy, all proposed development plans are reviewed by the Sheriff's Department

to ensure that public safety concerns are adequately addressed.

The proposed project will contribute to an increased workload for the Sheriff's Department due to an increasing demand for service. The Sheriff's Department Crime Prevention Unit staff (T. Manzari) has provided the following recommendations to reduce service impacts for any future development in the Plan area:

HOME DESIGN

- Homes that have attached garages with side or rear doors shall have solid core or metal covered doors with dead bolt locks.

- Sky light side panels next to entrance doors will not be on the same side as the lock side of the door. Only one panel per door, located on the hinge side.

- All external door frames, including the side garage, shall have screws minimum 3 inches long in the strike plate. Strike plates should have four screws minimum.

- The Sheriff's Department highly recommends that homes be designed with the garages even with or set back from the front of the house. This will improve visibility from the inside to the entire block. Homes with covered front porches also promotes resident involvement with neighbors and reduces crime. We will endorse these two measures in your marketing plans.

STREET AND CURBS

- *VERTICAL CURBING INSTEAD OF ROLLED CURBS.* Vertical curbing is necessary to reduce "lawn jobs" and illegal parking on sidewalks. Cars parked on sidewalks cause children on bikes, skate boards, etc. go into the street to get around them and other problems.

- *NO DOG-LEG OR HIDDEN PARTS OF CUL-DE-SACS.* Patrol cars should be able to see entire street from intersection. Large radius curves will be permitted if they meet the visibility from intersection criteria.

PARKS, SCHOOLS AND OPEN AREAS

- Homes should face the above open areas with a street as a buffer and not back up against these areas.

- If homes must be adjacent to open areas, then a vertical wrought iron or decorative iron fence will be installed. This is to enhance viewing of public places and making it more difficult to climb over the fence. These homes are more susceptible to home burglaries.

PEDESTRIAN EASEMENTS

In the interest of public safety, we recommend that either a public street be installed or the access be eliminated. The City and County of Sacramento have been closing up these very types of walkways because of related crime and nuisance problems. Faulty design problems can be with us for over fifty years. If a walkway must be installed, the final design must be approved by the Crime Prevention Unit of this agency. Some of the design features will include the following:

1. A twelve foot wide, hard surface, all weather pavement will be installed. Access will be open at both ends to enable unrestricted pursuit by Sheriff's vehicles.

2. Proper curb and signs at both entrances prohibiting parking in front of the passage way. A standard eight inch vertical curb, painted red and signs will discourage most unwanted traffic.

3. Night illumination of 1.5 foot candles minimum maintained along the foot walk. Fixtures will be vandal resistant and have shields to prevent unwanted light directed into adjacent homes.

4. Any homes along the easement will be orientated to face the pathway. An open type of fence shall be installed for visibility. A vertical wrought iron or ornamental iron fence is highly recommended.

5. A funding mechanism and/or CC&R's in place to provide costs for lighting and maintenance, road and fence repair, and enforcement of parking laws.

Although law enforcement service is available to serve the Plan area, staffing will not meet service standard levels. To assist in reducing crime levels and the strain on law enforcement resources, the Plan area should be designed with safety as a prime consideration.

Coordination with the Sheriff's Department, planners and developers for future development with the Plan area will lessen impacts to police protection services.

Schools.

The project site is served by the Elk Grove Unified School District. The Public Review Draft of the Specific Plan (1997) indicates that:

> Although there are no schools presently within the Plan area, the District Master Plan identifies North Vineyard Station West as one of 15 elementary schools needed within the District by the year 2005. The nearest school is Maeola Beitzel Elementary School, located south of Vintage Park Drive and east of Elk Grove-Florin Road. The Plan area is within the Florin High School attendance area; however, attendance boundaries for high schools, as well as elementary and middle schools, are subject to periodic adjustment by the District.

District staff (S. Pendleton) has reviewed the proposal and has offered the following comments:

> "The comments of the EGUSD are based on Attachment 'P', NVSSP Policies and Development guidelines, specifically School Facilities, on pages 12-13:
>
> > NVS-85. Provide the number, type, design, and location of school facilities consistent with the Elk Grove Unified School District's Master Plan, and
> >
> > NVS-86. New elementary schools' sites should be designated adjacent to existing or proposed neighborhood or community park sites and designed to promote joint use of both facilities.
>
> The total Preferred Plan area allocation of 6,339 dwelling units can be expected to yield 2,387 elementary students, 654 middle school students, and 1,053 high school students. Two elementary school sites of 10 net usable acres each should be established adjacent to park sites. The two alternative plans have the same requirements for two elementary sites. One site should be located east of Bradshaw Road and the other west of Bradshaw Road."

As shown on the Proposed Parks and Public Use Plan (Plate PS-A), two elementary school sites, one east and one west of Bradshaw Road and each adjoined to a neighborhood park, are proposed within the Plan area.

The Public Review Draft of the Specific Plan (1997) includes the following policies relative to school facilities as indicated in the Sacramento County General Plan:

Policy PF-28.	Schools shall be planned as a focal point of neighborhood activity and interrelated with neighborhood retail uses, churches, parks, greenways and off-street paths whenever possible.
Policy PF-29.	New elementary schools in the urban area should be planned whenever possible so that almost all residences will be within walking distance of the school (one mile or less) and all residences are within two miles of a school.
Policy PF-33.	New schools should link with planned bikeways, pedestrian paths wherever possible.
Policy PF-30.	New elementary and junior high schools shall be planned adjacent to neighborhood and community parks whenever possible and designed to promote joint use of appropriate facilities.
Policy PF-37.	Development projects shall not be approved unless the hearing body finds that provisions for reservation of school sites are adequate to meet the needs of the school district.
Policy PF-38.	Specific Plans shall show the location of future school sites based upon adopted school district master plans and criteria in the General Plan, and shall include assurances of funding for acquisition.

Future development has the potential to impact school facilities in the area due to increased enrollment. However, until specific development proposals are made, it is difficult to accurately assess impacts to specific school sites and/or facilities. Future development of property within the Plan area will be subject to project review and the implementation of any conditions relative to school funding deemed appropriate at that time. Funding for schools

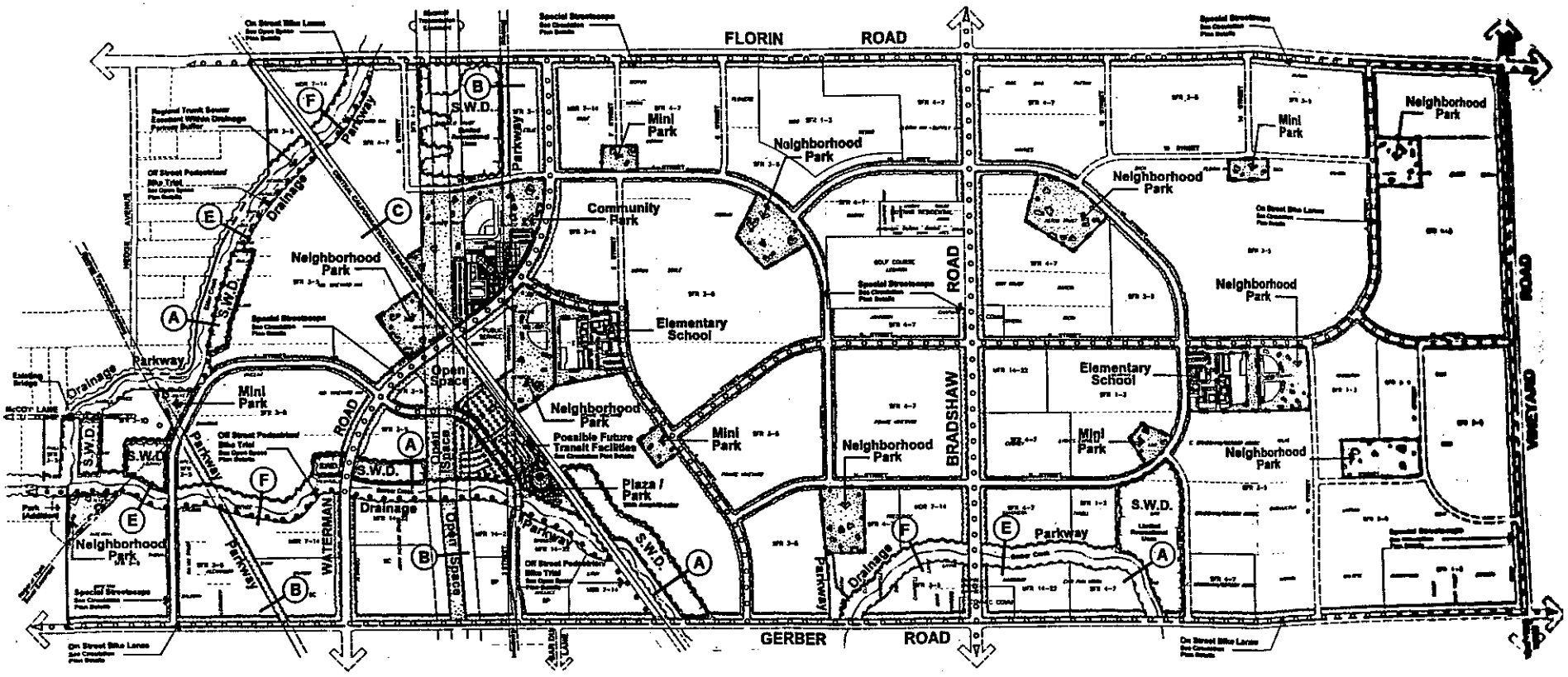


PLATE PS-A

Proposed Parks and Public Use Plan

and other public facilities is addressed in the Public Facilities Financing section of this EIR.

Library Services.

The Plan area is served by the Sacramento Public Library. The nearest existing facility is the Southgate Library located on 65th Street, south of Florin Mall Drive. According to the Public Review Draft of the Specific Plan (1997):

> The Library Master Plan makes no provision for a library in the Plan area. However, the 4.9 acre Public Services site could accommodate a library branch. Funds will be collected and designated for library use. Section 10.0 Capital Improvement Program and Financing Strategy describes financing relative to library facilities.

The Public Review Draft also includes the following policies for library service:

1. Encourage the provision of adequate library facilities in convenient proximity to Plan area residents.

2. A branch library shall be accommodated within the Public Services site, if deemed appropriate by the County.

Implementation of the above Specific Plan policies should help to minimize impacts to surrounding existing libraries from the development of the Plan area.

Parks and Open Space.

The local governing body for management of public park land in the Plan Area is the Southgate Recreation and Park District. The Plan Area encompasses 1,590 acres and is bounded by Florin Road to the north, Gerber Road to the south, the northerly extension of Vineyard Road to the east, and generally by Elder Creek's north and south forks.

The Public Review Draft of the Specific Plan (1997) indicates that currently there are no parks within the boundary of the Plan Area. The nearest existing park facilities are Churchill Community Park, located one mile south of the Plan Area, and Sunrise-Florin Park, located one mile to the west. Park facilities planned in the vicinity of the area are George P. Dunmore Park, located one-half mile to the east on Excelsior Road, Laguna Creek Trail system to the southeast, and a golf course proposed within the Vineyard Springs area. Park land requirements are set forth as follows:

The Southgate Recreation and Park District requires park land dedication in the amount of 5 acres per 1,000 population. On the basis of the projected population of the Plan at build-out, a total of 82.4 acres of park land will be required for dedication to the Southgate Recreation and Park District.

As shown on Plate PS-1, there are nine Neighborhood Parks (the text of the Public Review Draft indicates that there are eight planned neighborhood parks), five Mini Parks (the text of the Public Review Draft indicates that there are four planned mini parks), the Plaza Park, and a Community Park. The Public Review Draft of the Specific Plan (1997) defines these parks as follows:

Neighborhood Parks

A total of 58.9 acres (including 3.0 acres of powerline easement) are devoted to Neighborhood Park sites, which range from 3.0 to 10.1 acres in size. The eight sites within the Plan area are located so that all residential neighborhoods are within convenient walking distance of a Neighborhood Park. Two of the park sites area adjacent to elementary schools, thus allowing for joint-use of certain recreational facilities.

Facilities expected to be included in Neighborhood Parks include some or all of the following:

•Tot lot and children's play area with adjacent seating
•Family picnic area with shade shelter
•Turf space large enough for ball fields and soccer field
•Court games: tennis, full court basketball, turf or sand volleyball, handball
•Free play area
•Storage area
•Picnic table(s) with tree shading
•On-site parking in limited instances
•Security lighting
•Restroom
•Day Care Facility (when located adjacent to a school)

Mini Parks

Four Mini Parks, each approximately two acres in size and totaling 8.2 acres, are distributed throughout the Plan area. Mini Parks are intended primarily for use by surrounding neighborhoods and are not designed for organized sports events.

Facilities expected to be included in Neighborhood Parks include some or all of the following:

- Tot lot with adjacent sitting area
- Picnic table(s) with tree shading
- Multi-use sports court
- Tennis, basketball, or sand volleyball courts
- Open grass/multi-purpose game fields
- Security lighting

Plaza Park

The 2.9 acre Plaza Park, located adjacent to the Transit Center, will be specifically designed to complement the Transit Center and create a pleasant environment for transit users. Turf and pavement areas will accommodate occasional exhibits and performance art.

Community Park

The 27.2 acre Community Park site is intended to serve residents throughout the Plan area and will include organized recreation activities.

Facilities expected to be included in Neighborhood Parks include some or all of the following:

- Group picnic areas to accommodate large and small groups, all shaded, some with shelters
- Large outdoor shelter for picnic use, group use, and programming
- A mix of youth and adult ball fields (softball, skinned ballfields, and soccer fields)
- Basketball courts, lighted tennis courts, and other sports facilities
- High quality play areas, separated for pre-school and older children with a variety of play experiences and adjacent sitting areas
- Water play, as appropriate
- Drinking fountains
- Clearly defined park entry with identified theme
- Storage and maintenance service facility
- Restroom/Concession building
- On-site parking, per County Code
- Security and sports facility lighting

(Note: trees and structures may be limited in high voltage powerline easements.)

Future development has the potential to impact existing and planned park site facilities in the area, as well as creating the need for additional facilities, due to increased resident population. However, until specific development proposals are made, it is difficult to accurately assess impacts to specific sites and/or facilities. However, no environmentally significant impacts to recreational opportunities for existing and future rendents are expected. The Southgate Recreation and Park District Board of Directors has provided the following general comments regarding the Specific Plan:

"1. Park Dedication

As development occurs within the plan area, appropriate park dedication pursuant to the County of Sacramento Subdivision Map Act shall be required. While approximate locations for park sites are identified on the Specific Plan, it is understood that exact locations and/or configurations of individual sites may change as development occurs.

2. Joint Uses

The Southgate Recreation and Park district supports coordination with other agencies to accomplish joint uses for park sites. This includes but is not limited to joint uses with schools, libraries, fire stations, detention basins, and drainage parkways.

3. Landscape Corridors Along Major Roadways

The Southgate Recreation and Park District has continually supported the dedication and improvement of landscape corridors with pathways along roadways to provide not only improved aesthetics between roadways and neighborhoods, but to also provide off-street transportation corridors for pedestrians and bicyclists. The District supports the dedication of 30 foot wide landscape corridors with 10 foot bike lanes along Vineyard, Gerber, Florin, Waterman, and Bradshaw Roads. These should be required and constructed concurrently with development in the plan area, and then dedicated to the District for ongoing maintenance.

4. North Vineyard Station Financing Plan

The Southgate Recreation and Park District wishes to participate in formulating the Park Component to the Financing Plan which will be associated with the North

Vineyard Station in order to accomplish basic improvements to parks and recreational facilities contained in the plan.

5. Drainage Parkways/Detention Basins

   The District endorses the concept of allowing for bicycle and pedestrian trail systems within the drainage parkway areas as defined on the plan. These systems become amenities to the community by providing recreational opportunities and creating logical off-street circulation through the plan area. Additionally, detention basins offer opportunities for passive park uses. Development occurring adjacent to drainage parkway area or detention basins should be required to improve sections of the trail system or detention/park areas, and dedicate them to the District for ongoing maintenance." (Southgate Recreation and Park District Resolution #95-107)

Solid Waste Disposal.

The Sacramento County Landfill is the primary landfill for all solid waste generated within the unincorporated areas of the County. This 650± acre landfill, located at Kiefer Boulevard and Grant Line Road, is a Class II-2 facility, meaning that it can accept wastes that consists of chemically biologically decomposable material which will not significantly affect groundwater quality; no hazardous materials are allowed in this facility. The landfill is estimated to reach its capacity in the year 2001. The County, however, is seeking an expansion permit to provide landfill services through the year 2035.

The Public Review Draft of the Specific Plan (1997) indicates that "on the basis of the project Plan area residential population only, ultimate development of the Plan area can be expected to result in 44.1 tons of solid waste per day. No solid waste transfer of disposal facilities are proposed within the Plan area."

The Public Review Draft also suggests the following policies regarding solid waste disposal within the Plan area:

1. Recycling of residential and commercial solid waste should be promoted and encouraged within the Plan area.

2. Residential developments shall be designed to facilitate the use of automated solid waste collection trucks.

3. All residential project shall be designed so that solid waste containers can be hidden from street view.

Implementation of the recommended policies will ensure that impacts from solid waste disposal resulting from development within the project area will be less than significant.

Public Facilities Financing

The NVSSP area is designated as an urban growth area in the County of Sacramento General Plan. A land use plan has been prepared to accommodate future development while corresponding public facility master plans have been prepared to identify the major facilities required for NVSSP to develop. This chapter discusses the NVSSP Financing Strategy which identifies the major infrastructure improvements necessary to support the proposed level of development, analyzes phasing constraints, provides the costs per acre for infrastructure categories, and identifies existing and potential funding sources.

State Planning and Zoning Laws (California Government Code) require specific plans to identify in detail the essential infrastructure and services needed to support the land uses described in the plan, as well as a program of implementation and financing measures necessary to carry out those improvements (Section 65451).

The project site is not included in any existing Public Facilities Financing Plan area and will therefore require a financing strategy to fund public facilities needed to serve new development in the Plan Area. The requirement for a financing strategy is established by Policy LU-8 of the County General Plan, which states:

> *Policy LU-8. Infrastructure financing plans which specify the extent, timing, and estimated cost of all necessary infrastructure shall be approved by the Board of Supervisors, together with the approval of zoning for any urban uses in urban growth areas. The resulting financing mechanisms shall be implemented prior to the approval of all entitlements in urban growth areas.*

Because the NVSSP does not include any rezoning, a financing plan is not required to be part of the project. In fulfilling this requirement to establish a funding mechanism for public facilities within the Plan Area, the proposed Specific Plan includes a financing strategy that establishes a policy framework for the funding of public improvements and infrastructure required to serve new development in the Plan Area. The purpose of the proposed financing strategy is to lay the ground work for the NVSSP Public Facilities Financing Plan (PFFP), which is yet to be completed, and to give the Board of Supervisors sufficient information to make the General Plan/Community Plan level decision. The financing plan to follow will expand upon the financing strategy and provide greater detail on the phasing of improvements and analyze recommend financing mechanisms.

The Public Infrastructure Planning and Financing Section (PIPFS) will provide input during the formulation of the Financing Strategy. After subsequent cooperative review by the Department of Planning & Community Development and Public Works Agency, the Financing Strategy will go through the public hearing process as a component of the Specific Plan project.

Financing Strategy.

The Financing Strategy, which is currently being prepared, is a a stand-alone document and will considered by the Board of Supervisors along with the Specific Plan. The analysis and conclusions presented in the Financing Strategy will be summarized in Chapter 10 of the Specific Plan.

The purpose of the Financing Strategy is to:

a) establish a policy framework for financing the required major public infrastructure;

b) identify the major roadway, storm drainage, sanitary sewer, water supply, park improvement, fire protection, library, school, and transit facilities required for the specific plan area to develop;

c) estimate the costs for the identified required major facilities;

d) present the cost per acre and the cost per dwelling unit equivalent for each facility category;

e) identify phasing constraints of the required major facilities;

f) identify existing funding sources to finance the required major infrastructure and identify the infrastructure components that currently do not have a funding source;

g) identify a range of potential strategies to fund the unfunded major required public facilities.

The components of the Financing Strategy are as follows:

Capital Improvement Programs (CIP) - The Financing Strategy will include a CIP which is separated into major public facilities categories. The portion of the CIP for each public facilities category lists the major public facilities necessary for development of the Specific Plan area and the associated costs. The individual CIPs also include exhibits showing the location of project listed in the CIPs. The CIP projects are derived from the detailed technical studies that were prepared for the Specific Plan.

Phasing - The approach that the PFFP will take in examining the phasing of facilities will be described in the Financing Strategy. The Financing Strategy will discuss phasing issues for each facility category and how they may affect the financing

decision. Critical phasing constraints that limit possible funding strategies will also be identified.

Costs - The Financing Strategy will summarize the Specific Plan land uses in terms of the total acres and potential development base per land use category. The cost per acre and the cost per dwelling unit equivalent for each facility category will be presented.

Public Facilities Financing Plan Matrix - The Financing Strategy will include the Public Facilities Financing Plan Matrix which is an overall summary of the financing plan that shows the major facility categories, the costs for each major facility category, and existing and proposed funding sources.

Analysis of Proposed Financing Mechanisms - The Financing Strategy will identify a range of potential funding sources for facility components for which there is no identified funding sources. The Financing Strategy will also discuss potential solutions for any identified constraints to facilities to be funded by existing programs. Potential funding sources that will be described in the Financing Strategy include, but are not limited to, development fee programs, a Mello-Roos Community Facilities District, an Assessment District, and participation in other funding sources including local, state, and federal programs.

Financing Plan.

A financing plan will be required prior to the approval of any rezone within the NVSSP area. The Financing Plan will build upon the Financing Strategy and will include the following:

Phasing Analysis - Phasing requirements for the identified major public facilities will be address. The phasing analysis will identify the priority of CIP items in relation to each other and the level of development at which each CIP project is required. Critical facility requirements that are potential constraints to development will also be identified.

Land Use - The Financing Plan will also describe the Specific Plan land uses in terms of the total development base. A projected absorption schedule for each land use category will be included.

Analysis and Recommendation of Financing Mechanisms - Based upon the facilities costs identified, the nature of the facility, the land uses, projected absorption, and phasing requirements, the Financing Plan will recommend the implementation of one or several funding strategies.

Impacts.

The specific plan contains the following policy to address the issue of public services and infrastructure needs:

> NVS-74. Provide and maintain an adequate level of public service, through the preparation of an Infrastructure Master Plan and a Capital Improvement Plan, to meet the needs of local residents.

The project includes three planning alternatives for the Specific Plan Area representing residential holding capacities of 6,339 dwelling units (Preferred Specific Plan), 5,759 units (-10% Alternative Plan), and 5,384 units (-15% Alternative Plan). As noted in the Project Description section of the EIR, the land use plans for the three alternatives are quantified in terms of holding capacity, general plan land use acreage, and community plan land use acreage. The Financing Strategy is being prepared based on the Preferred Plan, and not the -10% Alternative Plan, or the -15% Alternative Plan, though much of the identified capital improvement requirements will be required either of the project alternative. However, the Financing Strategy is not an Infrastructure Financing Plan. As discussed in the Land Use section, an Infrastructure Financing Plan is required prior to the approval of zoning for the Plan Area.

At a minimum, the NVSSP Financing Plan is expected to recommend its funding mechanisms for all development projects that will ultimately be approved within the Plan Area, whether for the Preferred Plan, the -10 % Alternative Plan, or the -15% Alternative Plan.

The Financing Plan is tangible to environmental impacts in that it provides the mechanism to ensure that needed improvements to mitigate traffic, drainage, water supply and other infrastructure/service impacts can be implemented in a timely manner.

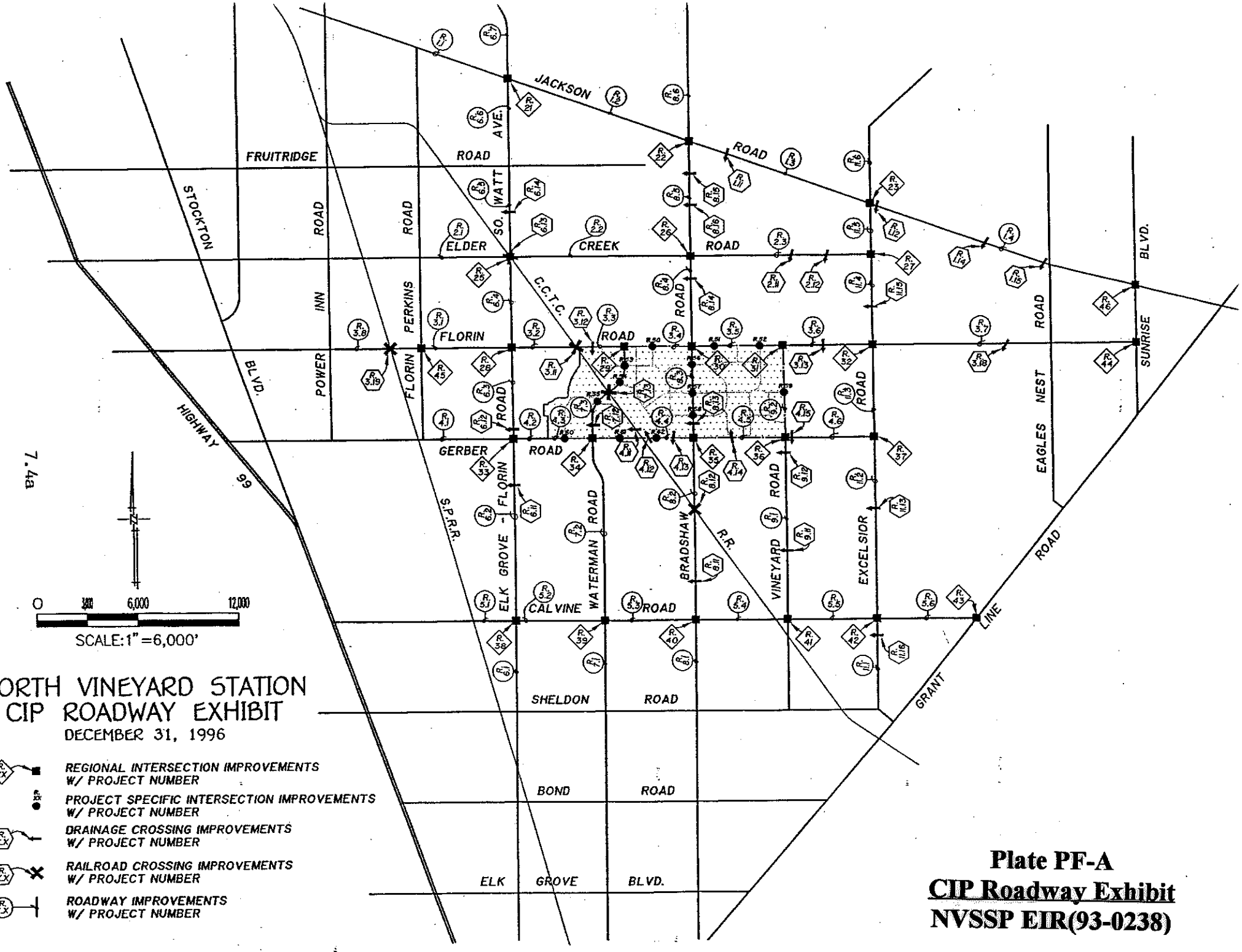
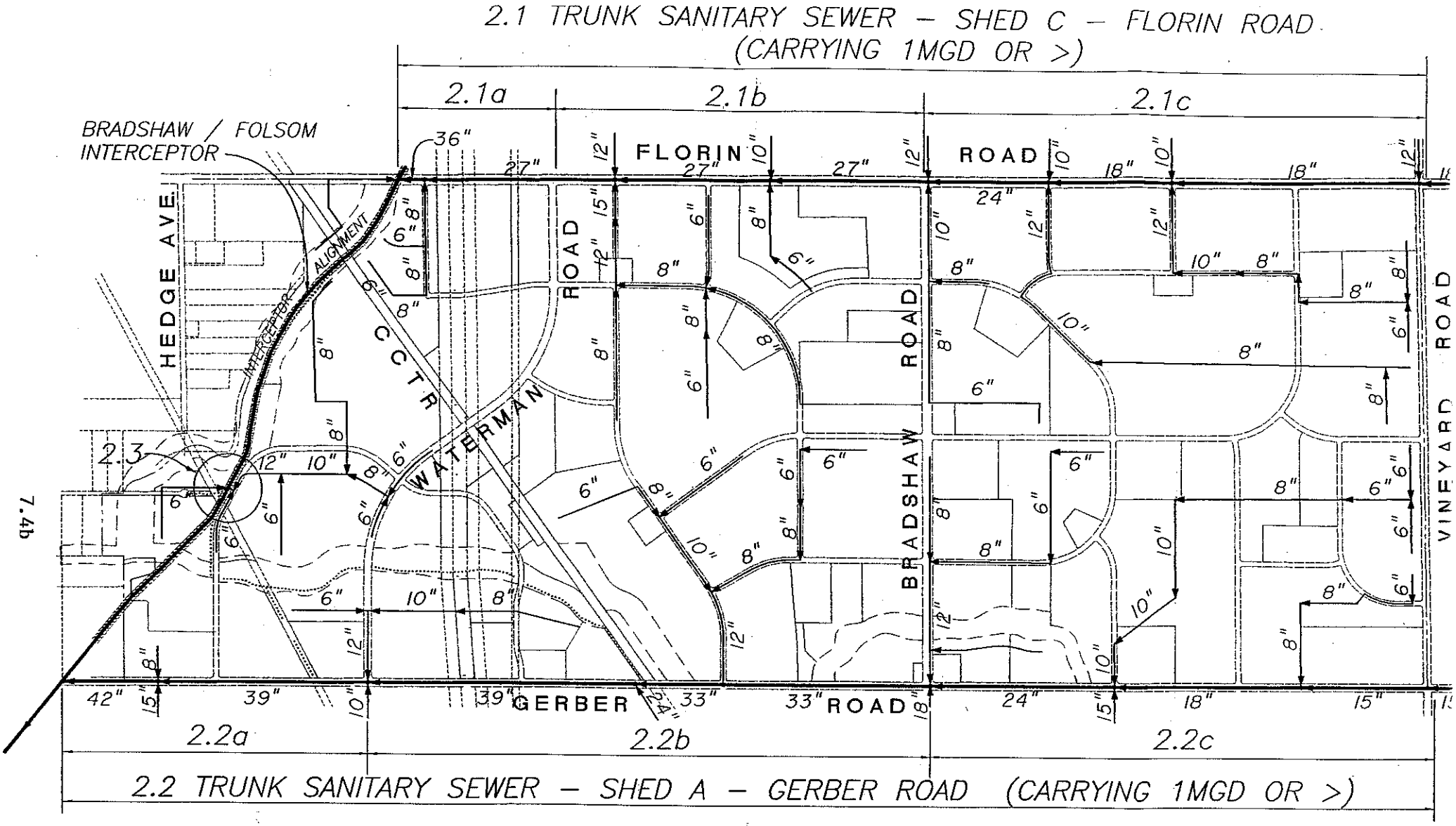


Plate PF-A
CIP Roadway Exhibit
NVSSP EIR(93-0238)



LEGEND

SANITARY SEWER PIPE & DIRECTION OF FLOW

0 500 1000 2000

SCALE: 1"=1000'

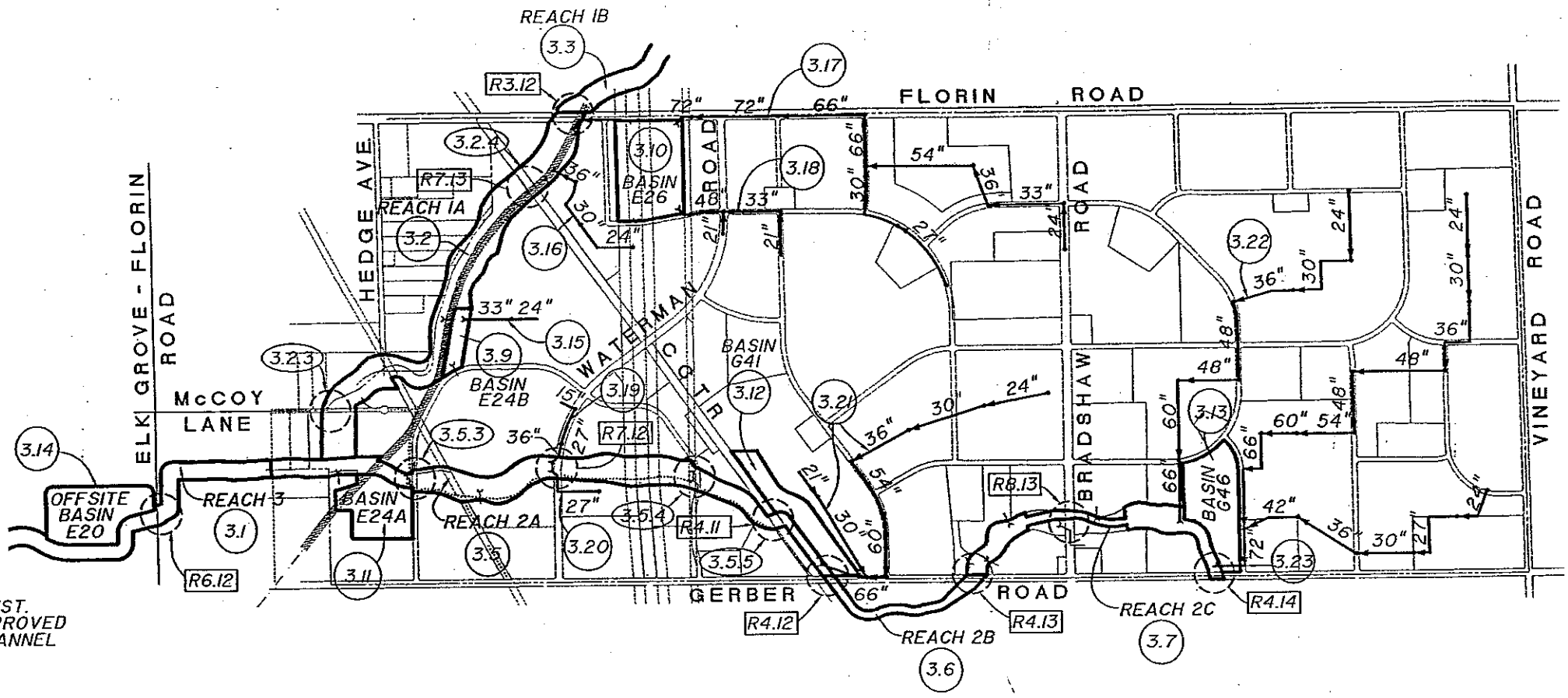
North Vineyard Station
Capital Improvement Program
SEWER FACILITIES

Sacramento, California January, 1997

Plate PF-B

CIP Sewer Facilities Exhibit

NVSSP EIR(93-0238)



0 600 1200 2400

SCALE:1"=1200'

LEGEND

STORM DRAIN PIPE & DIRECTION OF FLOW

R4.12 ROADWAY FACILITY IMPROVEMENTS W/ PROJECT NUMBER • DRAINAGE CROSSINGS

X.X.X DRAINAGE CROSSING IMPROVEMENTS W/ PROJECT NUMBER

3.X DRAINAGE FACILITY IMPROVEMENTS W/ PROJECT NUMBER

North Vineyard Station
Capital Improvement Program
DRAINAGE FACILITIES

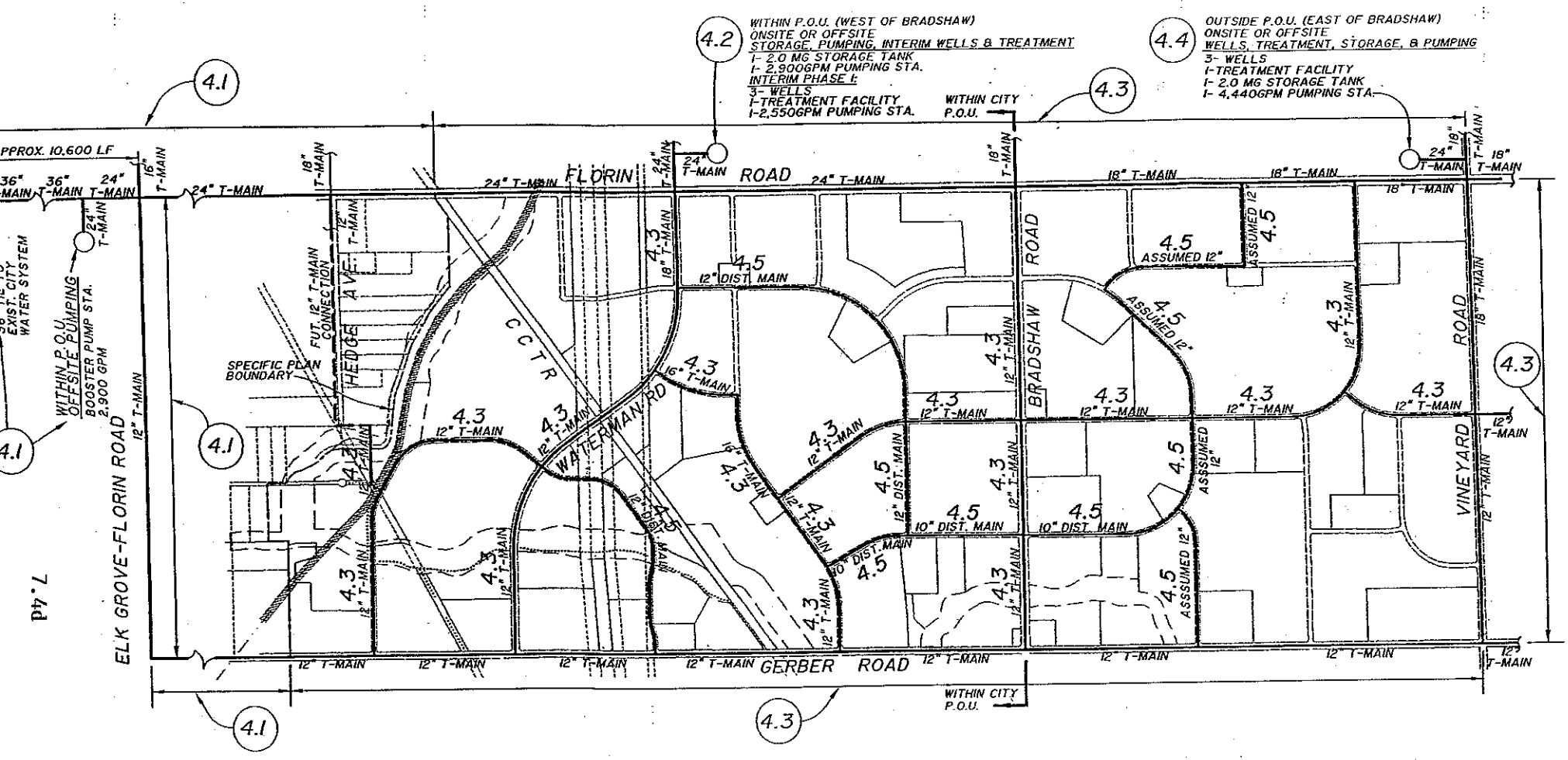
Sacramento, California January, 1997

Plate PF-C

CIP Drainage Facilities Exhhibit

NVSSP EIR(93-0238)

/web/7000/7536/cip/cip-storm.dwg



0 600 1200 2400

SCALE: 1" = 1200'

LEGEND

PROP. WATER MAIN

FUTURE WATER MAIN

4.X C.I.P. PROJECT NUMBER

WATER MASTER PLAN NOTES:

1. T-MAINS AS SHOWN ON THIS PLAN ARE PER ALTERNATIVE 2 OF THE FINAL DRAFT WATER MASTER PLAN FOR AREAS ADJACENT TO ZONE 40. PREPARED BY WEST YOST & ASSOCIATES DATED SEPTEMBER 1996.
2. ASSUMED 10"& 12" MAINS AS SHOWN ON THIS PLAN HAVE BEEN ADDED TO COMPLETE THE BACKBONE GRID SYSTEM.
3. ONLY 12" & LARGER WATER MAIN FACILITIES HAVE BEEN SHOWN EXCEPT WHERE 10" MAIN IS NEEDED TO COMPLETE 12" LOOPS.FOR PRESENTATION.

North Vineyard Station
Capital Improvement Program
WATER FACILITIES

Sacramento, California January, 1997

Plate PF-D

CIP Water Facilities Exhibit

NVSSP EIR(93-0238)

ckay Somps
o No: 7536-0

7536RDWY.XLS
12/31/96

Table PF-1.1
CIP Roadway Summary
NVSSP EIR(93-0238)

NORTH VINEYARD STATION SPECIFIC PLAN
PRELIMINARY CAPITAL IMPROVEMENT ITEMS LISTING
Roadway Listing & Preliminary Costs
Notes: Proj. No. R46 added 12-31-96.

Project Number	Roadway Segment/ Item	Project Description	On-site or Off-site	Detail Sheet Linked	Quantity	Unit	Unit Price	Total Estimated Cost	Project Share %ADT Cummul. + Project	Estimated Project Cost
Streetwork										
	Jackson Road									
R1.1	Jackson Road- South Watt to Folsom	6 Lane 108' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg.)	Off	No	7,950	l.f.	$370	$2,942,000	16%	$479,000
R1.2	Jackson Road- South Watt to Bradshaw	6 Lane 108' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg.)	Off	No	10,400	l.f.	$370	$3,848,000	11%	$412,000
R1.3	Jackson Road- Bradshaw to Excelsior	4 Lane 84' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg.)	Off	No	10,400	l.f.	$265	$2,756,000	0%	$0
R1.11	Jackson Road- Morrison Creek Crossing	Bridge/Culvert Improvements	Off	No	1	l.s.	$833,000	$833,000	0%	$0
R1.12	Jackson Road- Elder Creek Crossing	Bridge/Culvert Improvements	Off	No	1	l.s.	$190,000	$190,000	3%	$6,000
R1.4	Jackson Road- Excelsior to Sunrise	4 Lane 84' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg.)	Off	No	15,850	l.f.	$265	$4,200,000	3%	$134,000
R1.14	Jackson Road- Tributary to Elder Creek Crossing	Bridge/Culvert Improvements	Off	No	1	l.s.	$190,000	$190,000	3%	$6,000
R1.15	Jackson Road- Frye Creek Crossing	Bridge/Culvert Improvements	Off	No	1	l.s.	$190,000	$190,000	3%	$6,000
	Elder Creek Road									
R2.1	Elder Creek Road- Florin Perkins to South Watt	4 Lane 84' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg.)	Off	No	4,850	l.f.	$265	$1,285,000	9%	$118,000
R2.2	Elder Creek Road- South Watt to Bradshaw	4 Lane 84' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg.)	Off	No	9,700	l.f.	$265	$2,571,000	6%	$165,000
R2.3	Elder Creek Road- Bradshaw to Excelsior	4 Lane 84" R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg.)	Off	No	9,700	l.f.	$265	$2,571,000	16%	$415,000
R2.11	Elder Creek Road- Elder Creek Crossing	Bridge/Culvert Improvements	Off	No	1	l.s.	$165,000	$165,000	16%	$27,000
R2.12	Elder Creek Road-Tributary to Elder Creek Crossing	Bridge/Culvert Improvements	Off	No	1	l.s.	$165,000	$165,000	16%	$27,000
	Florin Road									
R3.1	Florin Road- Florin Perkins to E.G.-Florin	6 Lane 108' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg.)	Off	No	4,850	l.f.	$370	$1,795,000	21%	$370,000
R3.2	Florin Road- Elk-Grove Florin to CCTC RR (Project Boundary)	6 Lane 108' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg.)	Off	No	3,450	l.f.	$370	$1,277,000	34%	$432,000
R3.3	Florin Road- CCTC RR (Project Boundary) to Waterman	6 Lane 108' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg.)	On	No	2,350	l.f.	$370	$870,000	34%	$294,000
R3.11	Florin Road- CCTC RR Crossing	Reconstruct at-grade RR crossing (108' R/W)	On	No	1	l.s.	$225,000	$225,000	34%	$76,000
R3.12	Florin Road Crossing at Elder Creek	New Bridge Construction (108' R/W)	On	Yes	1	l.s.	$835,000	$835,000	34%	$282,000
R3.4	Florin Road- Waterman to Bradshaw	6 Lane 108' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg.)	On	No	3,100	l.f.	$370	$1,147,000	29%	$336,000
R3.5	Florin Road- Bradshaw to Vineyard (Project Bndry)	6 Lane 108' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg.)	On	No	4,400	l.f.	$370	$1,628,000	39%	$641,000
R3.6	Florin Road- Vineyard (project Boundary) to Excelsior	6 Lane 108' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg.)	Off	No	4,400	l.f.	$370	$1,628,000	23%	$370,000
R3.13	Florin Road- Tributary No. 1 to Gerber Creek Crossing	Bridge/Culvert Improvements	Off	No	1	l.s.	$190,000	$190,000	23%	$43,000
R3.7	Florin Road- Excelsior to Sunrise Blvd.	6 Lane 108' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg.)	Off	No	15,150	l.f.	$370	$5,606,000	29%	$1,652,000
R3.8	Florin Road- Florin Perkins to Power Inn	6 Lane 108' R/W thru Old Florin	Off	No	3,480	l.f.	$370	$1,288,000	19%	$245,000
R3.18	Florin Road- Frye Creek Crossing	6 Lane 108' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg.)	Off	No	1	l.s.	$190,000	$190,000	29%	$56,000
R3.19	Florin Road- SPTCRxR Crossing	Grade Separated Crossing, 108 R/W (includes two 900' legs)	Off	No	1	l.s.	$10,000,000	$10,000,000	19%	$1,899,000

7.4e

streets

Table PF-1.2
CIP Roadway Summary
NVSSP EIR(93-0238)

NORTH VINEYARD STATION SPECIFIC PLAN
PRELIMINARY CAPITAL IMPROVEMENT ITEMS LISTING
Roadway Listing & Preliminary Costs
Notes: Proj. No. R46 added 12-31-96.

Project Number	Roadway Segment/ Item	Project Description	On-site or Off-site	Detail Sheet Linked	Quantity	Unit	Unit Price	Total Estimated Cost	Project Share %ADT Cummul. + Project	Estimated Project Cost
	Gerber Road									
R4.1	Gerber Road- French to E.G.-Florin	4 Lane 84' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg.)	Off	No	4,850	l.f.	$265	$1,285,000	14%	$175,000
R4.2	Gerber Road- Elk-Grove Florin to Project Bndry	4 Lane 84' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg.)	Off	No	1,650	l.f.	$265	$437,000	38%	$166,000
R4.3	Gerber Road- Project Boundary to Waterman	4 Lane 84' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg.)	On	No	2,150	l.f.	$265	$570,000	38%	$216,000
R4.4	Gerber Road- Waterman to Bradshaw	4 Lane 84' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg.)	On	No	5,000	l.f.	$265	$1,325,000	48%	$634,000
R4.11	Gerber Road- CCTC RR Crossing	Reconstruct at-grade RR crossing (84' R/W)	On	No	1	l.s.	$200,000	$200,000	48%	$96,000
R4.12	Gerber Road- Gerber Creek Crossing No. 4	2-8' X 6' Box Culverts With Headwalls (84' R/W)	On	Yes	1	l.s.	$196,000	$196,000	48%	$94,000
R4.13	Gerber Road- Gerber Creek Crossing No. 3	2-8' X 6' Box Culverts With Headwalls (84' R/W)	On	Yes	1	l.s.	$180,000	$180,000	48%	$86,000
R4.5	Gerber Road- Bradshaw to Vineyard (Project Bndry)	4 Lane 84' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg.)	On	No	4,400	l.f.	$265	$1,166,000	38%	$438,000
R4.14	Gerber Road- Gerber Creek Crossing No. 2	2-8' X 5' Box Culverts With Heaadwalls (84' R/W)	On	Yes	1	l.s.	$175,000	$175,000	38%	$66,000
R4.6	Gerber Road- Vineyard (Project Boundary) to Excelsior	4 Lane 84' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg.)	Off	No	4,400	l.f.	$265	$1,166,000	54%	$633,000
R4.15	Gerber Road- Gerber Creek Crossing No. 1	Bridge/Culvert Improvements	Off	No	1	l.s.	$165,000	$165,000	54%	$90,000
	Calvine Road									
R5.1	Calvine Road- French to E.G.-Florin	6 Lane 108' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg.)	Off	No	4,850	l.f.	$370	$1,795,000	6%	$116,000
R5.2	Calvine Road- Elk-Grove Florin to Waterman	6 Lane 108' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg.)	Off	No	4,400	l.f.	$370	$1,628,000	6%	$103,000
R5.11	Calvine Road- Tributary to Strawberry Creek Crossing	Bridge/Culvert Improvements	Off	No	1	l.s.	$190,000	$190,000	6%	$12,000
R5.3	Calvine Road- Waterman to Bradshaw	6 Lane 108' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg.)	Off	No	4,400	l.f.	$370	$1,628,000	4%	$67,000
R5.12	Calvine Road- Laguna Creek Crossing	Bridge/Culvert Improvements	Off	No	1	l.s.	$833,000	$833,000	4%	$34,000
R5.4	Calvine Road- Bradshaw to Vinyard	6 Lane 108' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg.)	Off	No	4,400	l.f.	$370	$1,628,000	4%	$67,000
R5.13	Calvine Road- CCTC RR Crossing	Reconstruct at-grade RR crossing (108' R/W)	On	No	1	l.s.	$225,000	$225,000	4%	$9,000
R5.5	Calvine Road- Vineyard to Exclesior	6 Lane 108' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg.)	Off	No	4,400	l.f.	$370	$1,628,000	14%	$221,000
R5.14	Calvine Road- Tributary No. 1 to Laguna Creek Crossing	Bridge/Culvert Improvements	Off	No	1	l.s.	$190,000	$190,000	14%	$26,000
R5.6	Calvine Road- Excelsior to Grant Line	6 Lane 108' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg.)	Off	No	5,450	l.f.	$370	$2,017,000	14%	$282,000

7.4f

Mackay Somps
Job No: 7536-0

Table PF-1.3
CIP Roadway Summary
NVSSP EIR(93-0238)

7536RDWY.XLS
12/31/96

NORTH VINEYARD STATION SPECIFIC PLAN
PRELIMINARY CAPITAL IMPROVEMENT ITEMS LISTING
Roadway Listing & Preliminary Costs
Notes: Proj. No. R46 added 12-31-96.

Project Number	Roadway Segment/ Item	Project Description	On-site or Off-site	Detail Sheet Linked	Quantity	Unit	Unit Price	Total Estimated Cost	Project Share %ADT Cummul. + Project	Estimated Project Cost
	South Watt/Elk Grove-Florin Road									
R6.1	Elk Grove-Florin Road- Sheldon to Calvine	6 Lane 108' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg.)	Off	No	4,850	l.f.	$370	$1,795,000	10%	$187,000
R6.2	Elk Grove-Florin Road- Calvine to Gerber	6 Lane 108' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg.)	Off	No	9,700	l.f.	$370	$3,589,000	13%	$465,000
R6.11	Elk Grove-Florin Road- Beacon Creek Crossing	Bridge/Culvert Improvements	Off	No	1	l.s.	$190,000	$190,000	13%	$25,000
R6.3	Elk Grove-Florin Road- Gerber to Florin	6 Lane 108' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg.)	Off	No	4,400	l.f.	$370	$1,628,000	18%	$286,000
R6.12	Elk Grove-Florin Road- Elder Creek Crossing	New Bridge Construction (108' R/W)	Off	Yes	1	l.s.	$779,000	$779,000	18%	$137,000
R6.4	South Watt- Florin to Elder Creek	6 Lane 108' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg.)	Off	No	4,400	l.f.	$370	$1,628,000	20%	$329,000
R6.13	South Watt Ave.- CCTC RR Crossing	Grade Separated RxR Xing, 108' R/W (includ. legs & possible realignment)	Off	No	1	l.s.	$12,000,000	$12,000,000	17%	$1,980,000
R6.5	South Watt- Elder Creek to Fruitridge	6 Lane 108' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg.)	Off	No	4,850	l.f.	$370	$1,795,000	18%	$331,000
R6.14	Elk Grove-Florin Road- Morrison Creek Crossing	Bridge/Culvert Improvements	Off	No	1	l.s.	$833,000	$833,000	18%	$154,000
R6.6	South Watt- Fruitridge to Jackson	6 Lane 108' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg.)	Off	No	4,650	l.f.	$370	$1,721,000	19%	$322,000
R6.7	South Watt- North of Jackson (Jackson to Folsom)	6 Lane 108' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg.)	Off	No	4,000	l.f.	$370	$1,480,000	14%	$213,000
	Waterman Road									
R7.1	Waterman Road- Sheldon to Calvine	4 Lane 84' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg.)	Off	No	4,850	l.f.	$265	$1,285,000	5%	$58,000
R7.2	Waterman Road- Calvine to Gerber (Project Boundary)	4 Lane 84' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg.)	Off	No	9,700	l.f.	$265	$2,571,000	8%	$210,000
R7.3	Waterman Road- Gerber (Project Bndry) to Florin (Project Bndry)	4 Lane 84' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg.)	On	No	5,200	l.f.	$265	$1,378,000	17%	$240,000
R7.12	Waterman Road- Gerber Creek Crossing	2-8' X 6' Box Culverts With Headwalls (84' R/W)	On	Yes	1	l.s.	$155,000	$155,000	17%	$27,000
R7.13	Waterman Road- CCTC RR Crossing	Const. new at-grade RR crossing (84' R/W)	On	No	1	l.s.	$200,000	$200,000	17%	$35,000
	Bradshaw Road									
R8.1	Bradshaw Road- Sheldon to Calvine	6 Lane 108' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg.)	Off	No	4,850	l.f.	$370	$1,795,000	13%	$228,000
R8.2	Bradshaw Road- Calvine to Gerber (Project Bndry)	6 Lane 108' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg.)	Off	No	9,700	l.f.	$370	$3,589,000	10%	$356,000
R8.11	Bradshaw Road- Laguna Creek Crossing	Bridge/Culvert Improvements	Off	No	1	l.s.	$833,000	$833,000	10%	$83,000
R8.12	Bradshaw Road- CCTC RR Crossing	Reconstruct at-grade RR crossing (108' R/W)	Off	No	1	l.s.	$225,000	$225,000	10%	$22,000
R8.3	Bradshaw Road- Gerber (Project Bndry) to Florin (Project Bndry)	6 Lane 108' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg.)	On	No	4,400	l.f.	$370	$1,628,000	29%	$472,000
R8.13	Bradshaw Road- Gerber Creek Crossing	2-8' X 5' Box Culverts With Headwalls (108' R/W)	On	Yes	1	l.s.	$185,000	$185,000	29%	$54,000
R8.4	Bradshaw Road- Florin (Project Bndry) to Elder Creek	6 Lane 108' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg.)	Off	No	4,400	l.f.	$370	$1,628,000	18%	$293,000
R8.14	Bradshaw Road- Elder Creek Crossing	Bridge/Culvert Improvements	Off	No	1	l.s.	$190,000	$190,000	18%	$34,000
R8.5	Bradshaw Road- Elder Creek to Jackson	6 Lane 108' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg.)	Off	No	5,700	l.f.	$370	$2,109,000	15%	$310,000
R8.15	Bradshaw Road- Morrison Creek Crossing	Bridge/Culvert Improvements	Off	No	1	l.s.	$833,000	$833,000	15%	$122,000
R8.6	Bradshaw Road- North of Jackson (Jackson to Kiefer)	6 Lane 108' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg.)	Off	No	4,950	l.f.	$370	$1,832,000	12%	$222,000
R8.16	Bradshaw Road- Tributary to Elder Creek Crossing	Bridge/Culvert Improvements	Off	No	1	l.s.	$190,000	$190,000	15%	$28,000

7.48

streets

Table PF-1.4
CIP Roadway Summary
NVSSP EIR(93-0238)

NORTH VINEYARD STATION SPECIFIC PLAN
PRELIMINARY CAPITAL IMPROVEMENT ITEMS LISTING
Roadway Listing & Preliminary Costs
Notes: Proj. No. R46 added 12-31-96.

Project Number	Roadway Segment/ Item	Project Description	On-site or Off-site	Detail Sheet Linked	Quantity	Unit	Unit Price	Total Estimated Cost	Project Share %ADT Cummut. + Project	Estimated Project Cost
	Vineyard Road									
R9.1	Vineyard Road- Calvine to Gerber (Project Boundary)	4 Lane 84' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg.)	Off	No	9,700	l.f.	$265	$2,571,000	19%	$476,000
R9.11	Vineyard Road- Laguna Creek Crossing	Bridge/Culvert Improvements	Off	No	1	l.s.	$653,000	$653,000	19%	$121,000
R9.12	Vineyard Road- Gerber Creek Crossing	Bridge/Culvert Improvements	Off	No	1	l.s.	$165,000	$165,000	19%	$31,000
R9.2	Vineyard Road- Gerber (Project Bndry) to Florin (Project Bndry)	4 Lane 84' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg.)	On	No	4,400	l.f.	$265	$1,166,000	20%	$228,000
	Excelsior Road									
R11.1	Excelsior Road- Sheldon to Calvine	4 Lane 84' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg.)	Off	No	4,850	l.f.	$265	$1,285,000	20%	$261,000
R11.2	Excelsior Road- Calvine to Gerber	4 Lane 84' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg.)	Off	No	9,700	l.f.	$265	$2,571,000	10%	$253,000
R11.13	Excelsior Road- Laguna Creek Crossing	Bridge/Culvert Improvements	Off	No	1	l.s.	$653,000	$653,000	10%	$64,000
R11.3	Excelsior Road- Gerber to Florin	4 Lane 84' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg.)	Off	No	4,400	l.f.	$265	$1,166,000	26%	$300,000
R11.4	Excelsior Road- Florin to Elder Creek	4 Lane 84' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg.)	Off	No	4,400	l.f.	$265	$1,166,000	15%	$171,000
R11.15	Excelsior Road- Tributary to Elder Creek Crossing	Bridge/Culvert Improvements	Off	No	1	l.s.	$165,000	$165,000	15%	$24,000
R11.5	Excelsior Road- Elder Creek to Jackson	4 Lane 84' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg.)	Off	No	2,000	l.f.	$265	$530,000	11%	$60,000
R11.6	Excelsior Road- North of Jackson (Jackson to Kiefer)	4 Lane 84' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg.)	Off	No	6,800	l.f.	$265	$1,802,000	7%	$132,000
R11.16	Excelsior Road- Tributary to Laguna Creek Crossing	Bridge/Culvert Improvements	Off	No	1	l.s.	$165,000	$165,000	20%	$34,000
	Total For Streetwork				**297,267**			**$129,334,000**		**$21,500,000**
	Note: Lengths shown above exclude 450' intersection leg widening for CIP Regional identified intersections.									

7.4h

Table PF-1.5
CIP Roadway Summary
NVSSP EIR(93-0238)

NORTH VINEYARD STATION SPECIFIC PLAN
PRELIMINARY CAPITAL IMPROVEMENT ITEMS LISTING
Roadway Listing & Preliminary Costs
Notes: Proj. No. R46 added 12-31-96.

Project Number	Roadway Segment/ Item	Project Description	On-site or Off-site	Detail Sheet Linked	Quantity	Unit	Unit Price	Total Estimated Cost	Project Share %ADT Cummul. + Project	Estimated Project Cost
Intersection Imps									(Average Intx. Leg % ADT)	
Regional										
R21	Jackson Rd. at South Watt Ave.	6 X 6 Intersection Widening & Signalization, 4-way (incl. 450' intx. leg imps.)	Off	No	1	l.s.	$890,000	$890,000	15%	$137,000
R22	Jackson Rd. at Bradshaw	6 X 6 Intersection Widening & Signalization, 4-way (incl. 450' intx. leg imps.)	Off	No	1	l.s.	$890,000	$890,000	11%	$101,000
R23	Jackson Rd. at Excelsior	4 X 4 Intersection Widening & Signalization, 4-way (incl. 450' intx. leg imps.)	Off	No	1	l.s.	$680,000	$680,000	5%	$36,000
R25	Elder Creek Rd. at South Watt Ave.	4 X 6 Intersection Widening & Signalization, 4-way (incl. 450' intx. leg imps.)	Off	No	1	l.s.	$785,000	$785,000	17%	$130,000
R26	Elder Creek Rd. at Bradshaw Rd.	4 X 6 Intersection Widening & Signalization, 4-way (incl. 450' intx. leg imps.)	Off	No	1	l.s.	$785,000	$785,000	15%	$119,000
R27	Elder Creek Rd. at Excelsior Rd.	4 X 4 Intersection Widening & Signalization, 3-way (incl. 450' intx. leg imps.)	Off	No	1	l.s.	$510,000	$510,000	14%	$70,000
R28	Florin Rd. at Elk Grove-Florin Rd	6 X 6 Intersection Widening & Signalization, 4-way (incl. 450' intx. leg imps.)	Off	No	1	l.s.	$890,000	$890,000	23%	$203,000
R29	Florin Rd. at Waterman Rd.	6 X 4 Intersection Widening & Signalization, 3-way (incl. 450' intx. leg imps.)	On	No	1	l.s.	$589,000	$589,000	28%	$164,000
R30	Florin Rd. at Bradshaw Rd.	6 X 6 Intersection Widening & Signalization, 4-way (incl. 450' intx. leg imps.)	On	No	1	l.s.	$890,000	$890,000	26%	$236,000
R31	Florin Rd. at Vineyard Rd.	6 X 4 Intersection Widening & Signalization, 3-way (incl. 450' intx. leg imps.)	On	No	1	l.s.	$589,000	$589,000	28%	$164,000
R32	Florin Rd. at Excelsior Rd.	6 X 4 Intersection Widening & Signalization, 3-way (incl. 450' intx. leg imps.)	Off	No	1	l.s.	$589,000	$589,000	23%	$137,000
R33	Gerber Rd. at Elk Grove-Florin Rd.	4 X 6 Intersection Widening & Signalization, 4-way (incl. 450' intx. leg imps.)	Off	No	1	l.s.	$785,000	$785,000	20%	$159,000
R34	Gerber Rd. at Waterman Rd.	4 X 4 Intersection Widening & Signalization, 4-way (incl. 450' intx. leg imps.)	On	No	1	l.s.	$680,000	$680,000	29%	$194,000
R35	Gerber Rd. at Bradshaw Rd.	4 X 6 Intersection Widening & Signalization, 4-way (incl. 450' intx. leg imps.)	On	No	1	l.s.	$785,000	$785,000	29%	$224,000
R36	Gerber Rd. at Vineyard Rd.	4 X 4 Intersection Widening & Signalization, 4-way (incl. 450' intx. leg imps.)	On	No	1	l.s.	$680,000	$680,000	29%	$199,000
R37	Gerber Rd. at Excelsior Rd.	4 X 4 Intersection Widening & Signalization, 4-way (incl. 450' intx. leg imps.)	Off	No	1	l.s.	$680,000	$680,000	28%	$192,000
R38	Calvine Rd. at Elk Grove-Florin Rd.	6 X 6 Intersection Widening & Signalization, 4-way (incl. 450' intx. leg imps.)	Off	No	1	l.s.	$890,000	$890,000	9%	$80,000
R39	Calvine Rd. at Waterman Rd.	6 X 4 Intersection Widening & Signalization, 4-way (incl. 450' intx. leg imps.)	Off	No	1	l.s.	$785,000	$785,000	6%	$46,000
R40	Calvine Rd. at Bradshaw Rd.	6 X 6 Intersection Widening & Signalization, 4-way (incl. 450' intx. leg imps.)	Off	No	1	l.s.	$890,000	$890,000	8%	$75,000
R41	Calvine Rd. at Vineyard Rd.	6 X 4 Intersection Widening & Signalization, 3-way (incl. 450' intx. leg imps.)	Off	No	1	l.s.	$589,000	$589,000	11%	$65,000
R42	Calvine Rd. at Excelsior Rd.	6 X 4 Intersection Widening & Signalization, 4-way (incl. 450' intx. leg imps.)	Off	No	1	l.s.	$785,000	$785,000	15%	$117,000
R43	Calvine Rd. at Grant Line Rd.	6 X 6 Intersection Widening & Signalization, 3-way (incl. 450' intx. leg imps.)	Off	No	1	l.s.	$668,000	$668,000	13%	$89,000
R44	Florin Rd. at Sunrise Blvd.	6 X 6 Intersection Widening & Signalization, 3-way (incl. 450' intx. leg imps.)	Off	No	1	l.s.	$668,000	$668,000	29%	$195,000
R45	Florin Rd. at Florin-Perkins Rd.	6 X 4 Intersection Widening & Signalization, 4-way (incl. 450' intx. leg imps.)	Off	No	1	l.s.	$785,000	$785,000	20%	$157,000
R46	Jackson Rd. at Sunrise Blvd.	6 X 6 Intx. Widening & Signal Mod., 4-way (incl. leg & creek xing impr.)	Off	No	1	l.s.	$890,000	$890,000	3%	$27,000
	Total For Regional Intersections							**$18,647,000**		**$3,316,000**

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Mackay Somps
Job No: 7536-0

7536RDWY.XLS
12/31/96

Table PF-1.6
CIP Roadway Summary
NVSSP EIR(93-0238)

NORTH VINEYARD STATION SPECIFIC PLAN
PRELIMINARY CAPITAL IMPROVEMENT ITEMS LISTING
Roadway Listing & Preliminary Costs
Notes: Proj. No. R46 added 12-31-96.

Project Number	Roadway Segment/ Item	Project Description	On-site or Off-site	Detail Sheet Linked	Quantity	Unit	Unit Price	Total Estimated Cost	Project Share %ADT Cummul. + Project	Estimated Project Cost
Project Specific										
R50	Florin Rd. at Collector	6 X 2 Intersection Widening & Signalization, 3-way(inc. minor intx. leg imp.s)	On	No	1	Each	$130,000	$130,000	100%	$130,000
R51	Florin Rd. at Collector	6 X 2 Intersection Widening & Signalization, 3-way(inc. minor intx. leg imp.s)	On	No	1	Each	$130,000	$130,000	100%	$130,000
R52	Florin Rd. at Collector	6 X 2 Intersection Widening & Signalization, 3-way(inc. minor intx. leg imp.s)	On	No	1	Each	$130,000	$130,000	100%	$130,000
R53	Waterman Rd. at Collector	4 X 2 Intersection Widening & Signalization, 4-way(inc. minor intx. leg imp.s)	On	No	1	Each	$156,000	$156,000	100%	$156,000
R54	Waterman Rd. at Collector	4 X 2 Intersection Widening & Signalization, 3-way(inc. minor intx. leg imp.s)	On	No	1	Each	$130,000	$130,000	100%	$130,000
R55	Waterman Rd. at Collector	4 X 2 Intersection Widening & Signalization, 4-way(inc. minor intx. leg imp.s)	On	No	1	Each	$156,000	$156,000	100%	$156,000
R56	Bradshaw Rd. at Collector	6 X 2 Intersection Widening & Signalization, 4-way(inc. minor intx. leg imp.s)	On	No	1	Each	$156,000	$156,000	100%	$156,000
R57	Bradshaw Rd. at Collector	6 X 2 Intersection Widening & Signalization, 4-way(inc. minor intx. leg imp.s)	On	No	1	Each	$156,000	$156,000	100%	$156,000
R58	Bradshaw Rd. at Collector	6 X 2 Intersection Widening & Signalization, 4-way(inc. minor intx. leg imp.s)	On	No	1	Each	$156,000	$156,000	100%	$156,000
R59	Vineyard Rd. at Collector	4 X 2 Intersection Widening & Signalization, 3-way(inc. minor intx. leg imp.s)	On	No	1	Each	$130,000	$130,000	100%	$130,000
R60	Gerber Rd. at Collector	4 X 2 Intersection Widening & Signalization, 3-way(inc. minor intx. leg imp.s)	On	No	1	Each	$130,000	$130,000	100%	$130,000
R61	Gerber Rd. at Collector	4 X 2 Intersection Widening & Signalization, 3-way(inc. minor intx. leg imp.s)	On	No	1	Each	$130,000	$130,000	100%	$130,000
R62	Gerber Rd. at Collector	4 X 2 Intersection Widening & Signalization, 3-way(inc. minor intx. leg imp.s)	On	No	1	Each	$130,000	$130,000	100%	$130,000
	Total For Project Specific Intersections							$1,820,000		$1,820,000
	Total For Intersections							$20,467,000		$5,136,000
	Grand Total Roadway							$149,801,000		$26,636,000

7.4j

streets

Table PF-2.1
CIP Sewer, Water, Drainage Summary
NVSSP EIR(93-0238)

NORTH VINEYARD STATION SPECIFIC PLAN
PRELIMINARY CAPITAL IMPROVEMENT ITEMS LISTING

Project Number	Project Name	On-site or Off-site	Project Description	Detail Sheet Linked	Total
SANITARY SEWER IMPROVEMENTS					
Trunk Systems Carrying 1 MGD or Greater					
2.1	**TRUNK SANITARY SEWER - FLORIN ROAD, SHED C**				
2.1a	TRUNK SS - FLORIN ROAD (INTERCEPTOR TO WATERMAN)	On	36"/27" TRUNK SAN. SEWER CONST.	Yes	$232,000
2.1b	TRUNK SS - FLORIN ROAD (WATERMAN TO BRADSHAW)	On	27" TRUNK SAN. SEWER CONST.	Yes	$643,000
2.1c	TRUNK SS - FLORIN ROAD (BRADSHAW TO VINYARD)	On	24"/18" TRUNK SAN. SEWER CONST.	Yes	$677,000
2.2	**TRUNK SANITARY SEWER - GERBER ROAD, SHED A**				
2.2a	TRUNK SS - GERBER ROAD (INTERCEPTOR TO WATERMAN)	On	42"/39" TRUNK SAN. SEWER CONST.	Yes	$819,000
2.2b	TRUNK SS - GERBER ROAD (WATERMAN TO BRADSHAW)	On	39"/33" TRUNK SAN. SEWER CONST..	Yes	$1,307,000
2.2c	TRUNK SS - GERBER ROAD (BRADSHAW TO VINYARD)	On	24" TO 15" TRUNK SAN. SEWER CONST.	Yes	$834,000
Subtotal Trunk Systems Carrying 1 MGD or Greater					**$4,512,000**
Lateral Sewer Systems Carrying Less Than 1 MGD					
2.3	LATERAL SS - PASSILIS LANE (AT INTERCEPTOR)	On	LATERAL SAN. SEWER CONST. (INTERCEPTOR CONNECT.)	Yes	$25,000
Subtotal Lateral Systems Carrying Less Than 1 MGD					**$25,000**
Total Sanitary Sewer Costs					**$4,537,000**

7.4k

Table PF-2.2
CIP Sewer, Water, Drainage Summary
NVSSP EIR(93-0238)

NORTH VINEYARD STATION SPECIFIC PLAN
PRELIMINARY CAPITAL IMPROVEMENT ITEMS LISTING

Project Number	Project Name	On-site or Off-site	Project Description	Detail Sheet Linked	Total
DRAINAGE IMPROVEMENTS					
(See also Roadway Section for Additional Bridges/Culverts)					
Channel Related Items					
3.1	**Elder Creek Reach 3 (Improved Channel to W. Bndry)**				
3.1.1	ELDER CREEK REACH 3 - OFF-SITE CHANNEL IMPS.	Off	OFF-SITE CHANNEL CONSTR. (APPROX. 4,850 L.F.)	Yes	$600,000
3.2	**Elder Creek Reach 1A (W. Bndry to Florin Rd.)**				
3.2.1	ELDER CREEK REACH 1A - CHANNEL IMPROV'S.	On	CHANNEL CONSTR. (APPROX. 5,560 L.F.)	Yes	$739,000
3.2.2	ELDER CREEK REACH 1A - DRAINAGE PARKWAY	On	CHANNEL PARKWAY CONSTR. (APPROX. 5,560 L.F.)	Yes	$193,000
3.2.3	ELDER CREEK REACH 1A - McCOY LANE CROSSING	On	(3) 8'x6' BOX CULVERT CONSTR. w/ HEADWALLS (+/- 40' R/W)	Yes	$152,000
3.2.4	ELDER CREEK REACH 1A - CCTC RR BRIDGE DEEPENING	On	DEEPEN CENTER PIERS @ EXIST. BRIDGE	Yes	$240,000
3.3	**Elder Creek Reach 1B (Upstream of Florin Rd.)**				
3.3.1	ELDER CREEK REACH 1B - OFF-SITE CHANNEL IMPROV'S.	Off	CHANNEL CONSTR. (APPOX. 1,400 L.F.)	Yes	$241,000
3.4	Left Blank For Additions	----	----	----	----
3.5	**Gerber Creek Reach 2A (W. Bndry to Gerber Rd. Crossing No. 4)**				
3.5.1	GERBER CREEK REACH 2A - CHANNEL IMPROV'S.	On	CHANNEL CONSTR.(APPROX. 7,100 L.F.)	Yes	$961,000
3.5.2	GERBER CREEK REACH 2A - DRAINAGE PARKWAY	On	CHANNEL PARKWAY CORR. CONSTR. (APPROX. 7,100 L.F.)	Yes	$247,000
3.5.3	GERBER CREEK REACH 2A -PASSALIS LN. CROSSING (WEST)	On	(3) 8'x6' BOX CULVERT CONST. w/ HEADWALLS (56' R/W)	Yes	$167,000
3.5.4	GERBER CREEK REACH 2A -PASSALIS LN. CROSSING (EAST)	On	(3) 8'x6' BOX CULVERT CONSTR. w/ HEADWALLS (56' R/W)	Yes	$167,000
3.5.5	GERBER CREEK REACH 2A - CCTC RR BRIDGE DEEPENING	On	DEEPEN CENTER PIERS @ EXIST. BRIDGE	Yes	$316,000
3.6	**Gerber Creek Reach 2B (Gerber Rd.Crossing 4 to Crossing 3)**				
3.6.1	GERBER CREEK REACH 2B - OFF-SITE CHANNEL IMPS.	Off	CHANNEL CONSTR. (APPROX. 2,030 L.F.)	Yes	$238,000
3.7	**Gerber Creek Reach 2C (Gerber Rd.Crossing 3 to Crossing 2)**				
3.7.1	GERBER CREEK REACH 2C CHANNEL IMPROVEMENTS	On	CHANNEL CONSTR. (APPROX. 3,680 L.F.)	Yes	$370,000
3.7.2	GERBER CREEK REACH 2C - DRAINAGE PARKWAY	On	DRAINAGE PARKWAY CORR. CONST. (APPROX. 3,680 L.F.)	Yes	$128,000
3.8	Left Blank for Additions	----	----	----	----
Subtotal Channel Related Items					**$4,759,000**

Table PF-2.3
CIP Sewer, Water, Drainage Summary
NVSSP EIR(93-0238)

NORTH VINEYARD STATION SPECIFIC PLAN
PRELIMINARY CAPITAL IMPROVEMENT ITEMS LISTING

Project Number	Project Name	On-site or Off-site	Project Description	Detail Sheet Linked	Total
Detention Basin Construction					
3.9	DETENTION BASIN E24B (ELDER CREEK REACH 1A)	On	3.7 AC. WATER QUALITY DETENTION BASIN CONST.	Yes	$545,000
3.10	DETENTION BASIN E26 (ELDER CREEK REACH 1A)	On	18.3 AC. FLOOD CONTROL/W.Q. DET. BASIN CONST.	Yes	$2,790,000
3.11	DETENTION BASIN E24A (GERBER CREEK REACH 2A)	On	12 AC. FLOOD CONTROL/W.Q. DET. BASIN CONST.	Yes	$1,918,000
3.12	DETENTION BASIN G41 (GERBER CREEK REACH 2A)	On	10.6 AC. FLOOD CONTROL/W.Q. DET. BASIN CONST.	Yes	$1,705,000
3.13	DETENTION BASIN G46 (GERBER CREEK REACH 2C)	On	16 AC. FLOOD CONTROL/W.Q. DET. BASIN CONST.	Yes	$2,627,000
3.14	OFFSITE DETENTION BASIN E20 (ELDER CREEK REACH 3)	Off	16 AC. OFFSITE FLOOD CONTROL BASIN CONST.	Yes	$2,456,000
Subtotal Detention Basin Construction					$12,041,000
Trunk Drainage Serving 30 Acres or More					
3.15	TRUNK DRAINGE, SHED L	On	TRUNK DRAIN FAC. (DISCHARGE TO BASIN E24B)	Yes	$55,000
3.16	TRUNK DRAINGE, SHED H	On	TRUNK DRAIN FAC. (DISCHARGE TO ELDER CREEK, REACH2B)	Yes	$93,000
3.17	TRUNK DRAINGE, SHEDS D & E	On	TRUNK DRAIN FAC. (DISCHARGE TO BASIN E26)	Yes	$739,000
3.18	TRUNK DRAINGE, SHED G	On	TRUNK DRAIN FAC. (DISCHARGE TO BASIN E26)	Yes	$135,000
3.19	TRUNK DRAINGE, SHED K	On	TRUNK DRAIN FAC. (DISCHARGE TO GERBER CREEK, REACH 2A)	Yes	$53,000
3.20	TRUNK DRAINGE, SHED J	On	TRUNK DRAIN FAC. (DISCHARGE TO GERBER CREEK, REACH 2A)	Yes	$44,000
3.21	TRUNK DRAINGE, SHED F	On	TRUNK DRAIN FAC. (DISCHARGE TO GERBER CREEK, REACH 2A)	Yes	$497,000
3.22	TRUNK DRAINGE, SHED C	On	TRUNK DRAIN FAC. (DISCHARGE TO BASIN G46)	Yes	$508,000
3.23	TRUNK DRAINGE, SHEDS A & B	On	TRUNK DRAIN FAC. (DISCHARGE TO BASIN G46)	Yes	$935,000
Subtotal Trunk Drainage Construction					$3,059,000
Total Drainage Costs					$19,859,000

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Table PF-2.4
CIP Sewer, Water, Drainage Summary
NVSSP EIR(93-0238)

NORTH VINEYARD STATION SPECIFIC PLAN
PRELIMINARY CAPITAL IMPROVEMENT ITEMS LISTING

Project Number	Project Name	On-site or Off-site	Project Description	Detail Sheet Linked	Total
WATER SYSTEM IMPROVEMENTS					
4.1	OFF-SITE ZONE 40 FACILITIES (FLORIN ROAD)	Off	T-MAIN FAC. (POWER INN RD. TO W. BNDRY)	Yes	$6,710,000
4.2	ZONE 40 FACILITIES (WITHIN P.O.U.)	On or Off	STORAGE, PUMPING, INTERIM WELLS & TREATMENT	Yes	$6,950,000
4.3	ON-SITE ZONE 40 FACILITIES (SPECIFIC PLAN AREA)	On	T-MAIN FACILITIES	Yes	$4,400,000
4.4	ZONE 40 FACILITIES (OUTSIDE P.O.U.)	On or Off	WELLS, TREATMENT, STORAGE & PUMPING	Yes	$7,877,000
4.5	ON-SITE ZONE 40 FACILITIES (SPECIFIC PLAN AREA)	On	DISTR. FAC. REQ'D TO COMPLETE TRANSMISSION GRID	Yes	$945,000
Total Water Costs					**$26,882,000**

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Traffic and Circulation

A traffic impact analysis for the proposed project was conducted by Fehr & Peers Associates, Transportation Consultants (October 2, 1996). The study analyzes the impacts of the North Vineyard Station Specific Plan on the existing transportation system in the area. The study assesses the short- and long-term impacts of the project on the local circulation network and describes the improvements required to mitigate operational deficiencies of the transportation system. The technical study is summarized below and is available for review at the offices of the Department of Environmental Review and Assessment.

The proposed on-site street system within the plan area consists of a network of two-lane collector and local streets interconnected by several major collector roadways that will provide access to the existing and future arterial roadways: Florin Road, Gerber Road, Bradshaw Road and the extensions of Vineyard Road and Waterman Road. As part of the project, improvements to the existing transit, bicycle, and pedestrian facilities, as well as new road facilities will be implemented

EVALUATION CRITERIA

Criteria for evaluating project impacts were established for roadways (including segments and intersections), transit facilities, and bicycle/pedestrian facilities. Each element of the transportation system is described below.

Arterial Roadway Segments

For purposes of this study, roadway segments were analyzed by comparing average daily traffic volumes to capacity thresholds that were developed for the Sacramento County General Plan Update. These thresholds are used to plan the transportation network by projecting the need for new or upgraded facilities.

Operational Deficiencies: According to the Sacramento County General Plan, the streets within the study area are ultimately planned to be medium-access arterial roadways, with two to four intersections per mile, a limited number of driveways, and a speed limit between 35 and 55 miles per hour. For these types of facilities, the daily roadway capacity is approximately 18,000, 36,000, and 54,000 VPD for streets with two lanes, four lanes and six lanes, respectively. These capacities were applied to all facilities under existing and cumulative conditions. An operational deficiency results if the addition of project-generated traffic causes the demand on a facility to exceed its ultimate capacity, thus requiring additional travel lanes beyond those identified on the General Plan

Transportation Map.

Physical Deficiencies: The effect of substandard roadway cross-sections was also used to identify deficiencies. Some of the study roadways have 12-foot travel lanes and 6-foot shoulders. Other roadways such as Gerber Road and Excelsior Road provide 10- or 11-foot travel lanes and shoulders that are less than two-feet wide. The standard lane width and shoulder width is 12 feet and 6 feet, respectively, for rural arterials serving more than 400 VPD. Thus, a physical deficiency is defined to occur when a substandard roadway segment serves more than 400 VPD.

Signalized Intersections

Level of service (LOS) qualitatively describes operating conditions for intersections. There are six levels of service, A through F, which represent driving conditions from best to worst, respectively. In general, LOS A represents free-flow conditions with no congestion and LOS F represents severe congestion or delay under stop-and-go conditions.

The County of Sacramento has defined the minimum acceptable level of service standard for urban area roadways to be LOS E (i.e., LOS F is considered unacceptable). For intersections of rural collector roadways, the minimum acceptable LOS is D. These standards have been set forth in Policy CI-22 in the County's *General Plan Circulation Element*. As set forth in Policy CI-23, if new development results in a level of service worse than those specified in Policy CI-22, traffic impacts must be mitigated by enhancing the capacity of the roadway and/or improving the transit system or by reducing the number of trips generated by the project though implementation of a Transportation System Management (TSM) Plan.

The characteristics of traffic operations for each LOS with respect to signalized intersections are shown in Table TR-1. Corresponding to each LOS is a volume-to-capacity (V/C) ratio. This is the ratio of the existing or projected volume to the theoretical capacity of the intersection. An intersection is defined to be "at capacity" at LOS E when the V/C ratio is 1.00, representing 100% of capacity being used. A v/c ratio exceeding 1.00 indicates the intersection is beyond its capacity thus resulting in LOS F.

Table TR-1 Signalized Intersection Level of Service Characteristics		
Level of Service	Interpretation	Volume-to-Capacity Ratio
A	Uncongested operations; all queues clear in a single cycle.	Less than 0.61
B	Very light congestion; an occasional phase is fully utilized.	0.61-0.70
C	Light congestion; occasional queues on approaches.	0.71-0.80
D	Significant congestion on critical approaches, but intersection is functional. Cars required to wait through more than one cycle during short peaks. No longstanding queues formed.	0.81-0.90
E	Severe congestion with some longstanding queues on critical approaches. Traffic queue may block nearby intersection(s) upstream of critical approach(es).	0.91-1.00
F	Total breakdown, stop-and-go operation.	Greater than 1.00
Source: *Interim Materials on Highway Capacity* (Circular 212, Transportation Research Board, 1980).		

The project results in an operational deficiency when the addition of project-generated traffic changes the LOS from E or better to LOS F. For facilities operating at LOS F without the project, direct project caused a operational deficiency is identified if the addition of project traffic increases the V/C ratio by 0.05 or more.

Unsignalized Intersections

For those intersections that are unsignalized level of service is determined for each movement based on the reserve capacity available. Reserve capacity is a function of demand and the critical gaps in traffic on the major street. The criteria for level of service at stop sign-controlled intersections are shown in Table TR-2.

At intersections with all-way stop control (i.e., all traffic stops), the overall level of service is based on the estimated delay for traffic on each of the approaches. The range of delay for each level of service is summarized in Table TR-3.

Table TR-2 Level of Service Characteristics for an Unsignalized Intersection with Two-Way Stop Control		
Level of Service	Interpretation	Reserve Capacity
A	Little or no delay.	≥400
B	Short traffic delays.	300 to 399
C	Average traffic delays.	200 to 299
D	Long traffic delays.	100 to 199
E	Very long traffic delays.	0 to 100
F	Stop-and-go conditions.	<0
Source: *Highway Capacity Manual* (Special Report 209, Transportation Research Board, 1985).		

Table TR-3 Level of Service Characteristics for an Unsignalized Intersection with All-Way Stop Control		
Level of Service	Interpretation	Average Vehicle Delay (in seconds)
A	Little or no delay.	≤5
B	Short traffic delays.	>5 and ≤10
C	Average traffic delays.	>10 and ≤20
D	Long traffic delays.	>20 and ≤30
E	Very long traffic delays.	>30 and ≤45
F	Stop-and-go conditions.	>45
Source:	*Interim Materials on Unsignalized Intersection Capacity* (Circular No. 373, Transportation Research Board, 1991).	

The project results in an operational deficiency if the addition of project traffic changes the LOS from E or better to F. For those intersections that are affected, an analysis of peak hour volumes is conducted to determine if a traffic signal is warranted.

Transit Facilities

Due to the general nature of this analysis and the limited existing service in proximity to the project site, the North Vineyard Station Specific Plan will result in an operational deficiency if:

- Implementation of the project disrupts or interferes with existing or planned transit operations and facilities of Regional Transit, or

- Implementation of the project conflicts with the transit-related goals, objectives and policies of the Sacramento County General Plan's Circulation Element.

Bicycle and Pedestrian Facilities

The North Vineyard Station Specific Plan results in an operational deficiency if:

- Implementation of the project disrupts or interferes with existing or planned bicycle facilities of the Sacramento City/County 2010 Bikeways Master Plan, or

- Implementation of the project conflicts with the bicycle and pedestrian related goals, objectives and policies of the Sacramento County General Plan's Circulation Element.

Project Trip Generation

Project-generated traffic from the North Vineyard Station Specific Plan area was estimated using the following process:

- Estimate vehicle trip ends for various land uses using standard trip generation rates;
- Adjust the total number of trips to account for internal and pass-by trips;
- Estimate transit utilization; and
- Determine net project trip generation.

Each step is summarized below and discussed in detail in the appendix.

Estimation Of Vehicle Trip Ends

The number of trips generated for each land use were applied to the proposed land uses to yield the total number of trips generated by the project. The daily, a.m. peak hour, and p.m. peak hour trip rates are shown in Table TR-4 for each land use.

Table TR-4 Trip Generation Rates For Various Land Uses				
Land Use	Units	Daily	AM Peak Hour	PM Peak Hour
Low Density Residential	d.u.	9.55	0.74	1.01
Medium Density Residential	d.u.	9.45	0.74	1.01
High Density Residential	d.u.	6.47	0.56	0.69
Elementary School	students	1.09	0.28	0.25
Business Park	ksf GFA	14.37	1.62	1.48
Commercial	ksf GLA	Depends on Size of Parcel		

Internalization and Pass-By Adjustments

The total number of trips generated by each land use was adjusted to account for internal and pass-by trips. Internal trips are those which begin and end within the project boundary. The following set of internalization rates were developed for the North Vineyard Station Specific Plan:

- Residential 14%
- Neighborhood Commercial 40%
- Community Commercial 30%
- Business Park 15%
- Elementary School 90%

For residential trips, the internalization rate was determined by assuming 80 percent of all non-residential internal trips would be home-based; this equates to a 14 percent internalization rate for residential uses.

Pass-by trips reflect those trips that are attracted from passing traffic already on the external street system. These types of trips occur for retail and commercial land uses. Given the types of retail and commercial land use proposed for the North Vineyard Station Specific Plan and the expected daily traffic volumes on the adjacent streets, pass-by factors of 20 percent for neighborhood commercial and 30 percent for community commercial were applied to the gross trip generation.

Transit Utilization

Transit utilization for the project was estimated using a two-step process. First, the number of vehicle-trips was converted to person-trips using a ratio of 1.15 persons per vehicle. The second step involved projecting the percentage of person-trips that would

utilize transit. The results shows the equivalent of approximately 3,620 daily transit trips. About 250 of these trips will occur in the a.m. peak hour while about 375 will occur during the p.m. peak hour.

Net Project Trip Generation

The project is expected to generate about 84,000 daily vehicle trips. About 16,780 or 20 percent of these trips will remain within the project area while about 67,260 will travel on the external street system. The single highest hour of trip generation will occur during the p.m. peak hour when about 10 percent of the total daily trips will be generated.

Residential trips represent just over 70 percent of the total gross daily vehicle trips with neighborhood and community commercial uses representing 29 percent. Because of internalization and pass-by trips, commercial uses represent only 20 percent of the net external vehicle-trips, whereas, residential, school, and park uses comprise 80 percent of this total.

Project Traffic Distribution

Traffic distribution under existing conditions is generally expected to favor areas to the north. This pattern is expected given that the project site is located in the southern area of the developed Sacramento region and, more importantly, is south of the employment base in downtown Sacramento.

Project Traffic Assignment

To accurately trace the expected paths of project-generated traffic at each intersection, a computer model of the project's internal roadways and the study area roadway system was developed using the TRAFFIX software package. Based on the trip distribution percentages, project trips were added to the existing traffic counts at the study intersections.

EXISTING CONDITIONS

Roadway Network

Plate TR-A shows the lane configurations of the study roadway segments under existing conditions and the location of the study intersections.

Access to the study area is provided by a system of roadways including Florin Road, Elk Grove-Florin Road, Bradshaw Road, and Calvine Road. These roadways provide access to regional facilities such as State Route 99 (SR 99) four miles to the west, U.S. Highway

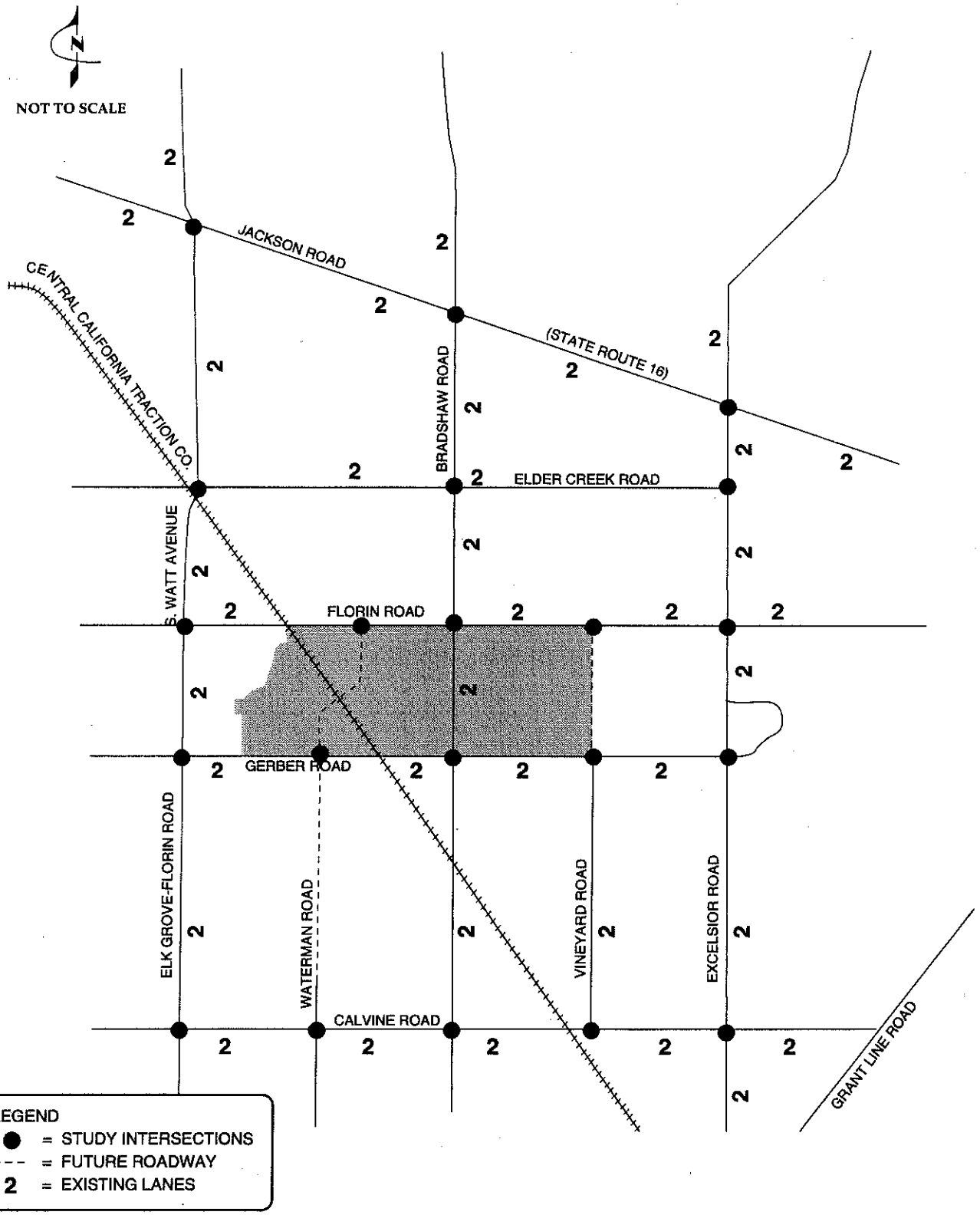


PLATE TR-A

STUDY INTERSECTIONS AND ROADWAYS

Fehr & Peers Associates, Inc.
Transportation Consultants

50 four miles to the north, and Jackson Road/SR 16 located two miles to the north.

Most of the existing roads serving the site are two-lane roadways. These facilities have narrow shoulders (some unpaved), speed limits of 35 to 55 miles per hour, and in some cases, travel lanes less than 12 feet wide. These roads provide access to agricultural and low-density residential uses on the project site.

Roadway segments that currently do not meet standards for roadway cross-sections (12-foot travel lanes and 6-foot usable shoulders) are:

- Excelsior Road from SR 16 to Calvine Road;
- Elder Creek Road from South Watt Avenue to Excelsior Road;
- Gerber Road from Vineyard Road to Excelsior Road;
- Vineyard Road from Gerber Road to Calvine Road;
- Calvine Road from Waterman Road to Grant Line Road; and
- Florin Road from Elk Grove-Florin Road to Excelsior Road.

Existing Traffic Volumes

Average daily traffic (ADT) volumes for roadways are shown on Plate TR-B. Existing peak hour volumes and lane configurations at each intersection are presented on Plate TR-C.

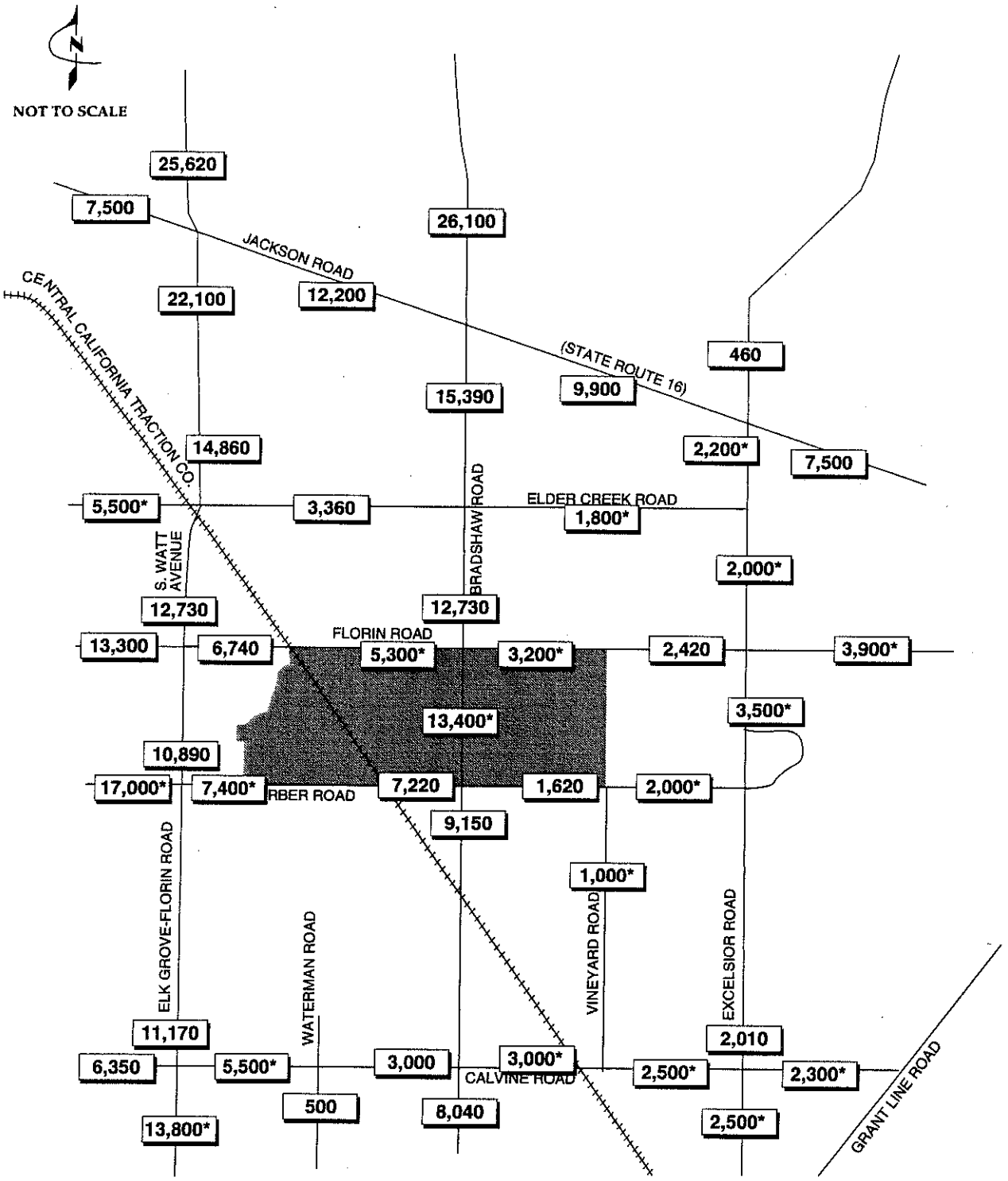
Existing Traffic Operations

With the exception of four roadway segments near SR 16, all of the existing roadway segments are operating at an acceptable level according to Sacramento County standards. The segments of South Watt Avenue (street name changes to Elk Grove-Florin Road south of Florin Road) and Bradshaw Road immediately north and south of SR 16 currently carry traffic volumes ranging from approximately 15,400 to 26,100 VPD and exceed the theoretical capacities.

All of the roadway segments noted above that do not meet minimum standards for roadway cross-sections currently serve more than 400 VPD. Therefore, all of these segments experience physical deficiencies under existing conditions.

Levels of service for study intersections are presented in Table TR-5.

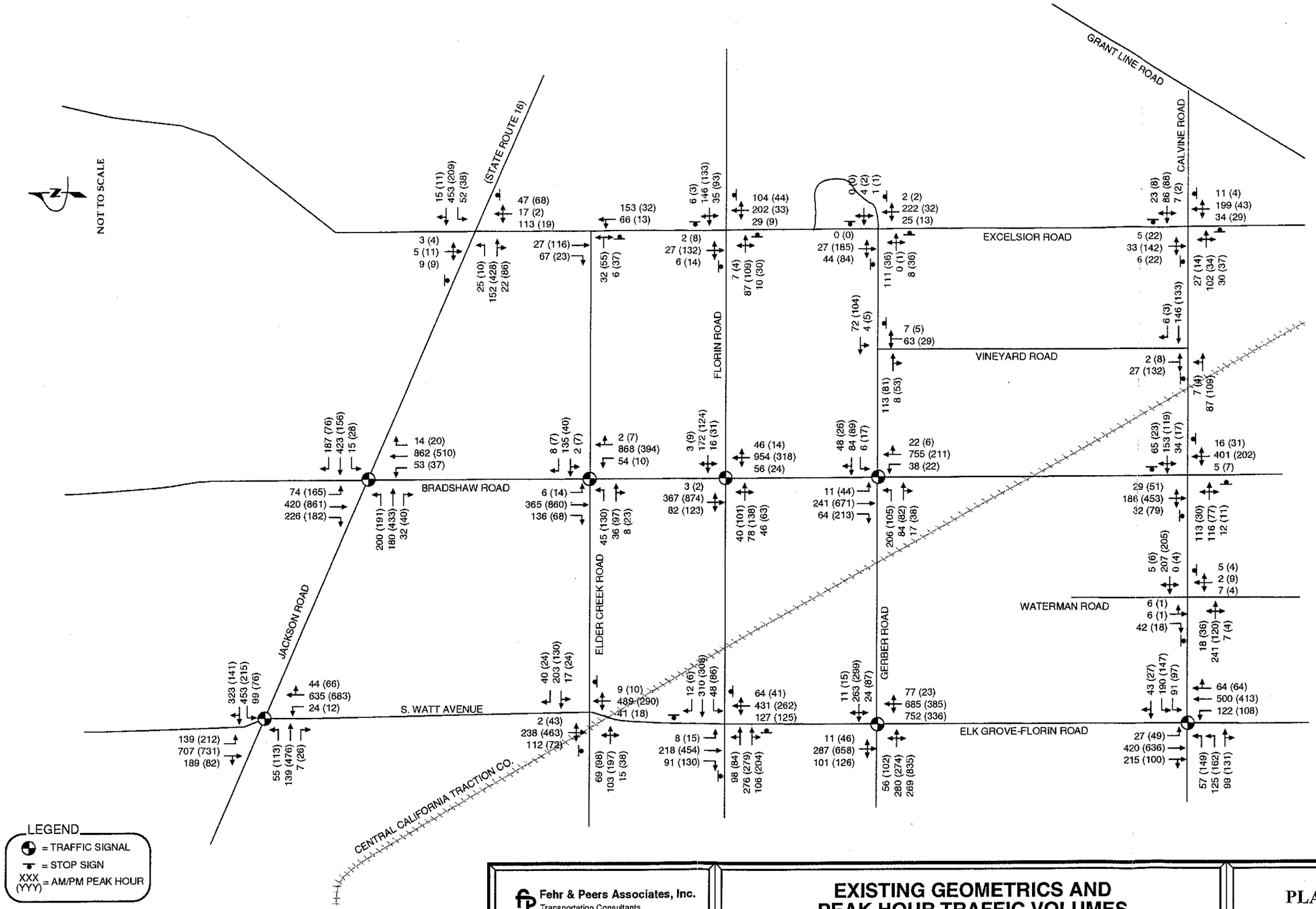
Under existing conditions, four of the study intersections operate at unacceptable levels (LOS F) during the a.m. and/or p.m. peak hours. These locations include:



XX,XXX = Daily Volume (* Signifies estimate from peak hour counts).

Source: Sacramento County Traffic Volume Map (1994) and Fehr & Peers Associates (1995).

PLATE TR-B	EXISTING DAILY VOLUMES	Fehr & Peers Associates, Inc. Transportation Consultants



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EXISTING GEOMETRICS AND PEAK HOUR TRAFFIC VOLUMES

PLATE TR-C

TABLE TR-5

Existing Intersection Level of Service					
		AM Peak Hour		PM Peak Hour	
Intersection	Traffic Control	V/C Ratio, Delay or RC[1]	LOS[2]	V/C Ratio or Delay or RC	LOS
S. Watt Avenue/Jackson Road	Signal	1.04	F	1.12	F
Bradshaw Road/Jackson Road	Signal	1.13	F	0.99	E
Bradshaw Road/Elder Creek Road	Signal	0.77	C	0.76	C
Bradshaw Road/Florin Road	Signal	0.89	D	0.82	D
Elk Grove-Florin Road/Gerber Road	Signal	1.05	F	1.30	F
Bradshaw Road/Gerber Road	Signal	0.82	D	0.66	B
Elk Grove-Florin Road/Calvine Road	Signal	0.52	A	0.60	A
Excelsior Road/Jackson Road	Two-way Stop	239	C	378	B
Excelsior Road/Elder Creek Road	Two-way Stop	709	A	616	A
Vineyard Road/Gerber Road	Two-way Stop	562	A	596	A
Excelsior Road/Gerber Road	Two-way Stop	432	A	547	A
Waterman Road/Calvine Road	Two-way Stop	489	A	677	A
Vineyard Road/Calvine Road	Two-way Stop	881	A	767	A
S. Watt Avenue/Elder Creek Road	All-way Stop	15.0 sec	C	37.0 sec	E
Excelsior Road/Florin Road	All-way Stop	6.0 sec	B	3.0 sec	A
Elk Grove-Florin Road/Florin Road	All-way Stop	36.0 sec	E	66.0 sec	F
Bradshaw Road/Calvine Road	All-way Stop	15.0 sec	C	14.0 sec	C
Excelsior Road/Calvine Road	All-way Stop	4.0 sec	A	3.0 sec	A

Notes: [1] V/C Ratio = Volume-to-Capacity Ratio (0.00 applies to signalized control); Delay = Average Total Delay (0.0 seconds applies to all-way stop control); and RC= Reserve Capacity (000 vehicles applies to two-way stop control).
[2] LOS = Level of Service

- South Watt Avenue at Jackson Road (a.m. and p.m. peak hour);
- Bradshaw Road at Jackson Road (a.m. peak hour);
- Elk Grove-Florin Road at Gerber Road (a.m. and p.m. peak our);
- Elk Grove-Florin Road at Florin Road (p.m. peak hour).

Of the two-way stop-controlled locations, all of the intersections operate at LOS A except the intersection of Excelsior Road at Jackson Road which operates at LOS D and LOS C during a.m. and p.m. peak hours, respectively. All of the all-way stop locations operate at acceptable service levels except Elk Grove-Florin Road/Florin Road which has an LOS F during the p.m. peak hour.

Signal warrant analyses were conducted at all unsignalized intersections operating at LOS C or worse. Signal warrant criteria were met at the South Watt Avenue/Elder Creek Road and Elk Grove-Florin Road/Florin Road intersections.

Transit System

At present, there are no transit services within the study area. The nearest bus routes operate on Kiefer Boulevard two miles to the north and on Power Inn Road two miles to the west of the project site.

Bicycle and Pedestrian Systems

Within the study area, the only existing bicycle facility is a Class II bikeway on Elk Grove-Florin Road from Florin Road to south of Calvine Road. Class II bikeways include a separate lane delineated for bicycles by striping and signs.

Other Transportation Facilities

A rail line operated and maintained by Central California Traction Railroad crosses the western portion of the project site between Hedge Avenue (east of Elk Grove-Florin Road) and Bradshaw Road. The railroad runs diagonally from northwest to southeast and includes existing at-grade crossings at Gerber Road and Florin Road. Current operations include one northbound train and one southbound train per day. The length of each train varies from two to 50 cars depending on demand.

EXISTING PLUS PROJECT CONDITIONS

Roadway System Operations

Arterial Roadway Segments: Plates TR-D and TR-E present daily and peak hour traffic volumes under existing plus project conditions. Several study roadway segments would be affected with the addition of project traffic.

Roadway Deficiencies Under Existing Plus Project Conditions:

EP-1: Implementation of the project would result in daily traffic volumes on the existing two-lane section **Elk Grove-Florin Road between Gerber Road and SR 16** that would exceed the theoretical capacity. The projected daily volume between SR 16 and Gerber Road ranges from 23,500 to 34,700 vehicles per day (VPD) with the project. North of SR 16, the volume is projected to be 35,100 VPD. These volumes exceed the rural and urban two-lane capacities of 15,000 and 18,000 VPD, respectively.

EP-2: Implementation of the project would result in daily traffic volumes on **Bradshaw Road between Gerber Road and SR 16** ranging from 32,900 to 28,000 VPD. North of SR 16, the daily volume with the project is estimated to be 32,400 VPD. All volumes exceed both the rural and urban two-lane capacities of 15,000 and 18,000 VPD, respectively.

EP-3: Implementation of the project would result in a daily volume on **Florin Road between Elk Grove-Florin Road (South Watt Avenue) and the proposed Waterman Road extension of** 28,800 VPD. This volume exceeds both the rural and urban two-lane capacities of 15,000 and 18,000 VPD, respectively.

EP-4: Implementation of the project would result in daily volumes on **Gerber Road between Elk Grove-Florin Road and Bradshaw Road** ranging from 21,900 to 25,000 VPD. West of Elk Grove-Florin Road, the daily volume is projected to be 23,500 VPD with the project. These volumes exceed both the rural and urban two-lane capacities of 15,000 and 18,000 VPD, respectively.

EP-5: Implementation of the project would result in a daily volume of 18,500 VPD on **SR 16 between Bradshaw Road and South Watt Avenue.** Although this volume exceeds the urban roadway capacity of 18,000 VPD by only 500 vehicles, operations on this segment would be deficient under existing plus project conditions.

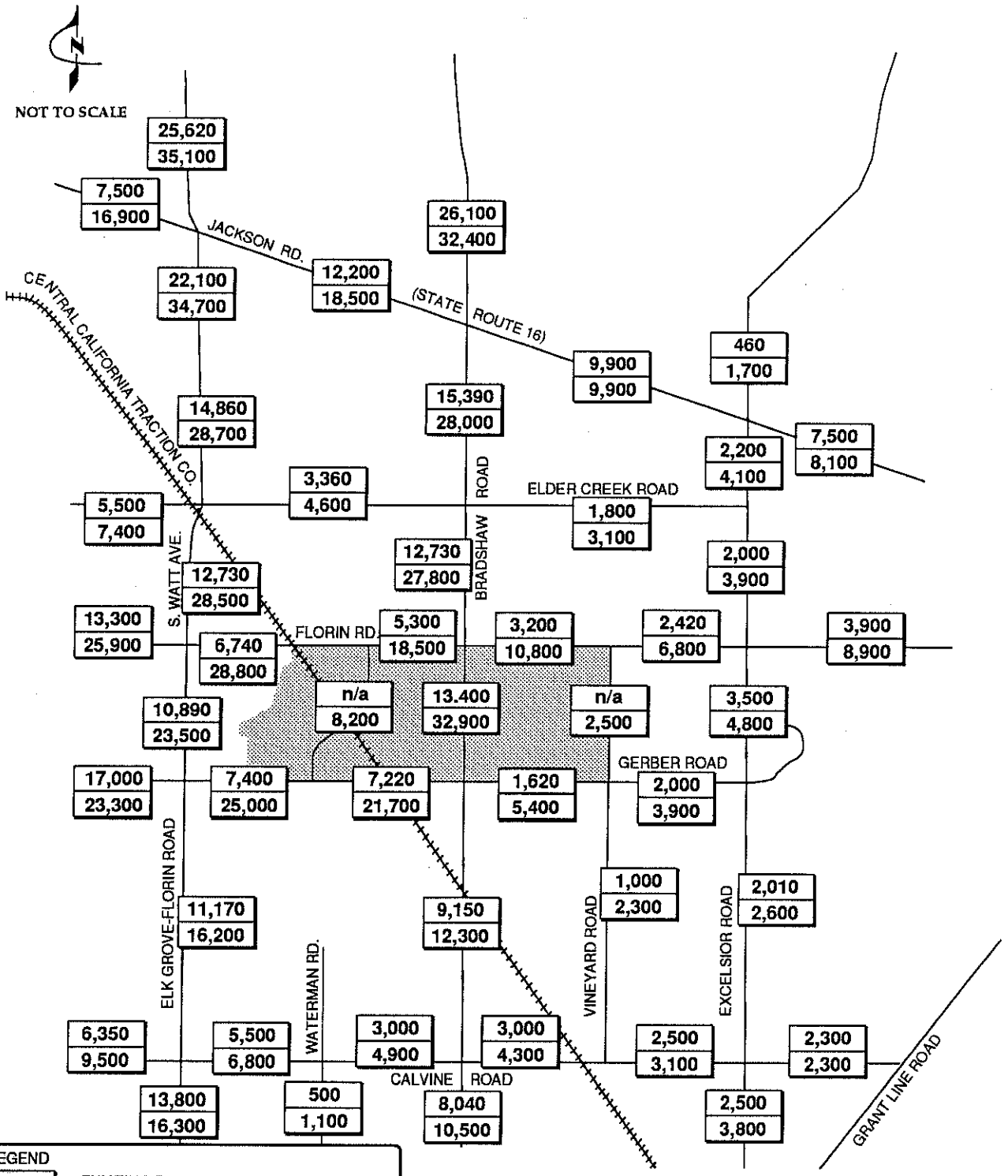
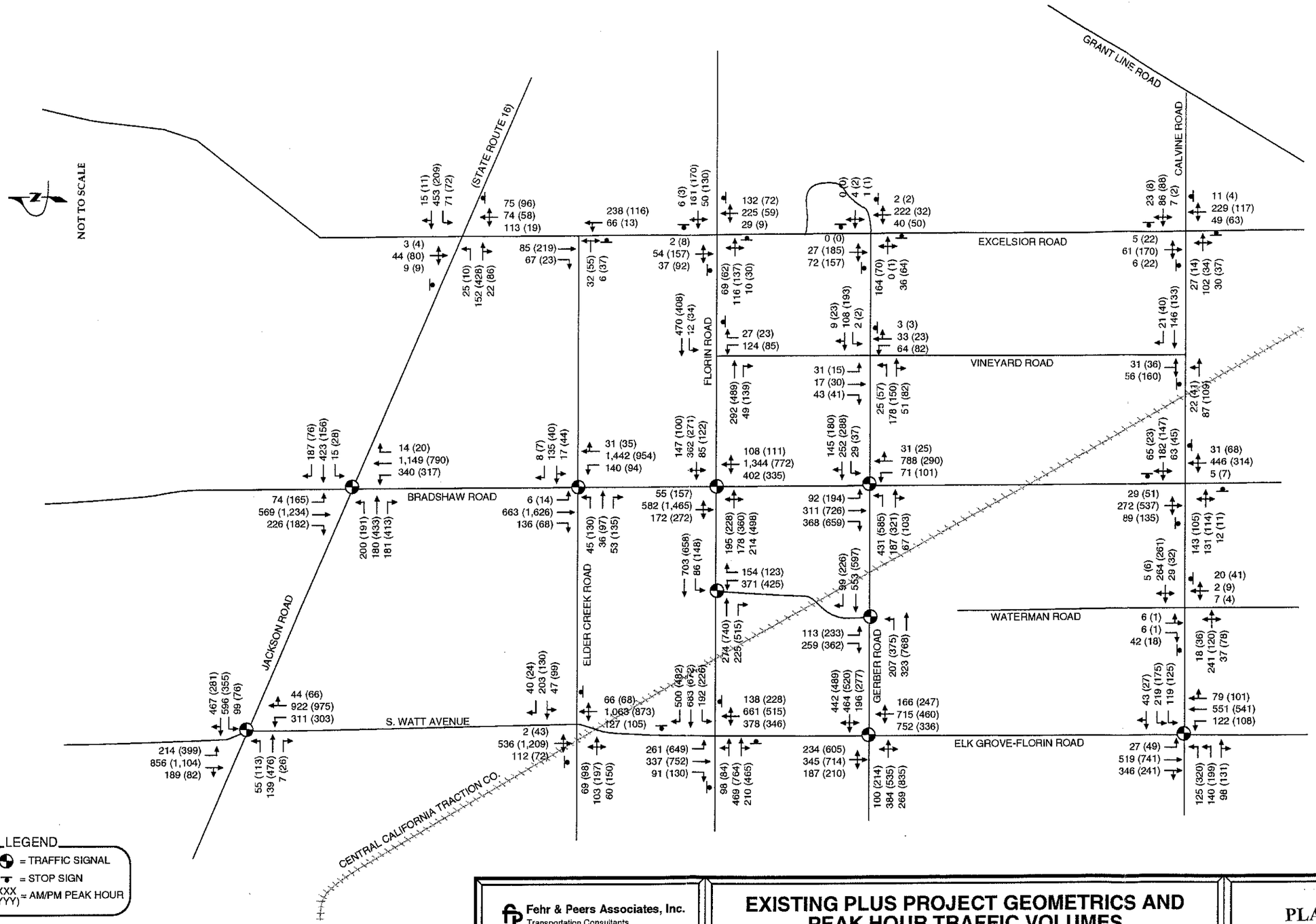


PLATE TR-D	EXISTING PLUS PROJECT DAILY VOLUMES	Fehr & Peers Associates, Inc. Transportation Consultants



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Transportation Consultants

EXISTING PLUS PROJECT GEOMETRICS AND PEAK HOUR TRAFFIC VOLUMES

PLATE TR-E

EP-6: Implementation of the project would add approximately 1,300 VPD to **Elder Creek Road between South Watt Avenue and Excelsior Road.** The addition of this traffic would exacerbate the existing physical deficiency caused by the substandard travel lane and shoulder widths.

EP-7: Implementation of the project would add approximately 600 to 1,900 VPD to **Excelsior Road between Jackson Road (SR 16) and Calvine Road.** Except in the vicinity of Birch Ranch Road, the addition of this traffic would exacerbate the existing physical deficiency caused by the substandard travel lane and shoulder widths.

EP-8: Implementation of the project would add approximately 4,400 to 7,600 VPD to **Florin Road between Bradshaw Road and Excelsior Road.** The addition of this traffic would exacerbate the existing physical deficiency caused by the substandard travel lane and shoulder widths.

EP-9: Implementation of the project would add approximately 1,900 to 3,800 VPD to **Gerber Road between Bradshaw Road and Excelsior Road.** The addition of this traffic would exacerbate the existing physical deficiency caused by the substandard travel lane and shoulder widths.

EP-10: Implementation of the project would add approximately 1,300 VPD to **Vineyard Road between Gerber Road and Calvine Road.** Except in the vicinity of the residential subdivision immediately north of Calvine Road, the addition of this traffic would exacerbate the existing physical deficiency caused by the substandard travel lane and shoulder widths.

EP-11: Implementation of the project would add approximately 600 to 1,900 VPD to **Calvine Road between Elk Grove-Florin Road and Excelsior Road.** Except in the vicinity of residential subdivisions near Waterman Road and Vineyard Road, the addition of this traffic would exacerbate the existing physical deficiency caused by the substandard travel lane and shoulder widths.

Study Intersections: Intersection LOS for existing plus project conditions are presented in Table TR-6.

As shown on Plates TR-D and TR-E, a new four-lane, north-south arterial will be constructed between Gerber and Florin Roads. The alignment for this roadway will be located approximately halfway between Elk Grove-Florin Road and Bradshaw Road and will ultimately be connected southward to the planned extension of Waterman Road from Vintage Park Drive north to Gerber Road. The proposed roadway will include a new at-

TABLE TR-6

Existing Plus Project Intersection Levels of Service

Intersection	Traffic Control	Existing AM (PM)		Existing Plus Project AM (PM)	
		V/C Ratio, Delay or RC[1]	LOS[2]	V/C Ratio, Delay or RC	LOS
S. Watt Avenue/Jackson Road	Signal	1.04 (1.12)	F (F)	1.46 (1.91)	F (F)
Bradshaw Road/Jackson Road	Signal	1.13 (0.99)	F (E)	1.34 (1.46)	F (F)
Bradshaw Road/Elder Creek Road	Signal	0.77 (0.76)	C (C)	1.25 (1.48)	F (F)
Bradshaw Road/Florin Road	Signal	0.89 (0.82)	D (D)	1.61 (2.02)	F (F)
Elk Grove-Florin Road/Gerber Road	Signal	1.05 (1.30)	F (F)	1.36 (1.58)	F (F)
Bradshaw Road/Gerber Road	Signal	0.82 (0.66)	D (B)	1.26 (1.37)	F (F)
Elk Grove-Florin Road/Calvine Road	Signal	0.52 (0.60)	A (A)	0.64 (0.73)	B (C)
Florin Road/Waterman Road	Signal	N/A	N/A	0.75 (0.92)	C (E)
Gerber Road/Waterman Road	Signal	N/A	N/A	0.66 (0.86)	B (D)
Excelsior Road/Jackson Road	Two-way Stop	239 (378)	C (B)	117 (158)	D (D)
Excelsior Road/Elder Creek Road	Two-way Stop	709 (616)	A (A)	628 (467)	A (A)
Vineyard Road/Gerber Road	Two-way Stop	567 (596)	A (A)	501 (406)	A (A)
Vineyard Road/Florin Road	Two-way Stop	N/A	N/A	209 (215)	C (C)
Excelsior Road/Gerber Road	Two-way Stop	432 (547)	A (A)	329 (397)	B (B)
Waterman Road/Calvine Road	Two-way Stop	489 (677)	A (A)	671 (737)	A (A)
Vineyard Road/Calvine Road	Two-way Stop	881 (767)	A (A)	658 (605)	A (A)
S. Watt Avenue/Elder Creek Road	All-way Stop	15.0 s (37.0 s)	C (E)	See Note 3	F (F)
Excelsior Road/Florin Road	All-way Stop	6.0 s (3.0 s)	B (A)	9.0 s (7.0 s)	B (B)
Elk Grove-Florin Road/Florin Road	All-way Stop	36.0 s (66.0 s)	E (F)	See Note 3	F (F)
Bradshaw Road/Calvine Road	All-way Stop	15.0 s (14.0 s)	C (C)	27.0 s (45.0 s)	D (E)
Excelsior Road/Calvine Road	All-way Stop	4.0 s (3.0 s)	A (A)	5.0 s (3.0 s)	A (A)

Notes: [1] V/C Ratio = Volume-to-Capacity Ratio (0.00 applies to signalized control); Delay = Average Total Delay (0.0 seconds applies to all-way stop control); and RC= Reserve Capacity (000 vehicles applies to two-way stop control).
[2] LOS = Level of Service.
[3] Intersection is substantially over capacity and delay calculation is meaningless.
N/A = Not applicable.

grade crossing of the Central California Traction Railroad and will require the alignment to curve such that the roadway crosses the railroad tracks at nearly a perpendicular angle. In addition, Vineyard Road will be extended from its current terminus at Gerber Road to Florin Road. The Vineyard Road extension will be constructed to accommodate four travel lanes consistent with the Sacramento County General Plan Transportation Map. All of the new intersections are included in Table TR-6.

Twelve of the 19 study intersections under existing plus project conditions are projected to operate at LOS E or better. The remaining seven intersections would operate at LOS F under the a.m. and/or p.m. peak hour with the proposed project. All of the unsignalized intersections operating at LOS C or lower were analyzed to determine if traffic signals would be warranted. The analysis showed that traffic signals would be warranted at Bradshaw Road and Calvine Road with the addition of project traffic. Signals are already warranted without the project at the South Watt Avenue/Elder Creek Road and Elk Grove-Florin Road/Florin Road intersections and the addition of project traffic would further degrade operations.

Intersection Deficiency Under Existing Plus Project Conditions:

EP-12: Implementation of the project would cause the intersection of **South Watt Avenue at Jackson Road (SR 16)** to operate at LOS F during both the a.m. and p.m. peak hour.

EP-13: Implementation of the project would exacerbate LOS F conditions at the **Bradshaw Road/Jackson Road** intersection during the a.m. peak hour and would worsen conditions from LOS E to F in the p.m. peak hour.

EP-14: Implementation of the project would cause the intersection of **Bradshaw Road at Elder Creek Road** to operate at LOS F during both the a.m. and p.m. peak hour.

EP-15: Implementation of the project would cause operating conditions at the **Bradshaw Road/Florin Road** intersection to worsen from LOS D to F during both the a.m. and p.m. peak hours.

EP-16: Implementation of the project would exacerbate LOS F operating conditions at the **Elk Grove-Florin Road/Gerber Road** intersection during the a.m. and p.m. peak hours.

EP-17: Implementation of the project would exacerbate LOS F operating

conditions at the **Bradshaw Road/Gerber Road** intersection during the a.m. and p.m. peak hours.

EP-18: Implementation of the project would result in LOS F operations at the **South Watt Avenue/Elder Creek Road** intersection during the a.m. and p.m. peak hours.

EP-19: Implementation of the project would worsen operating conditions at the **Elk Grove-Florin Road/Florin Road** intersection from LOS E to F in the a.m. peak hour and would exacerbate LOS F operations in the p.m. peak hour.

Transit System Operations

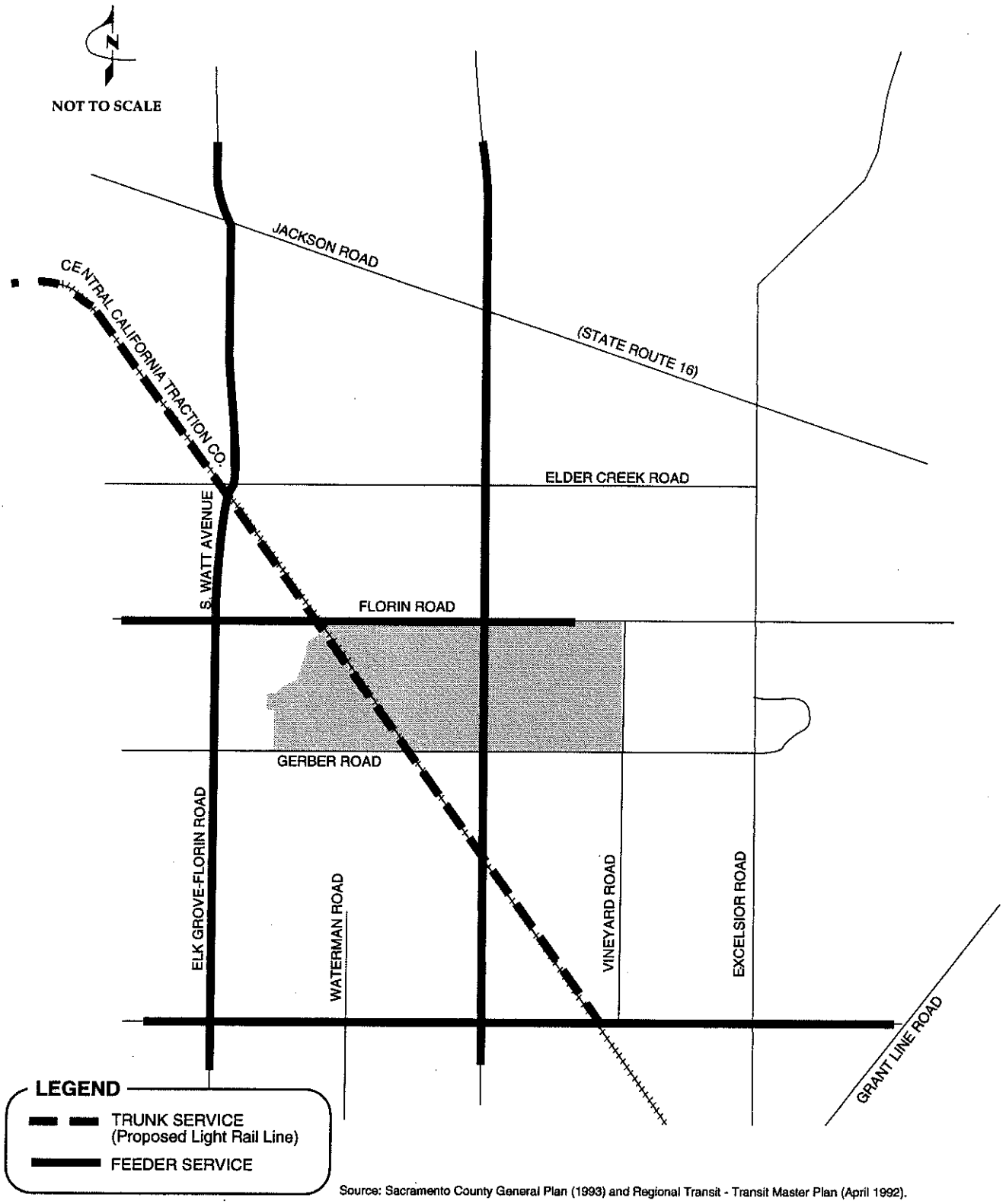
The Sacramento Regional Transit (RT) master plan and the County's General Plan, show feeder bus service (i.e., a major transit corridor) planned for the entire length of Elk Grove-Florin Road, Bradshaw Road, and Calvine Road within the study area. Feeder service is also planned for Florin Road from west of Elk Grove-Florin Road to the planned Vineyard Road extension. Planned corridors are shown on Plate TR-F.

Besides providing area-wide bus service, these corridors are intended to support "trunk" transit service along the Central California Traction Railroad alignment. This corridor is currently planned for a future light rail extension, which would include stations at or near crossings of all major arterial streets; however, an interim facility on this alignment may include a high occupancy vehicle (HOV) thoroughfare for buses according to RT planning staff. RT staff recommended that bus stop locations should not be identified as part of the transportation analysis. Future planning studies will be conducted to determine transit routes and schedules.

Roadways within the specific plan area will be designed to accommodate transit facilities such as turnouts, bus stops, and shelters should individual routes be designated on major collector streets. Thus, implementation of the proposed project will not disrupt or interfere with existing or planned transit operations in the area and no operational deficiencies were identified.

Bicycle and Pedestrian System Operations

The circulation plan for the NVSSP proposes on-street bike lanes for all streets bordering the plan area, as well as on the major arterial and collector street segments within the project consistent with the 2010 Sacramento City/County Bikeway Master Plan.



Source: Sacramento County General Plan (1993) and Regional Transit - Transit Master Plan (April 1992).

PLATE TR-F	FUTURE TRANSIT SERVICE	Fehr & Peers Associates, Inc. Transportation Consultants

Sidewalks will be constructed on all streets within the plan area and on the roadways bordering the project site. Several off-street bicycle/pedestrian trails will be constructed within the specific plan area as illustrated on Plate TR-G.

The project does not directly disrupt, interfere or conflict with existing or planned bicycle or pedestrian facilities; consequently, no operational deficiencies were identified.

Proposed Improvements

The following improvements are proposed to eliminate the projected deficiencies identified above. Each improvement is listed according to the reference number of the previously identified deficiency.

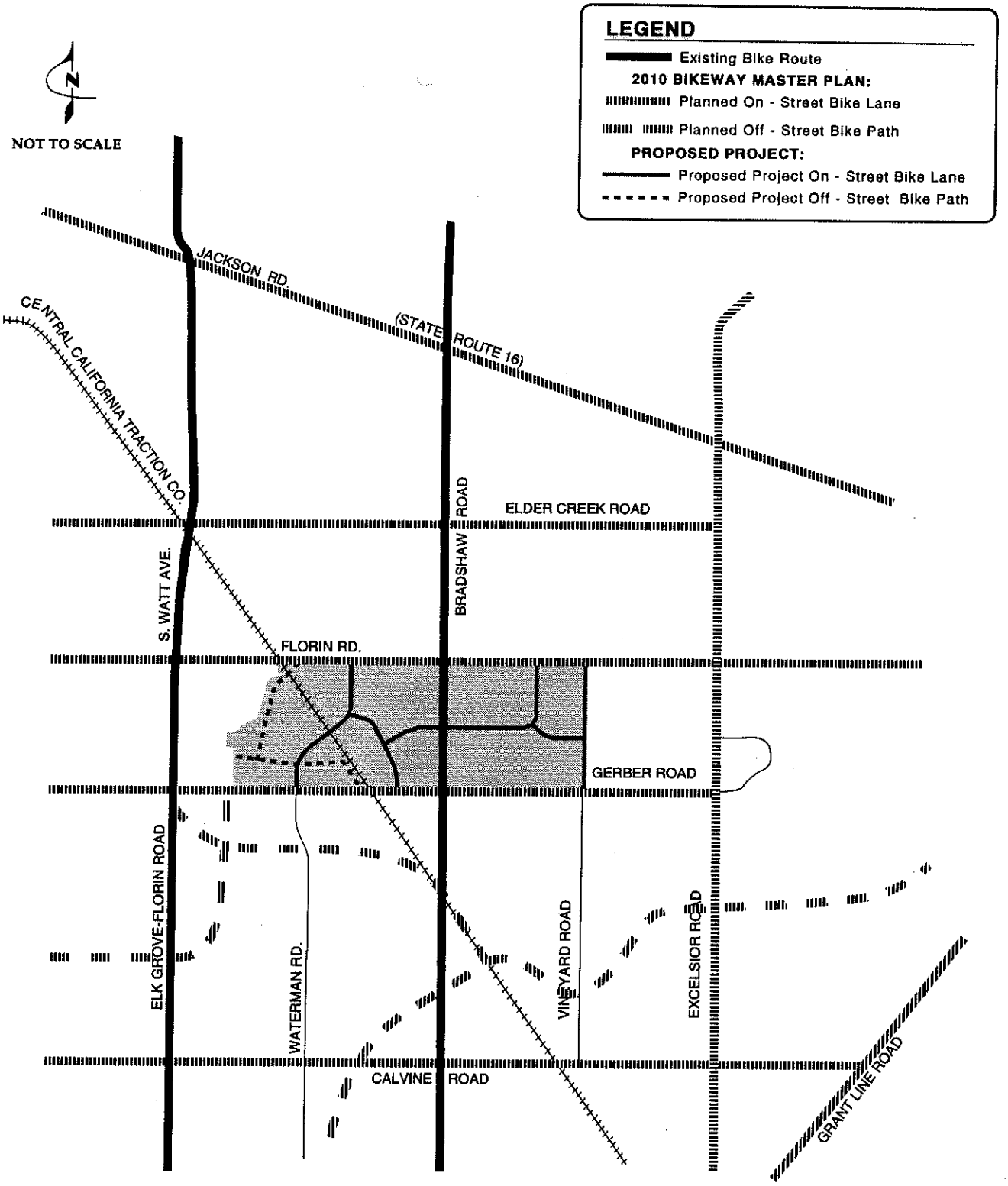
Improvement EP-1: Widen the section of **Elk Grove-Florin Road/South Watt Avenue from Gerber Road to SR 16** from two to four lanes. This improvement should be constructed when the daily volume on this segment reaches 16,200 VPD (90 percent of urban arterial capacity).

Improvement EP-2: Widen the section of **Bradshaw Road from Gerber Road to SR 16** from two to four lanes. This improvement is part of a funded project that will be constructed by year 2001 according to Sacramento County's *1996 Transportation Improvement Plan.*

Improvement EP-3: Widen the section of **Florin Road from South Watt Avenue to Bradshaw Road** from two to four lanes. This improvement should be constructed when the daily volume on this segment reaches 16,200 VPD (90 percent of urban arterial capacity).

Improvement EP-4: Widen the section of **Gerber Road from Elk Grove-Florin Road to Bradshaw Road** from two to four lanes. This improvement should be constructed when the volume on this segment reaches 16,200 VPD (90 percent of urban arterial capacity).

Improvement EP-5: Widen the section of **SR 16 from South Watt Avenue to Bradshaw Road** from two to four lanes. This improvement should be constructed when the daily volume on this segment reaches 16,200 VPD or 90 percent of urban arterial capacity.



Source: 2010 Sacramento City/County Bikeway Master Plan DEIR (September 1992) and Circulation Exhibit for North Vineyard Station Specific Plan (Reiners, Inc., January 1996).

PLATE TR-G	FUTURE BICYCLE FACILITIES	Fehr & Peers Associates, Inc. Transportation Consultants

Improvement EP-6: Widen **Elder Creek Road between South Watt Avenue and Excelsior Road** to include 12-foot travel lanes and minimum 6-foot shoulders to meet Sacramento County design standards for rural arterials. This improvement will eliminate the existing physical deficiency and the deficiency with the project.

Improvement EP-7: Widen **Excelsior Road between Jackson Road and Calvine Road** to include 12-foot travel lanes and minimum 6-foot shoulders to meet Sacramento County design standards for rural arterials. This improvement will eliminate the existing physical deficiency and the deficiency with the project.

Improvement EP-8: Widen **Florin Road between Bradshaw Road and Excelsior Road** to include 12-foot travel lanes and minimum 6-foot shoulders to meet Sacramento County design standards for rural arterials. This improvement will eliminate the existing physical deficiency and the deficiency with the project.

Improvement EP-9: Widen **Gerber Road Bradshaw Road and Excelsior Road** to include 12-foot travel lanes and minimum 6-foot shoulders to meet Sacramento County design standards for rural arterials. This improvement will eliminate the existing physical deficiency and the deficiency with the project.

Improvement EP-10: Widen **Vineyard Road between Gerber Road and Calvine Road** to include 12-foot travel lanes and minimum 6-foot shoulders to meet Sacramento County design standards for rural arterials. This improvement will eliminate the existing physical deficiency and the deficiency with the project. Widening of this roadway is anticipated as part of frontage improvements in the Vineyard Springs Comprehensive Planning Area.

Improvement EP-11: Widen **Calvine Road between approximately 1,300 feet east of Waterman Road to Excelsior Road** to include 12-foot travel lanes and minimum 6-foot shoulders to meet Sacramento County design standards for rural arterials. The section of Calvine Road from Elk Grove-Florin Road to approximately 1,300 feet east of Waterman Road will be

widened from two to four lanes as part of a funded project included in Sacramento County's *1996 Transportation Improvement Plan.* This improvement will eliminate the existing physical deficiency and the deficiency with the project.

Improvement EP-12: Modify the intersection of **South Watt Avenue at Jackson Road** to include a separate left turn lane, two through lanes, and a separate right turn lane on all approaches. These measures would improve operations at this intersection to LOS D and LOS E in the a.m. and p.m. peak hours, respectively. Improvements should be implemented when the intersection operates unacceptably based on Sacramento County standards.

Improvement EP-13: Modify the **Bradshaw Road/Jackson Road** intersection to include the following lane configurations:

- Dual left turn lanes, two through lanes, and a separate right turn lane on the northbound and southbound approaches; and

- One left turn lane, one through lane, and a separate right-turn lane on the eastbound and westbound approaches.

The provision of northbound and southbound dual left turn lanes will require widening of the eastbound and westbound departure legs on Jackson Road to two lanes before merging to a single travel lane. The length and merging distance for these lanes will need approval by Caltrans since Jackson Road is a state highway.

These improvements would improve operations at this intersection to LOS E in the a.m. and p.m. peak hours. According to Sacramento County's *1996 Transportation Improvement Plan*, two northbound through lanes and one southbound through lane will be constructed in 1997. The remaining improvements should be implemented when the intersection operates unacceptably based on Sacramento County standards.

Improvement EP-14: Modify the **Bradshaw Road/Elder Creek Road** intersection to

include the following lane configurations:

- One left turn lane, two through lanes, and a separate right turn lane on the southbound approach;

- One left turn lane, one through lane, and a shared through/right-turn lane on the northbound approach;

- One left turn lane and one shared through/right-turn lane on the eastbound approach; and

- One shared left-turn/through lane and one separate right turn lane on the westbound approach.

These improvements would improve operations at this intersection to LOS C and LOS D in the a.m. and p.m. peak hours, respectively. Improvements should be implemented when the intersection operates unacceptably based on Sacramento County standards.

Improvement EP-15: Modify the **Bradshaw Road/Florin Road** intersection to include the following lane configurations:

- Dual left turn lanes, two through lanes, and a separate right turn lane on the northbound and southbound approaches; and

- One left turn lane, two through lanes, and a separate right-turn lane on the eastbound and westbound approaches.

The provision of southbound dual left turn lanes will require widening of the eastbound departure legs on Florin Road to two lanes before merging to a single travel lane. The length and merging distance for these lanes will be approved by Sacramento County Transportation Division staff. The westbound departure leg will be widened as part of Improvement EP-3.

These improvements would improve operations at this intersection to LOS C and LOS E in the a.m. and p.m. peak hours, respectively. Improvements should be implemented when the intersection operates unacceptably based on Sacramento County standards.

Improvement EP-16: Modify the **Elk Grove-Florin Road/Gerber Road** intersection to include the following lane configurations:

- Dual left turn lanes, two through lanes, and a separate right turn lane on the northbound and southbound approaches;

- One left turn lane, one through lane, and a separate right-turn lane on the eastbound approach; and

- One left turn lane, one through lane, and a shared through/right-turn lane on the westbound approach.

The provision of northbound dual left turn lanes will require widening of the westbound departure leg on Gerber Road to two lanes before merging to a single travel lane in each direction. The length and merging distance for these lanes will be approved by Sacramento County Transportation Division staff.

These improvements would improve operations at this intersection to LOS D and LOS E in the a.m. and p.m. peak hours, respectively. Improvements should be implemented when the intersection operates unacceptably based on Sacramento County standards.

Improvement EP-17: Modify the **Bradshaw Road/Gerber Road** intersection to include the following lane configurations:

- Dual left turn lanes, two through lanes, and a separate right turn lane on the eastbound and westbound approaches; and

- One left turn lane, two through lanes, and a separate right-turn lane on the northbound and southbound approaches.

The provision of southbound dual left turn lanes will require widening of the eastbound departure leg on Gerber Road to two lanes before merging to a single travel lane in each direction. The length and merging distance for these lanes will be approved by Sacramento County Transportation Division staff.

These improvements would improve operations at this intersection to LOS D and LOS C in the a.m. and p.m. peak hours, respectively.

Improvements should be implemented when the intersection operates unacceptably based on Sacramento County standards.

Improvement EP-18: Install a signal at the **South Watt Avenue/Elder Creek Road** intersection and modify the lane configurations to include the following:

- One left turn lane, two through lanes, and a separate right turn lane on the northbound and southbound approaches; and

- One left turn lane and a shared through/right-turn lane on the eastbound and westbound approaches.

These improvements would improve operations at this intersection to LOS B and LOS D in the a.m. and p.m. peak hours, respectively. (It should be noted that a signal is warranted at this location under existing conditions without the NVSSP). Improvements should be implemented with construction of the project.

Improvement EP-19: Install a signal at the **Elk Grove-Florin Road/Florin Road** intersection and modify the lane configurations to include:

- Dual left-turn lanes, two through lanes, and a separate right turn lane on the northbound and southbound approaches; and

- One left-turn lane, two through lanes, and a separate right-turn lane on the eastbound and westbound approaches.

These improvements would improve operations at this intersection to LOS B and LOS D in the a.m. and p.m. peak hours, respectively. (It should be noted that a signal is warranted at this location under existing conditions without the NVSSP). The traffic signal is a funded project that will be constructed by 1998 according to Sacramento County's *1996 Transportation Improvement Plan.*

Operations with Proposed Improvements

Following implementation of the proposed improvements, the associated operational deficiencies would be eliminated. Table TR-7 shows the LOS at the study intersections after implementation of the proposed improvements.

TABLE TR-7

Existing Plus Project Intersection Levels of Service with Improvements

Intersection	Traffic Control	AM Peak Hour		PM Peak Hour	
		V/C Ratio, Delay or RC[1]	LOS[2]	V/C Ratio, Delay or RC	LOS
S. Watt Avenue/Jackson Road	Signal	0.82	D	0.94	E
Bradshaw Road/Jackson Road	Signal	0.90	E	0.91	E
Bradshaw Road/Elder Creek Road	Signal	0.71	C	0.89	D
Bradshaw Road/Florin Road	Signal	0.78	C	0.99	E
Elk Grove-Florin Road/Gerber Road	Signal	0.85	D	1.00	E
Bradshaw Road/Gerber Road	Signal	0.85	D	0.72	C
Elk Grove-Florin Road/Calvine Road	Signal	0.64	B	0.73	C
Florin Road/Waterman Road	Signal	0.75	C	0.92	E
Gerber Road/Waterman Road	Signal	0.66	B	0.86	D
Excelsior Road/Jackson Road	Two-way Stop	117	D	158	D
Excelsior Road/Elder Creek Road	Two-way Stop	628	A	467	A
Vineyard Road/Gerber Road	Two-way Stop	501	A	406	A
Vineyard Road/Florin Road	Two-way Stop	209	C	215	C
Excelsior Road/Gerber Road	Two-way Stop	329	B	397	B
Waterman Road/Calvine Road	Two-way Stop	671	A	737	A
Vineyard Road/Calvine Road	Two-way Stop	658	A	605	A
S. Watt Avenue/Elder Creek Road	Signal	0.62	B	0.84	D
Excelsior Road/Florin Road	All-way Stop	9.0 s	B	7.0 s	B
Elk Grove-Florin Road/Florin Road	Signal	0.67	B	0.89	D
Bradshaw Road/Calvine Road	All-way Stop	27.0 s	D	45.0 s	E
Excelsior Road/Calvine Road	All-way Stop	5.0 s	A	3.0 s	A

Notes: [1] V/C Ratio = Volume-to-Capacity Ratio (0.00 applies to signalized control); Delay = Average Total Delay (0.0 seconds applies to all-way stop control); and RC= Reserve Capacity (000 vehicles applies to two-way stop control).
[2] LOS = Level of Service.
[3] Intersection is substantially over capacity and delay calculation is meaningless.
N/A = Not applicable

CUMULATIVE OPERATING CONDITIONS

Planned Transportation Improvements

Roadway Improvements: The cumulative analysis determines if planned roadway improvements in the study area are sufficient to accommodate anticipated traffic growth. The planned roadway improvements in the vicinity of the project site are identified on the Sacramento County General Plan Transportation Map and listed below.

- Jackson Road/State Route (SR) 16 will be widened to six lanes from west of South Watt Avenue to Bradshaw Road. From Bradshaw Road to east of Excelsior Road, SR 16 is planned to be four lanes.

- Elk Grove-Florin Road/South Watt Avenue will be widened to six lanes from south of Calvine Road to north of Jackson Road/SR 16.

- Bradshaw Road will be widened to six lanes from Calvine Road to north of Jackson Road/SR 16. South of Calvine Road, Bradshaw Road will be a four-lane facility.

- Vineyard Road will be widened to four lanes from Calvine Road to Gerber Road. Vineyard Road will be extended to Florin Road as a four-lane facility.

- Florin Road will be widened to six lanes from west of Elk Grove-Florin Road/South Watt Avenue to the planned Vineyard Road extension. From the Vineyard Road extension to east of Excelsior Road, Florin Road will be widened to four lanes.

- Gerber Road will be widened to four lanes from west of Elk Grove-Florin Road to the planned Vineyard Road extension. From the Vineyard Road extension to east of Excelsior Road, Gerber Road will include two travel lanes. This two lane section is planned to be widened to four lanes after 2010.

- Calvine Road will be widened to six lanes from west of Elk Grove-Florin Road to Grant Line Road.

- Elder Creek Road will be widened to four lanes from west of South Watt Avenue to Bradshaw Road. East of Bradshaw Road, Elder Creek Road will continue to

function as a two-lane roadway.

Plate TR-H illustrates the planned number of lanes on each roadway segment under cumulative conditions. All of the study intersections are assumed to be signalized under this scenario.

Funding for most of the improvements listed above will ultimately be provided by a financing plan for the study area, other developer fees, and public sources. Public funds will be necessary for a fair share contribution to improvements that eliminate existing deficiencies.

Other Improvements:

- The study area is expected to be served by Sacramento Regional Transit (RT) and planned facilities will include bus stops, bus shelters, and turnouts. A multimodal transfer facility and park and ride lot is planned within the project site to accommodate light rail service within the Central California Traction Railroad (CCTR) right-of-way.

- The NVSSP area will include various on-street bike lanes and off-street bike paths and pedestrian trails. In addition, off-street pedestrian and bicycle trails will be constructed along Elder Creek and Gerber Creek west of the CCTR tracks.

Roadway System Operations

Cumulative No Project Volumes

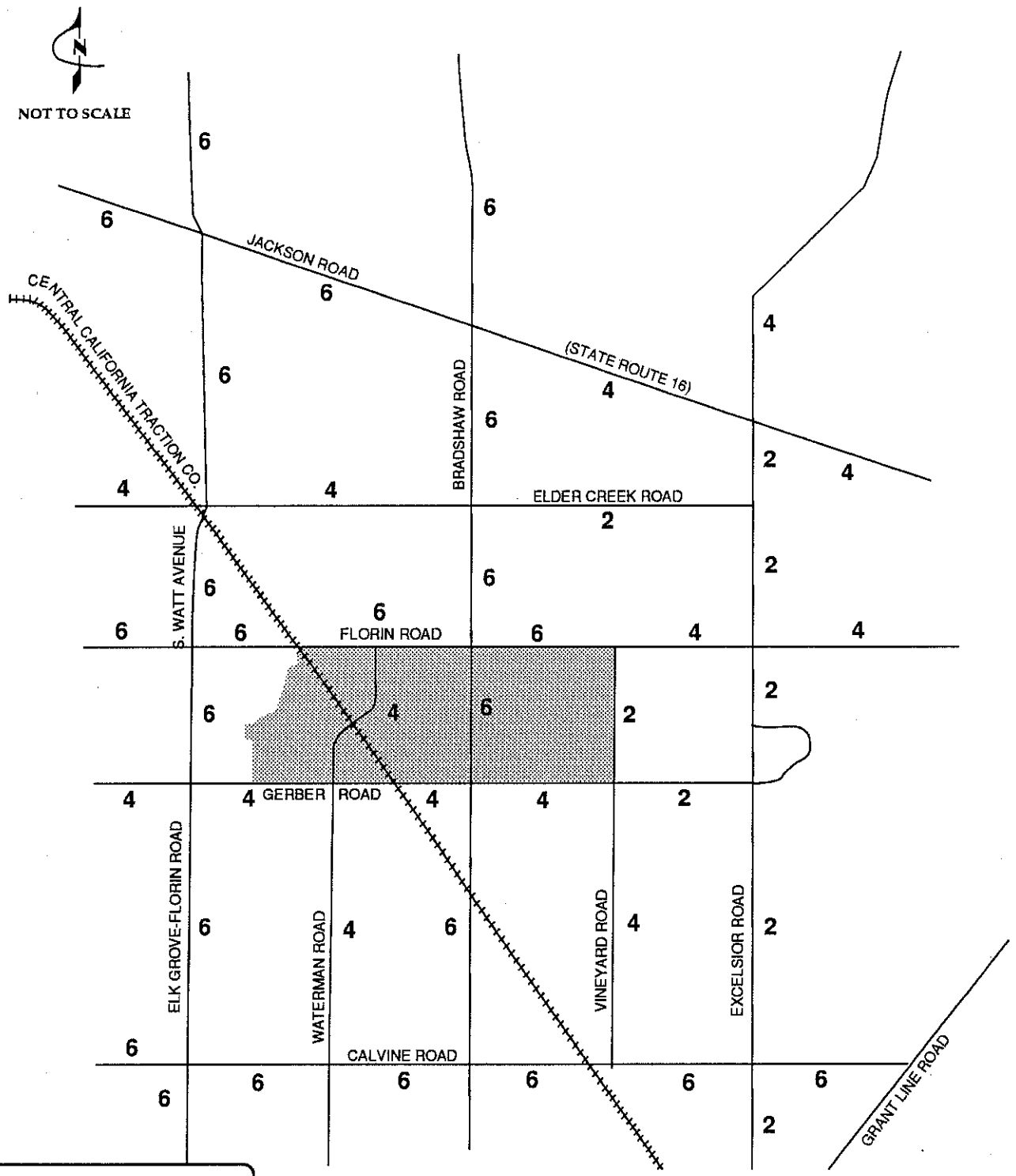
The cumulative no project daily and peak hour traffic volumes are shown on Plates TR-I and TR-J, respectively.

Cumulative Plus Project Volumes

Plates TR-K and TR-L present the daily and peak hour traffic volumes, respectively, for cumulative conditions with the NVSSP in place. Impacts to each element of the study roadway system are presented below.

Arterial Roadway Segments

Under cumulative no project conditions, none of the study roadway segments is projected



LEGEND:

2 = PLANNED LANES

SOURCE: SACRAMENTO COUNTY GENERAL PLAN - TRANSPORTATION PLAN MAP (DECEMBER 15, 1993).

PLATE TR-H	**PLANNED CUMULATIVE ROADWAY NETWORK**	Fehr & Peers Associates, Inc. Transportation Consultants

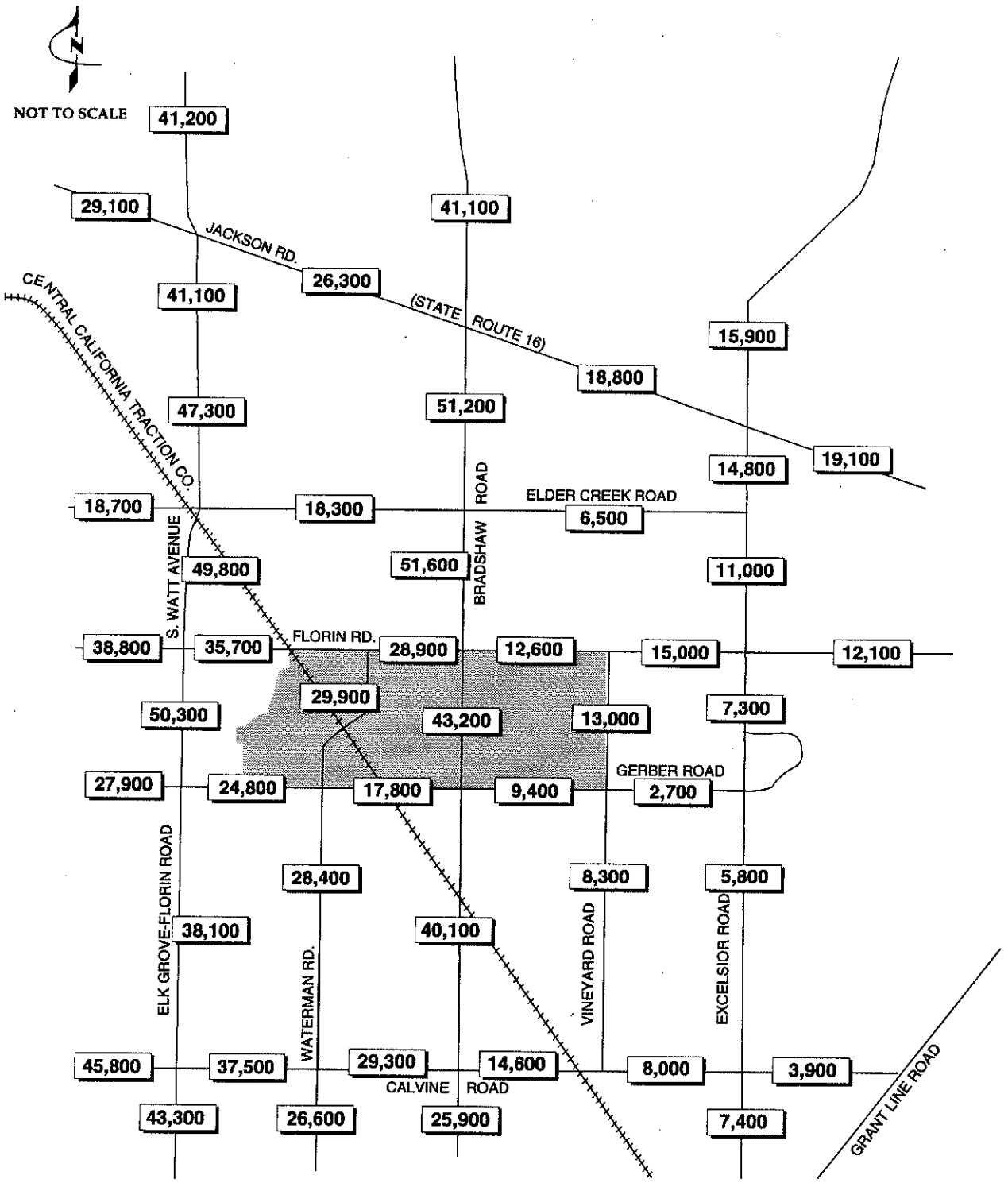
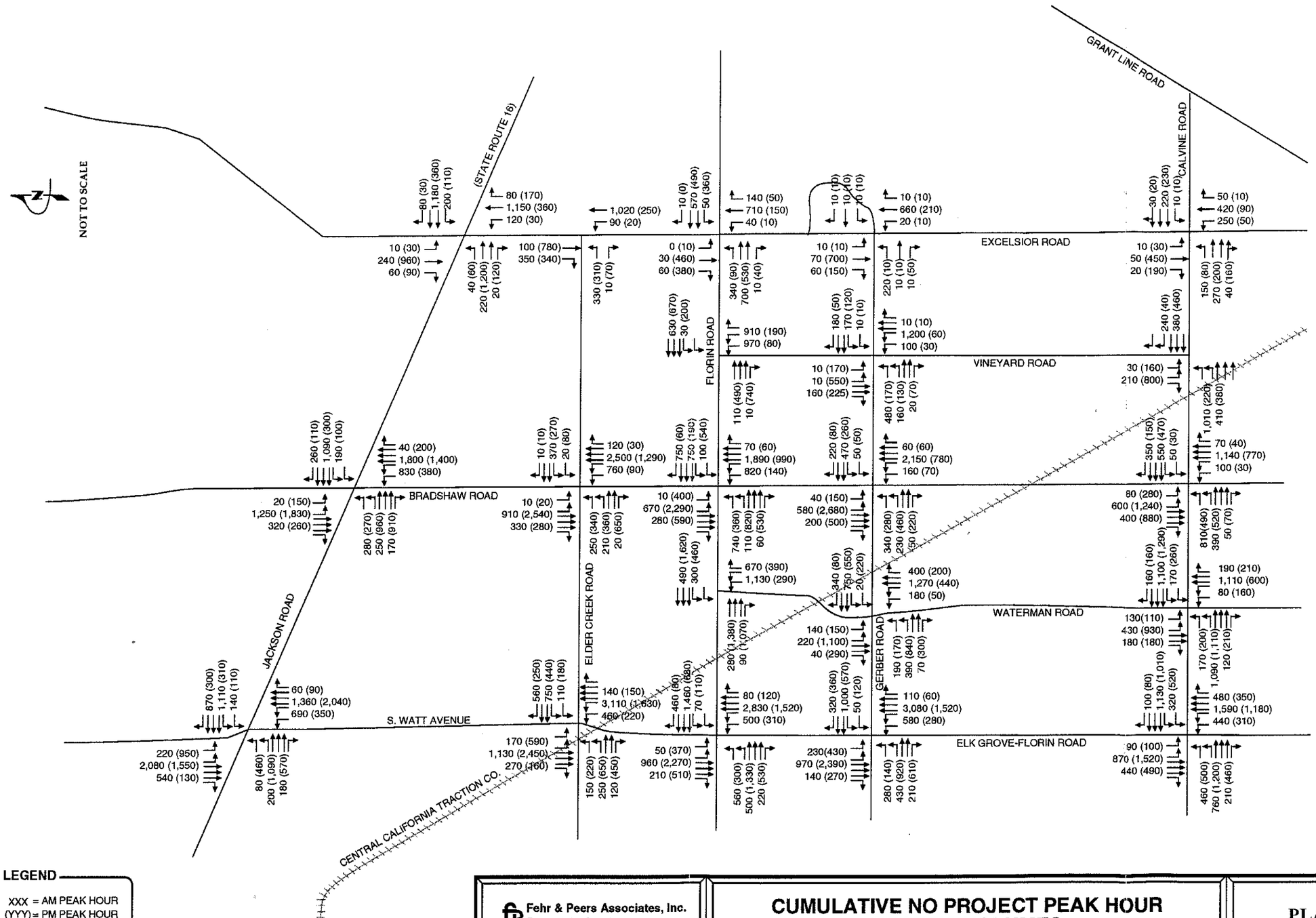


PLATE TR-I	CUMULATIVE NO PROJECT DAILY VOLUMES	Fehr & Peers Associates, Inc. Transportation Consultants



LEGEND

XXX = AM PEAK HOUR
(YYY) = PM PEAK HOUR

Fehr & Peers Associates, Inc.
Transportation Consultants

CUMULATIVE NO PROJECT PEAK HOUR TRAFFIC VOLUMES

PLATE TR-J

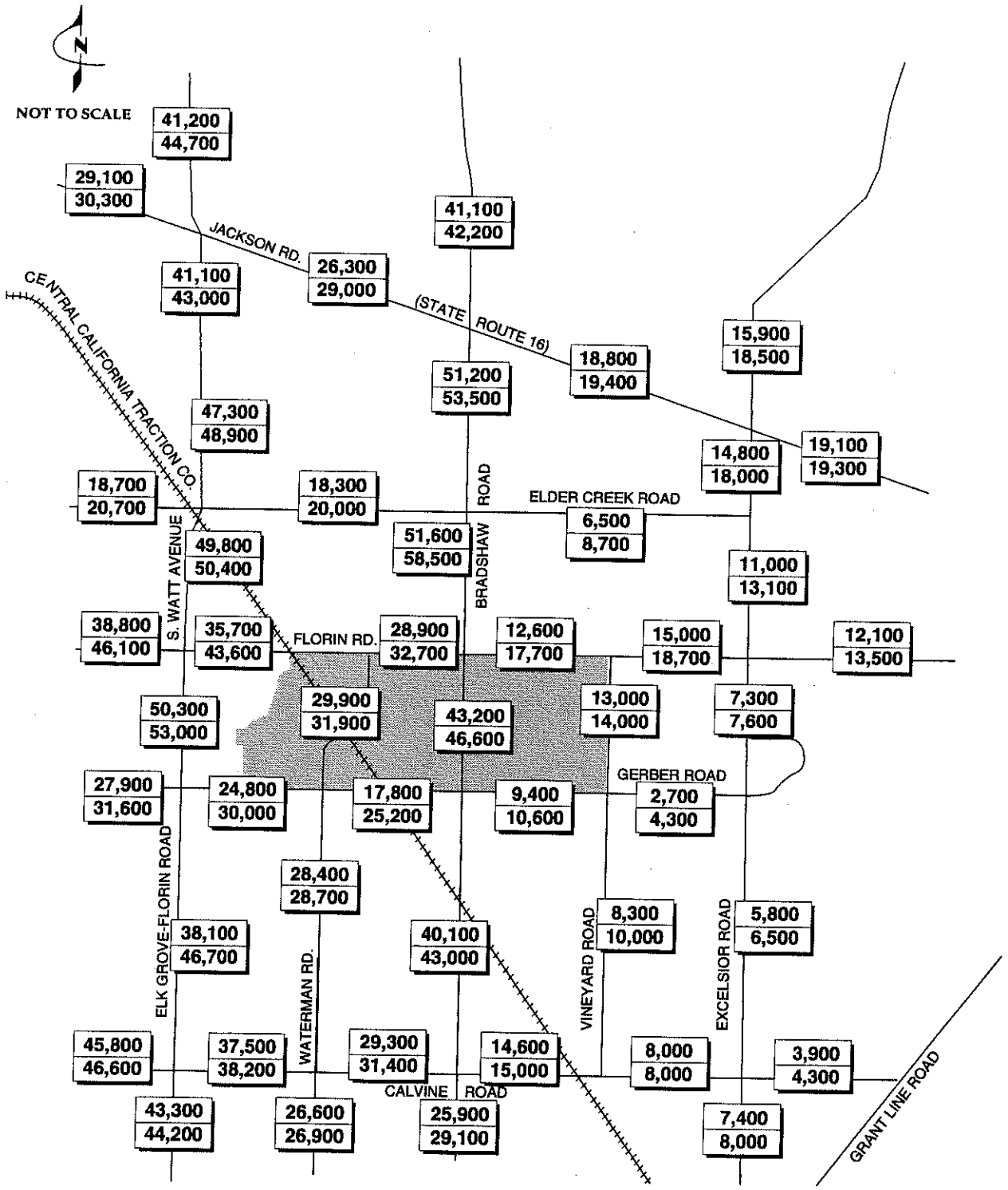
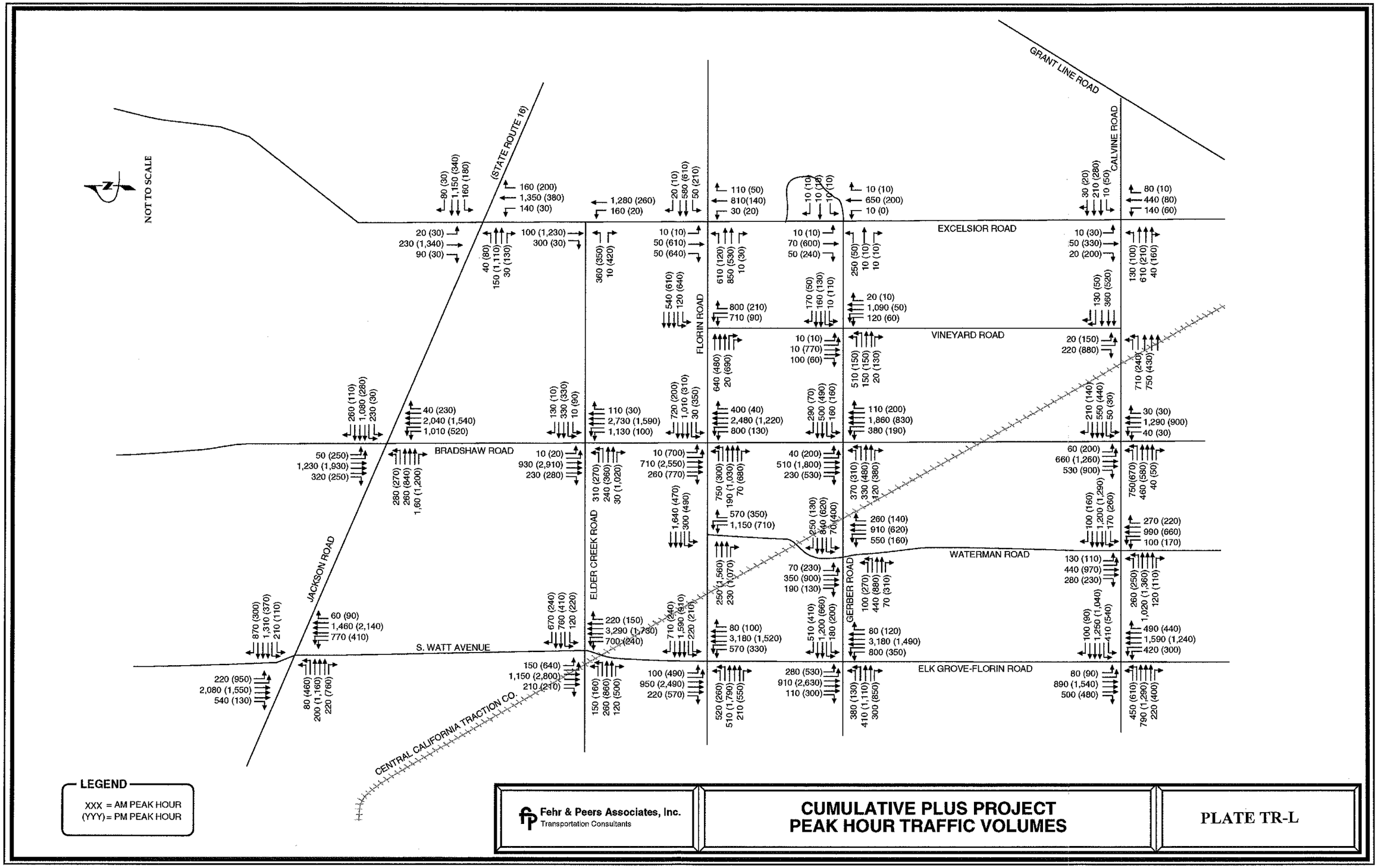


PLATE TR-K

CUMULATIVE PLUS PROJECT DAILY VOLUMES

Fehr & Peers Associates, Inc.
Transportation Consultants


NOT TO SCALE
(STATE ROUTE 16)
GRANT LINE ROAD
CALVINE ROAD
EXCELSIOR ROAD
VINEYARD ROAD
FLORIN ROAD
BRADSHAW ROAD
ELDER CREEK ROAD
WATERMAN ROAD
GERBER ROAD
ELK GROVE-FLORIN ROAD
S. WATT AVENUE
JACKSON ROAD
CENTRAL CALIFORNIA TRACTION CO.
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790 (1,290)
220 (400)
LEGEND
XXX = AM PEAK HOUR
(YYY) = PM PEAK HOUR
Fehr & Peers Associates, Inc.
Transportation Consultants
CUMULATIVE PLUS PROJECT
PEAK HOUR TRAFFIC VOLUMES
PLATE TR-L

to carry volumes beyond the theoretical urban roadway capacities of 18,000 VPD, 36,000 VPD, and 54,000 VPD for two-lane, four-lane, and six-lane facilities, respectively. The highest daily volume without the project is 51,600 VPD, which is projected for the segment of Bradshaw Road between Florin Road and Elder Creek Road. Assuming a maximum threshold of 54,000 VPD according to County guidelines, this section of roadway would operate under capacity.

Plate TR-K shows that the proposed project would increase traffic on most roadway segments in the study area. However, only the segment of Bradshaw Road between Florin Road and Elder Creek Road is projected to serve a volume in excess of its theoretical operating capacity under cumulative plus project conditions. This deficiency is described below.

Roadway Deficiencies Under Cumulative Plus Project Conditions:

CP-1: The project volume of 58,500 VPD on **Bradshaw Road between Florin Road and Elder Creek Road** exceeds the theoretical capacity of 54,000 VPD for a six-lane roadway.

Physical deficiencies are projected to occur on those segments that are planned to be two-lane facilities and will not be improved through 2010. These deficiencies are presented below. The addition of project generated traffic would exacerbate the existing physical deficiency caused by the substandard travel lane and shoulder widths in the following locations.

CP-2: Implementation of the project would add approximately 2,200 VPD to **Elder Creek Road between Bradshaw Road and Excelsior Road.**

CP-3: Implementation of the project would add approximately 300 to 3,200 VPD to **Excelsior Road between Jackson Road (SR 16) and Calvine Road.** Except in the vicinity of Birch Ranch Road, the addition of this traffic would exacerbate the existing physical deficiency.

CP-4: Implementation of the project would add approximately 1,600 VPD to **Gerber Road between Vineyard Road and Excelsior Road.**

Study Intersections

The peak hour volumes presented on Plates TR-J and TR-L were used to determine the level of service for cumulative no project and cumulative plus project conditions, respectively. The results of the a.m. and p.m. peak hour analysis are shown in Table TR-8.

TABLE TR-8

Cumulative Intersection Levels of Service

Intersection	Traffic Control	Cumulative No Project AM (PM)		Cumulative Plus Project AM (PM)	
		V/C Ratio[1]	LOS[2]	V/C Ratio	LOS
S. Watt Avenue/Jackson Road	Signal	1.26 (1.21)	F (F)	1.29 (1.33)	F (F)
Bradshaw Road/Jackson Road	Signal	1.01 (1.10)	F (F)	1.08 (1.30)	F (F)
Jackson Road/Excelsior Road	Signal	1.30 (1.24)	F (F)	1.44 (1.53)	F (F)
S. Watt Avenue/Elder Creek Road	Signal	1.17 (0.99)	F (E)	1.26 (1.18)	F (F)
Bradshaw Road/Elder Creek Road	Signal	0.85 (1.02)	D (F)	0.92 (1.30)	E (F)
Excelsior Road/Elder Creek Road	Signal	0.95 (0.78)	E (C)	1.15 (1.12)	F (F)
Elk Grove-Florin Road/Florin Road	Signal	1.28 (1.04)	F (F)	1.40 (1.25)	F (F)
Florin Road/Waterman Road	Signal	0.62 (0.89)	B (D)	0.67 (0.99)	B (E)
Bradshaw Road/Florin Road	Signal	1.17 (1.10)	F (F)	1.27 (1.16)	F (F)
Florin Road/Vineyard Road	Signal	0.59 (0.53)	A (A)	0.59 (0.69)	A (B)
Florin Road/Excelsior Road	Signal	0.97 (0.80)	E (C)	1.25 (0.80)	F (C)
Elk Grove-Florin Road/Gerber Road	Signal	1.31 (1.20)	F (F)	1.47 (1.29)	F (F)
Waterman Road/Gerber Road	Signal	0.87 (0.81)	D (D)	0.70 (0.87)	B (D)
Bradshaw Road/Gerber Road	Signal	0.84 (0.88)	D (D)	0.80 (0.82)	C (D)
Vineyard Road/Gerber Road	Signal	0.72 (0.32)	C (A)	0.69 (0.41)	B (A)
Excelsior Road/Gerber Road	Signal	0.65 (0.55)	B (A)	0.67 (0.48)	B (A)
Elk Grove-Florin Road/Calvine Road	Signal[3]	0.88 (0.99)	D (E)	0.91 (1.02)	E (F)
Calvine Road/Waterman Road	Signal	0.79 (0.79)	C (C)	0.81 (0.85)	D (D)
Calvine Road/Bradshaw Road	Signal	0.81 (0.77)	D (C)	0.77 (0.85)	C (D)
Calvine Road/Vineyard Road	Signal	0.61 (0.59)	B (A)	0.47 (0.65)	A (B)
Calvine Road/Excelsior Road	Signal	0.48 (0.49)	A (A)	0.49 (0.44)	A (A)

Notes: [1] V/C Ratio = Volume-to-Capacity Ratio.
[2] LOS = Level of Service.
[3] Although an urban interchange was identified at this location as part of the General Plan, intersection LOS was calculated assuming a standard arterial intersection configuration (two left turn lanes, three through lanes and a separate right turn lane on each approach).

Under cumulative conditions without the project, eight of the 21 study intersections are projected to operate at an unacceptable level (LOS F) during one or both peak hours. These locations and the affected peak hour(s) are listed below .

- South Watt Avenue at Jackson Road (a.m. and p.m. peak hour)
- Bradshaw Road/Jackson Road (a.m. and p.m. peak hour)
- Jackson Road/Excelsior Road (a.m. and p.m. peak hour)
- S. Watt Avenue/Elder Creek Road (a.m. peak hour)
- Bradshaw Road/Elder Creek Road (p.m. peak hour)
- Elk Grove-Florin Road/Florin Road (a.m. and p.m. peak hour)
- Bradshaw Road/Florin Road (a.m. and p.m. peak hour)
- Elk Grove-Florin Road/Gerber Road (a.m. and p.m. peak hour)

All other intersections operate at LOS E or better during both peak hours under cumulative conditions without the proposed project.

With the addition of project-generated traffic, three additional study intersections are projected to operate at LOS F during one or both peak hours. These locations include the following.

- Excelsior Road/Elder Creek road (a.m. and p.m. peak hour)
- Florin Road/Excelsior Road (a.m. peak hour)
- Elk Grove-Florin Road/Calvine Road (p.m. peak hour)

Intersection Deficiencies Under Cumulative Plus Project Conditions:

CP-5: Implementation of the project would result in LOS F operations in the a.m. peak hour at the **South Watt Avenue/Jackson Road** intersection; however it does not worsen conditioning compared to operations under cumulative no project conditions.

CP-6: Implementation of the project would exacerbate LOS F operations at the **Bradshaw Road/Jackson Road** intersection during the a.m. and p.m. peak hour.

CP-7: Implementation of the project would exacerbate LOS F operations at the **Jackson Road/Excelsior Road** intersection during the a.m. and p.m. peak hour.

CP-8: Implementation of the project would exacerbate LOS F operations at the **South Watt Avenue/Elder Creek Road** intersection during the a.m. peak hour, and would cause p.m. peak hour operations to deteriorate from LOS E to F.

CP-9: Implementation of the project would exacerbate LOS F operations at the **Bradshaw Road/Elder Creek Road** intersection during the p.m. peak hour.

CP-10: Implementation of the project would degrade operations at the **Excelsior Road/Elder Creek Road** intersection from LOS E to F during the a.m. peak hour and from LOS C to F in the p.m. peak hour.

CP-11: Implementation of the project would exacerbate LOS F operations at the **Elk Grove-Florin Road/Florin Road** intersection during the a.m. and p.m. peak hour.

CP-12: Implementation of the project would exacerbate LOS F operations at the **Bradshaw Road/Florin Road** intersection during the a.m. and p.m. peak hour.

CP-13: Implementation of the project would degrade operations at the **Florin Road/Excelsior Road** intersection from LOS E to F in the a.m. peak hour.

CP-14: Implementation of the project would exacerbate LOS F operations at the **Elk Grove-Florin Road/Gerber Road** intersection during the a.m. and p.m. peak hour.

CP-15: Implementation of the project would degrade operations at the **Elk Grove-Florin Road/Calvine Road** intersection from LOS E to F in the p.m. peak hour.

Proposed Improvements and Resulting Environmental Significance

The following improvements are proposed to enhance operating conditions or to eliminate projected deficiencies discussed above. Each improvement is listed according to its reference number and the resultant environmental significance (i.e. residual impact) is noted. As defined earlier, a project will result in a significant impact when the addition of project-generated traffic changes the LOS from E or better to LOS F even after implementation of all feasible mitigation measures. For facilities operating at LOS F without the project, an impact is considered significant if the addition of project traffic increases the V/C ratio by 0.05 or more.

Improvement CP-1: Access on **Bradshaw Road** should be strictly limited **between Florin Road and Elder Creek Road.** With the exception of signalized intersections, limited driveway access should be permitted along this roadway segment.

Reducing the number of conflicting turning movements helps to maximize the available capacity and improve traffic flow in the corridor. Although this improvement would help to reduce the projected deficiency, this segment of Bradshaw Road would continue to serve traffic volumes that exceed County guidelines for roadway capacity.

Environmental Significance: This impact is considered **significant and unavoidable** since the project volume of 58,500 VPD on Bradshaw Road between Florin Road and Elder Creek Road exceeds the theoretical capacity of 54,000 VPD for a six-lane roadway.

Improvement CP-2: Widen **Elder Creek Road between South Watt Avenue and Excelsior Road** to include 12-foot travel lanes and minimum 6-foot shoulders to meet Sacramento County design standards for rural arterials. This improvement will eliminate the physical deficiency under cumulative no project conditions and the deficiency with the project in place.

Environmental Significance: This impact is considered less than significant since the proposed improvement will eliminate the deficiency under with project conditions

Improvement CP-3: Widen **Excelsior Road between Jackson Road and Calvine Road** to include 12-foot travel lanes and minimum 6-foot shoulders to meet Sacramento County design standards for rural arterials. This improvement will eliminate the physical deficiency under cumulative no project conditions and the deficiency with the project in place.

Environmental Significance: This impact is considered less than significant since the proposed improvement will eliminate the deficiency under with project conditions.

Improvement CP-4: Widen **Gerber Road between Vineyard Road and Excelsior Road** to include 12-foot travel lanes and minimum 6-foot shoulders to meet Sacramento County design standards for rural arterials. This improvement will eliminate the physical deficiency under cumulative no project conditions and the deficiency with the project in place.

Environmental Significance: This impact is considered less than significant since the proposed improvement will eliminate the deficiency under with project conditions.

Improvement CP-5: None of the left or right turn volumes at the **South Watt Avenue/Jackson Road** intersection warrant non-standard traffic controls (e.g., triple left turn lanes, dual right turn lanes, "free" right turn lanes). Construction of a fourth through lane on the northbound and southbound approaches would improve the LOS to E or better; however, Sacramento County does not typically construct eight-lane roadway segments except under special circumstances (e.g., adjacent to a freeway interchange). Thus, the proposed widening of South Watt Avenue is not considered feasible.

Environmental Significance: This intersection is expected to operate at LOS F even with improvements in place. This impact is not considered significant since the project does not worsen V/C ratios over that expected under the cumulative no project conditions.

Improvement CP-6: Construct dual right turn lanes on the eastbound approach and triple left turn lanes on the northbound approach of the **Bradshaw Road/Jackson Road** intersection. Construction of these improvements would result in LOS E operations during both peak hours. Installation of these improvements should occur when the V/C ratio exceeds 1.00 or the peak hour volume for either movement exceeds roughly 950 vehicles.

Environmental Significance: This impact is considered less than significant since the proposed improvement will eliminate the deficiency under with project conditions.

Improvement CP-7: Modify the northbound and southbound approaches to the **Jackson Road/Excelsior Road** intersection to include a second through lane. Since the northbound departure leg of this intersection is planned to accommodate two lanes, this improvement would only require modifications to Excelsior Road south of Jackson Road. The southbound departure leg would have to be widened to accommodate two lanes before merging into a single southbound lane. The length and merging distance for the second southbound lane will be approved by Sacramento County Transportation Division staff.

This intersection modification would improve the cumulative plus project LOS from F to E during the a.m. peak hour. The p.m. peak hour LOS with this improvement would still be F; however, the V/C

ratio would improve. These intersection improvements should be implemented when intersection operation exceeds LOS E.

Environmental Significance: This impact is considered less than significant since the intersection V/C ratio would be less with the project when compared to the no project condition.

Improvement CP-8: None of the left or right turn volumes at the **South Watt Avenue/Elder Creek Road** intersection warrant non-standard traffic controls (e.g., triple left turn lanes, "free" right turn lanes). Construction of a fourth through lane on the northbound and southbound approaches would improve the LOS to E or better; however, Sacramento County does not typically construct eight-lane roadway segments except under special circumstances (e.g., adjacent to a freeway interchange). Thus, the proposed widening of South Watt Avenue is not considered feasible and no improvements are recommended.

Environmental Significance: This impact is considered **significant and unavoidable** since the V/C ratio with the project in place would increase more than 0.05 compared to the no project condition.

Improvement CP-9: Construct dual right turn lanes on the eastbound approach of the **Bradshaw Road/Elder Creek Road** intersection. Construction of this improvement would result in LOS E operations during the a.m. and LOS F during the p.m. peak hour. Installation of these improvements should occur when the intersection V/C ratio exceeds 1.00 or the peak hour volume for either movement exceeds approximately 900 vehicles. The PM peak hour service level would remain F.

Environmental Significance: This impact is considered **significant and unavoidable** since the V/C ratio would increase 0.05 or more with the project in place compared to the no project condition.

Improvement CP-10: Modify the northbound and southbound approaches to the **Elder Creek Road/Excelsior Road** intersection to include a second through lane. Since the projected daily volume is at the capacity of a typical two-lane roadway and the peak hour demand is over capacity, Excelsior Road should be widened to four lanes between Elder Creek Road and Jackson Road.

The southbound departure leg of the Elder Creek Road/Excelsior Road intersection would have to be widened to accommodate two lanes to the Florin Road intersection (see Improvement CP-13).

This intersection modification would improve the cumulative plus project LOS from F to C in the a.m. peak hour and to B in the p.m. peak hour. These improvements should be implemented when intersection operation exceeds LOS E.

Environmental Significance: This impact is considered less than significant since the proposed improvement will improve the service levels to within County standards.

Improvement CP-11: None of the left or right turn volumes at the **Elk Grove-Florin Road/Florin Road** intersection warrant non-standard traffic controls (e.g., triple left turn lanes, dual right turn lanes, "free" right turn lanes). Construction of a fourth through lane on the northbound and southbound approaches would improve the LOS to E or better; however, Sacramento County does not typically construct eight-lane roadway segments except under special circumstances (e.g., adjacent to a freeway interchange). Thus, the proposed widening of Elk Grove-Florin Road is not considered feasible and no improvements are recommended.

Environmental Significance: This impact is considered **significant and unavoidable** since the V/C ratio with the project in place is more than 0.05 higher than the V/C ratio under the no project condition.

Improvement CP-12: Construct dual right turn lanes on the eastbound approach of the **Bradshaw Road/Florin Road** intersection. Although this improvement does not improve the LOS to an acceptable level, the a.m. peak hour V/C ratio (1.15) would be less than the cumulative no project ratio (1.17). This improvement would not change the p.m. peak hour V/C ratio.

Construction of a fourth through lane on the northbound and southbound approaches would improve the LOS to E or better; however, Sacramento County does not typically construct eight-lane roadway segments except under special circumstances (e.g., adjacent to a freeway interchange). Thus, the proposed widening of Elk

Grove-Florin Road is not considered feasible.

Environmental Significance: This impact is considered **significant and unavoidable** since the V/C ratio with the project in place is more than 0.05 higher than the V/C ratio under the no project condition.

Improvement CP-13: Modify the eastbound approach to include dual left turn lanes and add a second northbound through lane at the Florin Road/Excelsior Road intersection. These improvements would require widening of Excelsior Road between Florin Road and Elder Creek Road to accommodate two departure lanes. Although the daily volume on the Excelsior Road north of Florin Road does not warrant two-northbound through lanes, these improvements are necessary to provide acceptable traffic operations based on peak hour forecasts. Similarly, two southbound lanes on Excelsior Road should be constructed between Elder Creek and Florin Road (see Improvement CP-10).

This intersection modification would improve the cumulative plus project LOS from F to C in the a.m. and p.m. peak hour. These improvements should be implemented when intersection operation exceeds LOS E.

Environmental Significance: This impact is considered less than significant since the proposed improvement will result in service levels within County standards.

Improvement CP-14: None of the left or right turn volumes at the **Elk Grove-Florin Road/Gerber Road** intersection warrant non-standard traffic controls (e.g., triple left turn lanes, dual right turn lanes, "free" right turn lanes). Construction of a fourth through lane on the northbound and southbound approaches would improve the LOS to E or better; however, Sacramento County does not typically construct eight-lane roadway segments except under special circumstances (e.g., adjacent to a freeway interchange). Thus, the proposed widening of Elk Grove-Florin Road is not considered feasible and no improvements are recommended.

Environmental Significance: This impact is considered **significant and unavoidable** since the V/C ratio with the project in place is more than 0.05 higher than the V/C ratio

under the no project condition.

Improvement CP-15: None of the left or right turn volumes at the **Elk Grove-Florin Road/Calvine Road** intersection warrant non-standard traffic controls (e.g., triple left turn lanes, "free" right turn lanes). Construction of a fourth through lane on either the northbound and southbound approaches or the eastbound and westbound approaches would improve the LOS to E or better; however, Sacramento County does not typically construct eight-lane roadway segments except under special circumstances (e.g., adjacent to a freeway interchange). Thus, the proposed widening of Elk Grove-Florin Road is not considered feasible and no improvements are recommended.

Environmental Significance: This impact is not considered significant since the V/C ratio with the project in place is less than 0.05 higher than the V/C ratio under the no project condition.

Summary of Cumulative Traffic Impacts

Following implementation of the proposed improvements, three of the twelve transportation deficiencies identified would be eliminated. However, deficiencies would remain under cumulative plus project conditions at the following locations:

CP-1: Bradshaw Road between Florin Road & Elder Creek Road
CP-5: South Watt Avenue/Jackson Road intersection
CP-7: Jackson road/Excelsior Road intersection
CP-8: South Watt Avenue/Elder Creek Road intersection
CP-9: Bradshaw Road/Elder Creek Road intersection
CP-11: Elk Grove-Florin Road/Florin Road intersection
CP-12: Bradshaw Road/Florin Road intersection
CP-14: Elk Grove-Florin Road/Gerber Road intersection
CP-15: Elk Grove-Florin Road/Calvine Road intersection

Impacts due to the proposed project are considered significant and unavoidable at the following locations:

CP-1: Bradshaw Road between Florin Road & Elder Creek Road
CP-8: South Watt Avenue/Elder Creek Road intersection
CP-9: Bradshaw Road/Elder Creek Road intersection
CP-14: Elk Grove-Florin Road/Gerber Road intersection

TABLE TR-9

Cumulative Plus Project Intersection Levels of Service with Improvements

Intersection	Traffic Control	AM Peak Hour		PM Peak Hour	
		V/C Ratio[1]	LOS[2]	V/C Ratio	LOS
S. Watt Avenue/Jackson Road	Signal	1.10	F	1.13	F
Bradshaw Road/Jackson Road	Signal	0.95	E	0.92	E
Jackson Road/Excelsior Road	Signal	0.95	E	1.04	F
S. Watt Avenue/Elder Creek Road	Signal	1.26	F	1.18	F
Bradshaw Road/Elder Creek Road	Signal	0.92	E	1.04	F
Excelsior Road/Elder Creek Road	Signal	0.72	C	0.69	B
Elk Grove-Florin Road/Florin Road	Signal	1.40	F	1.25	F
Florin Road/Waterman Road	Signal	0.67	B	0.99	E
Bradshaw Road/Florin Road	Signal	1.15	F	1.16	F
Florin Road/Vineyard Road	Signal	0.59	A	0.69	B
Florin Road/Excelsior Road	Signal	0.76	C	0.80	C
Elk Grove-Florin Road/Gerber Road	Signal	1.47	F	1.29	F
Waterman Road/Gerber Road	Signal	0.70	B	0.87	D
Bradshaw Road/Gerber Road	Signal	0.80	C	0.82	D
Vineyard Road/Gerber Road	Signal	0.69	B	0.41	A
Excelsior Road/Gerber Road	Signal	0.67	B	0.48	A
Elk Grove-Florin Road/Calvine Road	Signal	0.91	E	1.02	F
Calvine Road/Waterman Road	Signal	0.81	D	0.85	D
Calvine Road/Bradshaw Road	Signal	0.77	C	0.85	D
Calvine Road/Vineyard Road	Signal	0.58	A	0.65	B
Calvine Road/Excelsior Road	Signal	0.48	A	0.44	A

[1] V/C Ratio = Volume-to-Capacity Ratio.
[2] LOS = Level of Service. Shaded areas represent LOS F conditions.

Table 9 shows the LOS at the study intersections after implementation of the proposed improvements.

As shown in Table TR-9, the proposed improvements result in acceptable operating conditions (LOS E or better) at thirteen of the study intersections. Eight intersections are projected to operate at LOS F with the project in place under cumulative conditions.

RELATED TRANSPORTATION ISSUES

As part of the North Vineyard Station Specific Plan transportation analysis, several related issues were evaluated. These issues included the following:

- Potential effect of the project on the Congestion Management Plan roadway network;
- Circulation within the North Vineyard Station Specific Plan area;
- Trip reduction measures to meet regional air quality goals and to reduce congestion; and
- Transportation impacts of alternatives to the proposed project.

These issues are discussed below.

Congestion Management Program (CMP) Conformity

The traffic study contains a lengthy discussion on the CMP. In 1996, the Governor approved AB 2429 (Bowler which removes the CMP mandate from state law. It permits a county to opt out of the CMP program is a majority of local governments each adopt resolutions electing to be exempt. Thus, the CMP effectively became an optional program. In November, 1996, the CMP was rescinded by the Sacramento County Board of Supervisors.

Internal Circulation System

The proposed circulation system includes a variety of transportation facilities designed for

a variety of travel modes including automobile, bicycle, pedestrian, and transit trips. The layout of these facilities is intended to evenly distribute trips to the arterials along the boundaries of the plan area and to limit the need for major roadways within the project.

Plate TR-M shows the projected daily traffic volumes on the internal roadway network under cumulative conditions. Based on these volumes and Sacramento County guidelines, the only four-lane facility within the plan area will be the section of Waterman Road between Florin Road and Gerber Road, which is expected to serve 31,900 vehicles per day (VPD). All other roadways within the site (except for Bradshaw Road) are projected to serve fewer than 5,500 VPD, which can be accommodated on a two-lane roadway. For those streets serving residential areas with projected volumes between 4,500 and 5,500 VPD, special landscape and access treatments may be required. Vineyard Road, which forms the eastern boundary of the site, is planned to be a four-lane facility and would accommodate a projected daily volume of 14,000 VPD. Bradshaw Road is planned to be a six-lane facility and is projected to serve 46,600 VPD.

Plate TR-M also shows the location of signalized intersections that are projected to meet signal warrants under cumulative conditions. Signalized intersections will typically be spaced at 1,200-foot minimum intervals and traffic signals should not be implemented until warranted by standard volume warrants. Except for five locations, all of the collector streets are projected to be signalized. When tentative maps are available, traffic signal placement may vary slightly.

With the exception of intersections on Waterman Road and Bradshaw Road, intersection traffic control on internal project streets is expected to be maintained through the use of stop signs. At some locations, especially close to schools and parks, signals may be installed to serve high pedestrian and bicycle traffic volumes and to enhance safety.

The proposed Waterman Road crossing of the Central California Traction Railroad will likely include crossing gates, signals, and striping to stop traffic as trains proceed through the plan area. Under existing conditions, an average of two trains travel along this railway segment each day, and train lengths vary between two and 50 cars.

With the addition of project and background traffic at the proposed crossing, vehicles may be delayed and queues may form on the northbound and southbound approach. The circulation plan shows that the nearest collector street intersections on Waterman Road are located approximately 800 feet north and south of the proposed crossing. Once more detailed tentative maps are available, traffic circulation in the immediate vicinity of the crossing should be reviewed to ensure that temporary queues on Waterman Road will not result in adverse impacts to driveways or minor streets.

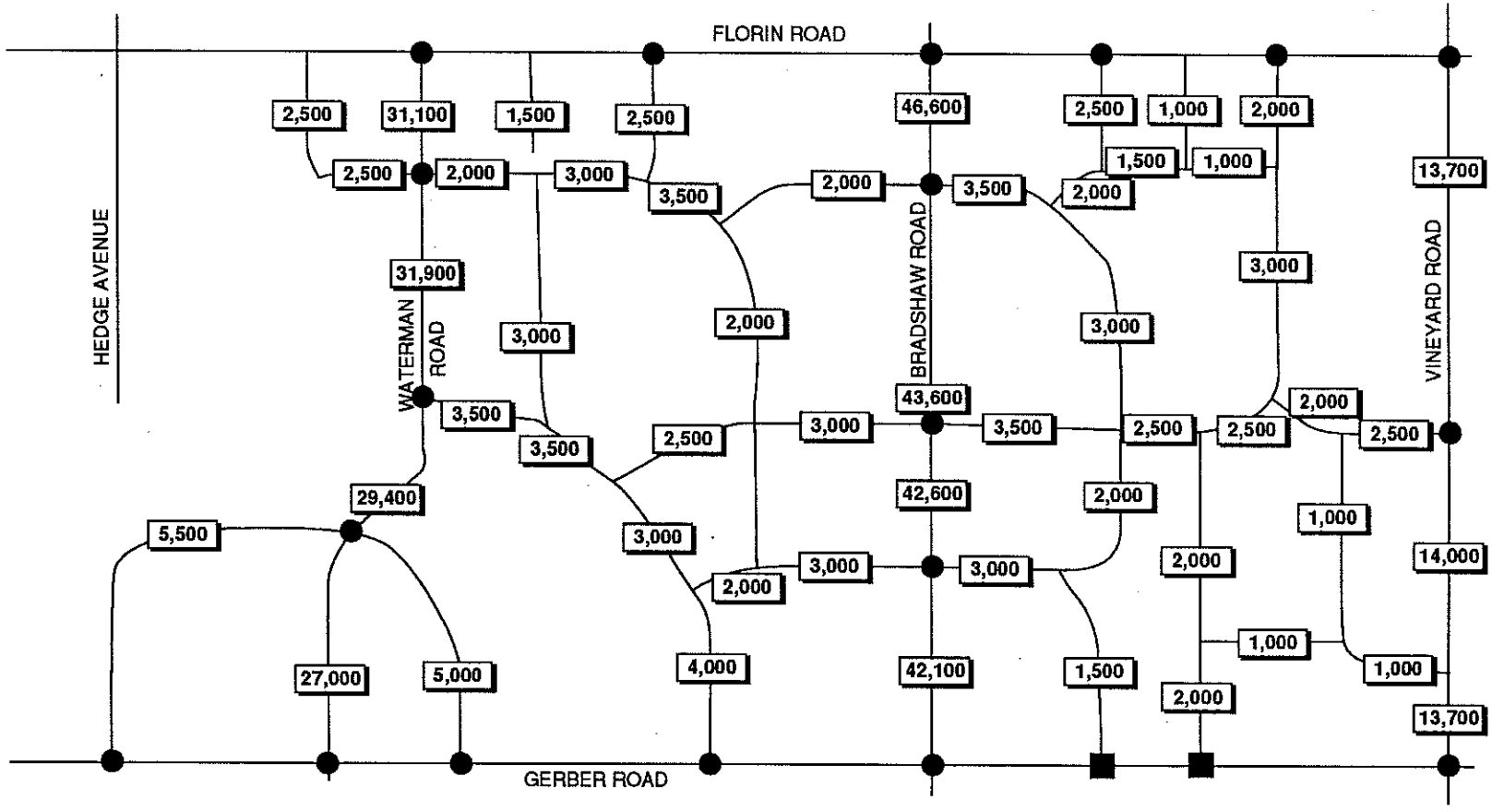


PLATE TR-M

CUMULATIVE DAILY TRAFFIC VOLUMES ON INTERNAL ROADWAYS

Fehr & Peers Associates, Inc.
Transportation Consultants

The proposed network of on-street bicycle lanes and off-street bicycle/pedestrian paths is designed to interconnect residential neighborhoods, parks, schools, and commercial areas. This system will also provide connections to planned on-street bicycle lanes on all five major roadways serving the site and will be constructed to applicable County and state standards.

The NVSSP area will be designed to accommodate transit facilities and services planned by Sacramento Regional Transit (RT). Primary transit corridors within the plan area include Bradshaw Road and Florin Road according to RT's 20-year master plan. It is anticipated that bus stops will be designated at one-quarter mile intervals along these roadways. Additional transit routes and stops will be identified by RT on other major arterial and collector streets as the area develops and service is extended to the North Vineyard Station, Florin Station Comprehensive, and Vineyard Springs Comprehensive Planning Areas.

Vehicle Trip and Emission Reduction Measures

The Sacramento County General Plan contains policies that are designed to improve air quality through a variety of measures that eliminate or reduce vehicle trips, reduce trip length, or change the time of day when trips are completed. Policy AQ-15 is presented below:

All new major indirect sources of emissions shall be reviewed and modified or conditions to achieve a reduction in emissions. This indirect source review program will be developed in coordination with SACOG and Sacramento Metropolitan Air Quality Management District (SMAQMD), and include the following features:

(a) A 15% reduction in emissions from the level that would be produced by a base-case project assuming full trip generation per the current Institute of Transportation Engineers (ITE) *Trip Generation* Manual.

(b) A focus on cost-effectiveness measured in terms of cost per ton of pollutant avoided.

(c) A list of cost-effective measures to be developed, maintained, and annually reviewed by SMAQMD.

(d) A maximum expenditure cap which will be computed for each indirect source on the basis of factors

including, but not limited to, total emissions and project value.

(e) A process for obtaining a waiver from the 15 percent requirements if it is found that a lower level of reduction is all that can be achieved with cost-effective measures and offsets, or that achieving the full 15 percent reduction would cost more than the expenditure cap.

(f) An exception for projects which have already undergone indirect source review at some point in the development approval process.

(g) A procedure to give full credit for other measures required in a project that may also achieve a reduction in emissions.

Sacramento County has developed a preliminary list of measures and corresponding credits that can be applied to the required 15% reduction in emissions. This list is based on data originally prepared by the SMAQMD in a February 1995 report entitled *Indirect Source Review Program: Implementation Guidelines*. Sacramento County is currently developing specific requirements that will be incorporated into the Zoning Code. The following measures, which are incorporated into the NVSSP, are all contained in the preliminary list of acceptable measures:

1. The plan contains a mixture of complementary land uses (residential, commercial, parks, schools) located within the project or within one-half mile of the project boundaries. Approximately half of the plan meets the County's criteria, which allows for up to a 6% credit. NVSSP CREDIT=3%.

2. All parking areas (residential and non-residential) will include electric vehicle charging facilities. Single-family homes will include an outlet for vehicle charging in the garage, multi-family units will include charging facilities in a common area, and non-residential development will provide one electric charging facility for every 50 regular parking spaces. NVSSP CREDIT = 1%

3. The plan is designed to provide a transit stop within a reasonable distance of all land uses. Although specific locations for stops have not been

identified at RT staff's recommendation, the proposed roadway network of major collectors would accommodate bus stops within one-quarter mile of all land uses. NVSSP CREDIT=2%.

4. The plan will include easements to accommodate bus stop improvements (route signs, benches, shelters and lighting) at all major transit stops. Current RT policy only requires easements for stops since a private firm provides the shelter and related improvements in exchange for advertising space. NVSSP CREDIT = 2%.

5. The plan is designed to accommodate and provide access to the planned on-street (Class II) bicycle facilities as identified in the 2010 Sacramento City/County Bikeway Master Plan (BMP). On-street facilities within one-half mile of the project site are planned on Florin, Bradshaw, and Gerber Roads and the entire plan area meets the criteria. NVSSP CREDIT = 2.0%

6. In addition to the bikeways included in the BMP, both on-street and off-street facilities are included throughout the plan area and will be located within one-half mile of all major land uses. NVSSP CREDIT = 1.5%

7. The proposed circulation system provides for direct (i.e., - minimum distance) pedestrian connections between adjacent and complementary land uses . All parks, schools, and commercial areas are connected to residential areas by interconnected roads and pathways. NVSSP CREDIT = 2%

8. The circulation system in the plan provides direct automobile access between complementary land uses to minimize the distance traveled, within the limits of physical constraints (i.e., drainage parkways). NVSSP CREDIT = 1%

9. The plan area will operate or participate in a Transportation Management Association to create, administer, and finance on-going programs to reduce vehicle trips. The Financing Plan for the project will include means to fund the TMA. NVSSP = 3%

According to the County's preliminary guidelines, the above measures result in a 16.5 percent reduction in emissions and meet the requirements of General Plan Policy AQ-15. In addition to the above measures, the Specific Plan includes policies that encourage the use of low-emission heating/cooling measures and equipment, and the provision of child care services within the plan area.

Transit System Operations

Facilities and services are anticipated on Florin, Bradshaw, Gerber, Waterman, and Vineyard Roads, as well as on major collectors within the plan area. The proposed circulation plan will be reviewed by RT to identify potential route corridors within the plan area, as well locations for turnouts and major transit centers.

The NVSSP describes a 10-acre Transit Center has been designed in the Plan to ultimately provide parking for carpools and buses and to facilitate the possible future extension of light rail transit into the Plan area. Included are a 1.1 acre transit station site and nine acres for park and ride lots. The Transit Center adjoins the Plaza Park, a specialized park intended to compliment the transit facilities and attract transit users. The Transit Center has been designed in accordance with RT design standards for suburban light rail stations.

Implementation of the proposed project will not disrupt or interfere with expected transit operations in the area and no cumulative deficiencies were identified.

Bikeway and Pedestrian System Operations

The Plan includes an extensive pedestrian and bicycle circulation system within the public road rights-of-ways and in open space areas, in accordance with the following General Plan policies:

> *Policy LU-13. Community Plans, Specific Plans, and development projects shall be designed to promote pedestrian movement through direct, safe, and pleasant routes that connect destinations inside and outside the plan or project area.*
>
> *Policy AQ-25. Require that new development be designed to promote pedestrian and bicycle access and circulation.*

Six-foot wide pedestrian pathways are proposed along arterials and thoroughfare streets, and four-foot wide sidewalks are proposed on residential street.

The circulation plan shows a combination of pathways within the street rights-of-way and in off-street, open space locations that will enable non-vehicular travel throughout the Plan area. When the system is fully developed, linkages with plan area off-road bike paths will allow pedestrian and bicycle travel well beyond the Plan area.

Landscape corridors are included adjacent to the right-of-way on both sides of all thoroughfare and arterial streets and on one or both sides of some collector and residential

streets.

No adverse cumulative impacts bikeway and pedestrian systems were identified.

TRANSPORTATION IMPACTS OF PROJECT ALTERNATIVES

Two alternatives to the preferred land use plan were evaluated as part of the transportation analysis. These alternatives include:

- 10 Percent Low Density Alternative - This alternative includes approximately 10 percent fewer dwelling units than the preferred plan. Under this alternative, medium-density housing (7 to 14 units per acre) is not proposed and low density residential uses are expanded. The net result is 5,759 dwelling units with minor changes to the total acreage for parks. All other uses (i.e., parks, schools, commercial areas, open space, etc.) are unchanged.

- 15 Percent Low Density Alternative - This alternative includes approximately 15 percent fewer dwelling units than the preferred plan. Similar to the previous alternative, medium-density housing is not included and low density residential uses are expanded. The net result is 5,384 dwelling units with minor changes to total acreage for parks. All other uses are unchanged.

Tables TR-10 and TR-11 summarize the estimated daily trip generation for the 10 Percent and-15 Percent Low Density Alternatives, respectively.

These tables show that the 10 Percent Alternative would result in a total of 78,552 total daily vehicle trips or approximately seven percent fewer trips than estimated for the Preferred Plan. The number of net external daily vehicle trips under this alternative is 58,271, or seven percent fewer trips than the Preferred Plan.

Similarly, the 15 Percent Alternative would result in 74,971 total daily vehicle trips and 55,192 net external vehicle trips. These trip generation estimates are approximately 11 percent and 12 percent fewer than the total daily and net external trip estimates for the Preferred Plan, respectively.

Based on lower trip generation, impacts to the transportation system are expected to be less than those caused by the Preferred Plan; however, the alternative land use plans would still result in operational deficiencies at the critical study locations as identified in this study.

TABLE TR-10

NORTH VINEYARD SPECIFIC PLAN DAILY TRIP GENERATION FOR 10 PERCENT LOW DENSITY ALTERNATIVE

Land Use	Quantity	Units	Daily Trip Rate	Daily Vehicle Trips	Inter-nalization	Internal Trips	External Trips	Pass-By Factor	Net External Trips	External Person Trips	Transit Trips
Low Density Residential	5,122	D.U.	9.55	48,915	14%	6,848	42,067	0%	42,067	48,377	2,419
Medium Density Residential	0	D.U.	9.45	0	14%	0	0	0%	0	0	0
High Density Residential	637	D.U.	6.47	4,121	14%	577	3,544	0%	3,544	4,076	204
Neighborhood Commercial	49	ksf GLA	varies	6,555	40%	2,622	3,933	20%	3,146	3,618	181
Community Commercial	262	ksf GLA	varies	16,603	30%	4,981	11,622	30%	8,135	9,356	468
Professional/ Offices	103	ksf GFA	14.37	1,480	15%	222	1,258	0%	1,258	1,447	72
Elementary School	600	Students	1.09	654	90%	589	65	0%	65	75	4
Neighborhood Park	64	Acres	2.23	143	90%	128	14	0%	14	16	1
Community Park	27	Acres	2.99	81	50%	40	40	0%	40	46	2
			Totals:	78,552	20%	16,007	62,545	N/A	58,271	67,012	3,351

TABLE TR-11

NORTH VINEYARD SPECIFIC PLAN DAILY TRIP GENERATION FOR 15 PERCENT LOW DENSITY ALTERNATIVE

Land Use	Quantity	Units	Daily Trip Rate	Daily Vehicle Trips	Inter-nalization	Internal Trips	External Trips	Pass-By Factor	Net External Trips	External Person Trips	Transit Trips
Low Density Residential	4,747	D.U.	9.55	45,334	14%	6,347	38,987	0%	38,987	44,835	2,242
Medium Density Residential	0	D.U.	9.45	0	14%	0	0	0%	0	0	0
High Density Residential	637	D.U.	6.47	4,121	14%	577	3,544	0%	3,544	4,076	204
Neighborhood Commercial	49	ksf GLA	varies	6,555	40%	2,622	3,933	20%	3,146	3,618	181
Community Commercial	262	ksf GLA	varies	16,603	30%	4,981	11,622	30%	8,135	9,356	468
Professional/ Offices	103	ksf GFA	14.37	1,480	15%	222	1,258	0%	1,258	1,447	72
Elementary School	600	Students	1.09	654	90%	589	65	0%	65	75	4
Neighborhood Park	64	Acres	2.23	143	90%	128	14	0%	14	16	1
Community Park	27	Acres	2.99	81	50%	40	40	0%	40	46	2
			Totals:	74,971	21%	15,506	59,465	N/A	55,192	63,470	3,174

CONCLUSIONS OF TRANSPORTATION STUDY

The transportation study analyzes the impacts of the proposed project on the existing and planned roadway, transit, bicycle, and pedestrian circulation systems. The key findings of the study are summarized below.

- Under **Existing** conditions,, the following intersections operate at unacceptable levels (LOS F) during the a.m. and/or p.m. peak hour.

    - South Watt Avenue at Jackson Road;
    - Bradshaw Road at Jackson Road;
    - Elk Grove-Florin Road at Florin Road; and
    - Elk Grove-Florin Road at Gerber Road.

- Five roadway segments currently experience physical deficiencies based on substandard travel lane and shoulder widths. Existing deficiencies resulting from substandard roadway cross-sections are exacerbated with the addition of project traffic.

- The proposed Preferred Plan will generate 84,037 daily trips, 5,460 a.m. peak hour trips, and 8,663 p.m. peak hour trips. Approximately 20 percent of these trips are expected to remain within the project boundaries.

- The project alternatives (10 percent and-15 percent Low Density Alternatives) would not reduce project impacts to less than significant.

- Without roadway improvements, the addition of project traffic would result in operational deficiencies on five roadway segments and at eight study intersections. Improvements under **Existing Plus Project** conditions include widening the following roadway segments from two to four lanes:

    - Elk Grove-Florin Road from Jackson Road (SR 16) to Gerber Road
    - Bradshaw Road from Jackson Road (SR 16) to Gerber Road
    - Florin Road from Elk Grove-Florin Road to Waterman Road
    - Gerber Road from Elk Grove-Florin Road to Bradshaw Road
    - Jackson Road (SR 16) from South Watt Avenue to Bradshaw Road

- Intersection modifications (e.g., lane additions, traffic signal installations) would be required under **Existing Plus Project** conditions at the following locations:

    - South Watt Avenue at Jackson Road (SR 16);

- Bradshaw Road at Jackson Road (SR 16);
- Bradshaw Road at Elder Creek Road;
- Bradshaw Road at Florin Road;
- Elk Grove-Florin Road at Gerber Road;
- Bradshaw Road at Gerber Road;
- South Watt Avenue at Elder Creek Road; and
- Elk Grove-Florin Road at Florin Road.

- Under **Cumulative No Project** conditions, eight of the study intersections are projected to operate at LOS F during the a.m. peak hour and/or p.m. peak hour. Segments of Excelsior, Elder Creek, and Gerber Roads will experience physical deficiencies based on substandard travel lane and shoulder widths.

  The intersection modifications listed below are required to provide acceptable peak hour operations under **Cumulative Plus Project** conditions.

  1. Construct dual right turn lanes on the eastbound approach and triple left turn lanes on the northbound approach to the Bradshaw Road/Jackson Road intersection. Implementation of this improvement would result in LOS E operation at this location during the a.m. and p.m. peak hour.

  2. Construct Excelsior Road as a four-lane facility between Jackson Road and Florin Road. At the Jackson Road/Excelsior Road intersection, this modification would improve the cumulative plus project LOS from F to E during the a.m. peak hour. The p.m. peak hour LOS with this improvement would still be F; however, the V/C ratio with the project would be 1.04 or 19 percent less than the ratio of 1.24 under no project conditions. The Elder Creek Road widening should include two northbound and southbound through lanes at the Elder Creek Road/Excelsior Road intersection. Implementation of this improvement would result in LOS C or better operations during the a.m. and p.m. peak hours.

  3. Construct dual left turn lanes on the eastbound approach and two through lanes on the northbound approach at the Florin Road/Excelsior Road intersection. This modification, which would require widening of the northbound departure leg to accommodate two lanes, would result in LOS C operation during the a.m. and p.m. peak hour.

  4. Construct dual right turn lanes on the westbound approach to the Bradshaw Road/Elder Creek Road intersection. Although this modification does not provide acceptable operations during the p.m. peak hour, it does improve

intersection operations with the project by 25 percent.

5. Construct dual right turn lanes on the westbound approach to the Bradshaw Road/Florin Road intersection. Although this modification does not provide acceptable operations during either peak hour with the project, it does result in a.m. peak hour operations that are better than conditions without the project.

Significant & Unavoidable Traffic Impacts:

Even after implementation of the proposed improvements listed above, the following impacts were found to be significant and unavoidable:

1. The proposed project would result in significant and unavoidable impacts on Bradshaw Road between Florin Road and Elder Creek Road since the project volume of 58,500 VPD would exceed the capacity of 54,000 VPD for a six-lane roadway:

2. Implementation of the project under cumulative conditions will result in significant and unavoidable impacts at the following intersections:

   - South Watt Avenue/Elder Creek Road
   - Bradshaw Road/Elder Creek Road
   - Elk Grove-Florin/Florin Road
   - Bradshaw Road/Florin Road
   - Elk Grove-Florin Road/Gerber Road

Transit System Impacts:

Implementation of the proposed project will not disrupt or interfere with expected transit operations in the area and no cumulative impacts were identified. The plan provides for the implementation of future facilities by RT, such as bus operations, light rail, bus turnouts, and transit centers. Impacts due to the proposed project are considered less than significant.

Bikeway and Pedestrian System Impacts:

Both on-street and off-street bikeway and pedestrian facilities are planned throughout the study area consistent with existing plans (General Plan policies and the 2010 Sacramento City/County Master Bikeway Plan). Impacts due to the proposed project are considered

less than significant.

Consistency With General Plan and North Vineyard Station Specific Plan Policies:

The proposed transportation plan is consistent with both the General Plan Circulation Element policies and the policies and standards identified in the North Vineyard Station Specific Plan.

Mitigation Measures:

The following improvements are required to enhance operating conditions or to eliminate the projected deficiencies under **Existing with Project** condition:

TR-1 Widen the section of Elk Grove-Florin/South Watt Avenue from Gerber Road to SR 16 from two to four lanes.

TR-2 Widen the section of Bradshaw Road from Gerber Road to SR 16 from two to four lanes.

TR-3 Widen the section of Florin Road from south Watt Avenue to Bradshaw Road from two to four lanes.

TR-4 Widen the section of Gerber Road from Elk Grove-Florin Road to Bradshaw Road from two to four lanes.

TR-5 Widen the section of SR 16 from South Watt Avenue to Bradshaw Road from two to four lanes. This improvement should be constructed when the daily volume on this segment reaches 16,200 VPD or 90 percent of urban arterial capacity.

TR-6 Widen Elder Creek Road between South Watt Avenue and Excelsior Road to include 12-foot travel lanes and minimum 6-foot shoulders to meet Sacramento County design standards for rural arterials.

TR-7 Widen Excelsior Road between Jackson Road and Calvine Road to include 12-foot travel lanes and minimum 6-foot shoulders to meet Sacramento County design standards for rural arterials.

TR-8 Widen Florin Road between Bradshaw Road and Excelsior Road to include 12-foot travel lanes and minimum 6-foot shoulders to meet Sacramento County design standards for rural arterials.

TR-9 Widen Gerber Road Bradshaw Road and Excelsior Road to include 12-foot travel lanes and minimum 6-foot shoulders to meet Sacramento County design standards for rural arterials.

TR-10 Widen Vineyard Road between Gerber Road and Calvine Road to include 12-foot travel lanes and minimum 6-foot shoulders to meet Sacramento County design standards for rural arterials.

TR-11 Widen Calvine Road between approximately 1,300 feet east of Waterman Road to Excelsior Road to include 12-foot travel lanes and minimum 6-foot shoulders to meet Sacramento County design standards for rural arterials. (The section of Calvine Road from Elk Grove-Florin Road to approximately 1,300 feet east of Waterman Road will be widened from two to four lanes as part of a funded project included in Sacramento County's *1996 Transportation Improvement Plan.)*

TR-12 Modify the intersection of South Watt Avenue at Jackson Road to include a separate left turn lane, two through lanes, and a separate right turn lane on all approaches.

TR-13 Modify the Bradshaw Road/Jackson Road intersection to include the following lane configurations:

- Dual left turn lanes, two through lanes, and a separate right turn lane on the northbound and southbound approaches; and

- One left turn, one through lanes, and a separate right-turn on the eastbound and westbound approaches.

TR-14 Modify the Bradshaw Road/Elder Creek Road intersection to include the following lane configurations:

- One left turn lanes, two through lanes, and a separate right turn lane on the southbound approach;

- One left turn lanes, one through lane, and a shared through/right-turn lane on the northbound approach;

- One left turn and one shared through/right-turn lane on the eastbound approach; and

- One shared left-turn/through lane and one separate right turn lane on the westbound approach.

TR-15 Modify the Bradshaw Road/Florin Road intersection to include the following lane configurations:

- Dual left turn lanes, two through lanes, a separate right turn lane on the northbound and southbound approaches; and

- One left turn lane, two through lanes, and a separate right-turn lane on the eastbound and westbound approaches.

TR-16 Modify the Elk Grove-Florin Road/Gerber Road intersection to include the following lane configurations:

- Dual left turn lanes, two through lanes, and a separate right turn lane on the northbound and southbound approaches;

- One left turn lanes, one through lane, and a separate right-turn lane on the eastbound approach; and

- One left turn lane, one through lane, and a shared through/right-turn lane on the westbound approach.

The provision of northbound dual left turn lanes will require widening of the westbound departure leg on Gerber Road to two lanes before merging to a single travel lane in each direction. The length and merging distance for these lanes shall be approved by Sacramento County Transportation Division staff.

TR-17 Modify the Bradshaw Road/Gerber Road intersection to include the following lane configurations:

- Dual left turn lanes, two through lanes, and a separate right turn lanes on the eastbound and westbound approaches; and

- One left turn lane, two through lanes, and a separate right-turn lane on the northbound and southbound approaches.

The provision of southbound dual left turn lanes will require widening of the eastbound departure leg on Gerber Road to two lanes before merging to a single travel lane in each direction. The length and merging distance for these lanes shall be approved by Sacramento County Transportation Division staff.

TR-18 Install a signal at the South Watt Avenue/Elder Creek Road intersection and modify the lane configurations to the satisfaction of the Sacramento County Transportation Division.

TR-19 Install a signal at the Elk Grove-Florin Road/Florin Road intersection and modify the lane configurations to the satisfaction of the Sacramento County Transportation Division.

The following improvements are required to improve operating conditions under **Cumulative With Project** conditions:

TR-20 Access on Bradshaw Road shall be strictly limited between Florin Road and Elder Creek Road. With the exception of signalized intersections, limited driveway access shall be permitted along this roadway segment.

TR-21 Widen Elder Creek Road between South Watt Avenue and Excelsior Road to include 12-foot travel lanes and minimum 6-foot shoulders to meet Sacramento County design standards for rural arterials.

TR-22 Widen Excelsior road between Jackson Road and Calvine Road to include 12-foot travel lanes and minimum 6-foot shoulder to meet Sacramento County design standards for rural arterials.

TR-23 Widen Gerber Road between Vineyard Road and Excelsior Road to include 12-foot travel lanes and minimum 6-foot shoulders to meet Sacramento County design standards for rural arterials.

TR-24 Construct dual right turn lanes on the eastbound approach and triple left turn lanes on the northbound approach of the Bradshaw Road/Jackson Road intersection. Installation of these improvements should occur when the V/C ratio exceeds 1.00 or the peak hour volume for either movement exceeds roughly 950 vehicles.

TR-25 Modify the northbound and southbound approaches to the Jackson Road/Excelsior Road intersection to include a second through lane. Since

the northbound departure leg of this intersection is planned to accommodate two lanes, this improvement would only require modifications to Excelsior Road south of Jackson Road. The southbound departure leg would have to be widened to accommodate two lanes before merging into a single southbound lane. The length and merging distance for the second southbound lanes shall be approved by Sacramento County Transportation Division staff.

TR-26 Construct dual right turn lanes on the eastbound approach of the Bradshaw Road/Elder Creek Road intersection. Installation of these improvements should occur when the intersection V/C ratio exceeds 1.00 or the peak hour volume for either movement exceeds approximately 900 vehicles.

TR-27 Modify the northbound and southbound approaches to the Elder Creek Road/Excelsior Road intersection to include a second through lane. Since the projected daily volume is at the capacity of a typical two-lane roadway and the peak hour demand is over capacity, Excelsior Road must be widened to four lanes between Elder Creek Road and Jackson Road. The southbound departure leg of the Elder Creek Road/Excelsior Road intersection would have to be widened to accommodate two lanes to the Florin Road intersection (see TR-29).

TR-28 Construct dual right turn lanes on the eastbound approach of the Bradshaw Road/Florin Road intersection.

TR-29 Modify the eastbound approach at the Florin Road/Excelsior Road intersection to include dual left turn lanes and add a second northbound through lane. These improvements would require widening of Excelsior Road between Florin Road and Elder Creek Road to accommodate two departure lanes. Although the daily volume on the Excelsior Road north of Florin Road does not warrant two-northbound through lanes, these improvements are necessary to provide acceptable traffic operations based on peak hour forecasts. Similarly, two southbound lanes on Excelsior Road shall be constructed between Elder Creek and Florin Road (see TR-29).

Air Quality

Setting.

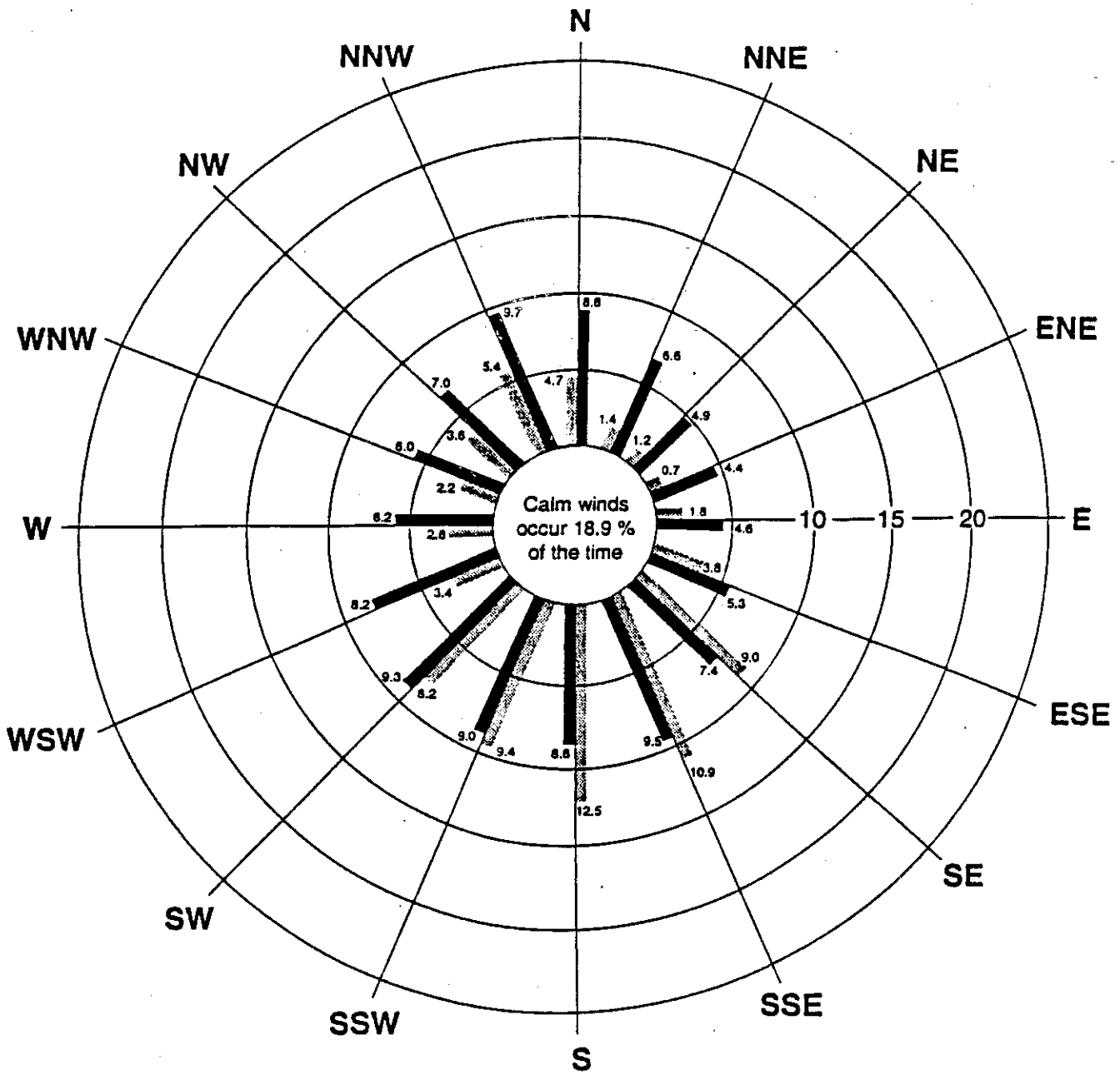
Climate and Atmospheric Conditions:

Sacramento County is located at the southern end of the Sacramento Valley, which is bounded by the Coast and Diablo ranges on the west and the Sierra Nevada range on the east. The county is about 50 miles northeast of the Carquinez Strait, a sea-level gap between the Coast Range and the Diablo Range. The prevailing winds are from the south, primarily because of marine breezes through the Carquinez Strait, although during winter the sea breezes diminish and winds from the north occur more frequently. Plate AQ-A shows a wind rose depicting annual average wind speed and directional frequency at Mather Field Airport, which is located about 4 miles northeast of the North Vineyard Specific Plan Area.

The project area experiences episodes of poor atmospheric mixing caused by inversion layers. Inversion layers are formed when temperature increases with elevation above ground (upper-level inversion) or when a mass of warm dry air settles over a mass of cooler air near the ground (low-level inversion). Surface inversions (0–500 feet) are most frequent during winter, and subsidence inversions (1000–2000 feet) are most frequent during summer. Inversion layers limit vertical mixing in the atmosphere, trapping pollutants near the surface.

Air Quality Pollutants and Ambient Air Quality Standards:

The criteria pollutants of greatest concern in Sacramento County are carbon monoxide (CO), ozone, and particulate matter less than 10 microns in diameter (PM_{10}).Pollutants are generally classified as either criteria pollutants or non-criteria pollutants. Federal and California ambient air quality standards have been established for criteria pollutants, but no ambient standards have been established for non-criteria or toxic air pollutants. For some criteria pollutants, separate standards have been set for different periods. Most standards have been set to protect public health. For some pollutants, standards have been based on other values (such as protection of crops, protection of materials, or avoidance of nuisance conditions). A summary of state and federal ambient air quality standards for criteria pollutants is shown in Table AQ-1.



Based on 297,279 hourly observations from 1941 to 1976.

LEGEND

Percent by direction

Mean wind speed (mph)

PLATE AQ-A

Source: California Air Resources Board 1984.

Wind Rose Depicting Average Wind Speed and Directional Frequency at Mather Air Force Base

TABLE AQ-1
NON-ATTAINMENT CRITERIA POLLUTANT AMBIENT AIR QUALITY
SACRAMENTO COUNTY

Pollutant	Federal Standard	State Standard	Monitoring Years[1]			
			1991	1992	1993	1994
OZONE						
One-hour maximum concentration (ppm)	0.12	0.09	0.18	0.13	0.15	0.15
Number of federal standard violations			5	2	3	0
Number of state standard violations			27	21	16	13
CARBON MONOXIDE						
One-hour maximum concentration (ppm)	35	20.0	11	9	10	9
Number of federal standard violations			0	0	0	0
Number of state standard violations			0	0	0	0
Eight-hour maximum concentration (ppm)	9	9.0	8	7.3	8	7.6
Number of federal standard violations			0	0	0	0
Number of state standard violations			0	0	0	0
PM_{10}						
24-hour maximum concentration ($\mu g/m^3$)	150	50	127	84	118	104
Number of federal standard violations			0	0	0	0
Number of state standard violations			5	0	7	6
Annual Arithmetic Mean ($\mu g/m^3$)	50	—	42.3	27.8	28.1	26.9
Annual Geometric Mean ($\mu g/m^3$)	—	30	31.9	24.4	23.2	22.5

Source: California Air Resources Board, California Air Quality Data (1991-1994).

Notes:

1. Monitoring data for 1991 thru 1994 were collected at the Del Paso monitoring station in Sacramento. Concentrations are listed for the highest observation recorded for each year.

Carbon Monoxide:

State and federal CO standards have been set for both 1-hour and 8-hour averaging times. The state 1-hour standard is 20 parts per million (ppm) by volume, and the federal 1-hour standard is 35 ppm. Both state and federal standards are 9 ppm for the 8-hour averaging period. CO is a public health concern because it combines readily with hemoglobin and thus reduces the amount of oxygen transported in the bloodstream.

Motor vehicles are the dominant source of CO emissions in most areas. High CO levels develop primarily during winter when periods of light winds combine with the formation of ground level temperature inversions (typically from the evening through early morning). These conditions result in reduced dispersion of vehicle emissions. Motor vehicles also exhibit increased CO emission rates at low air temperatures.

Ozone:

Ozone is not emitted directly into the air, but is formed by a photochemical reaction in the atmosphere. Ozone precursors, which include reactive organic gases (ROG) and oxides of nitrogen (NO_x), react in the atmosphere in the presence of sunlight to form ozone. Because photochemical reaction rates depend on the intensity of ultraviolet light and air temperature, ozone is primarily a summer air pollution problem. Ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and can cause substantial damage to vegetation and other materials.

State and federal standards for ozone have been set for a 1-hour averaging time. The state 1-hour ozone standard is 0.09 ppm, not to be exceeded. The federal 1-hour ozone standard is 0.12 ppm, not to be exceeded more than three times in any 3-year period.
Recently, the EPA has proposed to change the ozone standard to .09 ppm for 8 hours.

PM10:

Health concerns associated with suspended particulate matter focus on those particles small enough to reach the lungs when inhaled. Few particles larger than 10 microns in diameter reach the lungs. Consequently, both the federal and state air quality standards for particulate matter apply only to particulate matter 10 microns or less in diameter (generally designated as PM_{10}).

The state PM_{10} standards are 50 micrograms per cubic meter as a 24-hour average and 30 micrograms per cubic meter as an annual geometric mean. The federal PM_{10} standards are 150 micrograms per cubic meter as a 24-hour average and 50 micrograms per cubic meter as an annual arithmetic mean. The EPA has proposed to change the particulate standard to

15 micrograms per cubic meter annual and 50 micrograms per cubic meter daily for particulates 2.5 microns or smaller.

PM_{10} conditions in Sacramento County reflect a mix of rural and urban sources, including agricultural activities, industrial emissions, dust suspended by vehicle traffic, and secondary aerosols formed by reactions in the atmosphere.

Existing Air Quality Conditions:

Monitoring Data.

Air quality data for 1990–1994 from the Del Paso monitoring station located north of the project area are summarized in Table AQ-1. Data from 1994 are the most recent data available. Because many of the stations do not monitor all pollutants, a distinct set of monitoring stations was chosen for each pollutant that would best represent conditions at the project site, or in the case of ozone, the regional conditions. Monitored CO levels have been trending down over the last few years. This is primarily a result of the use of oxygenated gasoline during the winter CO season. The monitoring data shows several the state and federal 8-hour standard being exceeded in 1990 and 1991, but only two times during the most recent 3 years. The state ozone standard has been exceeded between three and 27 times each year. The state 24-hour PM_{10} standard has been exceeded between 5 percent and 17 percent of the time. Neither the state nor federal annual PM_{10} standards have been exceeded during the period.

Emission Sources.

There are two main categories of emission sources in any area: stationary and mobile. The main stationary source of CO in Sacramento County is fuel combustion. The main stationary source of ROG in Sacramento County is solvent use, and commercial and industrial fuel combustion represents the largest source of NO_x emissions. Mineral processes (e.g., aggregate extraction) are the largest sources of stationary source PM_{10} emissions in Sacramento County. The main mobile source of CO, ROG, NO_x, and PM_{10} is light-duty passenger vehicles (California Air Resources Board 1995b). Table AQ-2 is a summary of emissions by source for Sacramento County.

Regulatory Setting.

Air quality in Sacramento County is regulated by several agencies which include the U.S. Environmental Protection Agency (EPA), California Air Resources Board (CARB), and Sacramento Metropolitan Air Quality Management District (SMAQMD). Each of these agencies develop rules and/or regulations to attain the goals or directives imposed upon them through legislation. Although EPA regulations may not be superseded, both state and local regulations may be more stringent. In general, air quality is evaluated based upon standards developed by federal and state agencies. Mobile sources of air pollutants are largely controlled by federal and state agencies, while stationary sources are regulated by local air pollution control districts (APCD) or air quality management districts (AQMD).

Federal:

The Federal Clean Air Act (CAA) of 1970 and subsequent amendments established air quality standards for several pollutants. These standards are divided into primary standards and secondary standards. Primary standards are designed to protect the public health and secondary standards are intended to protect the public welfare from effects such as visibility reduction, soiling, nuisance, and other forms of damage. In addition, the State of California has adopted its own air quality standards. The federal and state standards are presented in Table AQ-1.

In 1977, the U.S. Environmental Protection Agency (EPA) designated the Sacramento Air Quality Maintenance Area (SAQMA), which includes Sacramento County, as a non-attainment area for ozone and carbon monoxide. This non-attainment status was based on continued violations of the federal primary standards for these pollutants.

The CAA required that regional plans be prepared for non-attainment areas illustrating how the federal air quality standards were going to be attained by December 31, 1987. In 1982, the Sacramento Area Council of Governments (SACOG) and member government agencies prepared the Sacramento Air Quality Plan designed to reduce emissions in the region through stationary source controls, transportation control measures, and mobile source controls.

Sacramento is one of many urban areas that failed to attain the National Ambient Air Quality Standards by 1987. In 1988, the Sacramento Air Quality Plan was disapproved by the EPA as it did not demonstrate attainment of the standards as required by the CAA.

The 1990 Federal Clean Air Act Amendments (CAAA) established new requirements for many areas, like Sacramento, that had not attained National Ambient Air Quality Standards (NAAQS). Non-attainment area classifications were set according to the severity of an area's air pollution problem. The EPA has classified the Sacramento metropolitan area, which includes all of Sacramento and Yolo Counties and parts of El Dorado, Placer, Solano and Sutter Counties, as a "severe" non-attainment area for ozone. All of Sacramento County has been classified as a "moderate" non-attainment area for PM10. The Sacramento urbanized area has been classified as a "moderate" non-attainment area for carbon monoxide. Each classification imposes specific control measures and establishes target dates by which an area must reach attainment. The following table lists the federal classification criteria and attainment dates for each criteria pollutant.

Criteria Pollutant	Classification	Attainment Date
Ozone	Severe	November 15, 2005
Carbon Monoxide	Moderate	December 31, 1995
PM10	Moderate	December 31, 2000

Prior to the 1990 amendments, non-attainment areas were only required to make "reasonable further progress" toward meeting the standards. The new amendments are more stringent and define each area's responsibilities in more detail. In the case of ozone, for example, non-attainment areas must reduce volatile organic compound (VOC) emissions by 15 percent within six years. To ensure that an area is implementing the necessary measures to achieve these emission reductions, the amendments establish a number of specific requirements that must be met over the next few years. EPA can impose sanctions, including withholding of federal highway funds or increasing new source offset requirements, on areas that fail to submit a plan or carry out any of the statutory requirements.

In response to federal Clean Air Act Amendment requirements, the California Air Resources Board (CARB) submitted a State Implementation Plan (SIP) to the EPA in November 1994. The SIP strives for compliance with the federal ozone standard by 2005 through provisions that would (1) establish a buy-back program for older, polluting cars, (2) require minimum percentage requirements for low- and zero-emission vehicles in new car fleets, and (3) incorporate regional attainment plans from throughout the state into the SIP. In November 1994, the Sacramento Regional Ozone Attainment Plan (ROAP) was submitted to CARB for inclusion in the State Implementation Plan. The ROAP was cooperatively prepared by five APCDs or AQMDs: the Sacramento Metropolitan AQMD, the Yolo-Solano APCD, the Feather River AQMD, the El Dorado County APCD, and the

Placer County APCD. The ROAP focuses on reducing emissions of ozone precursors through stationary and mobile source emission reduction measures.

The PM10 SIP needs to demonstrate attainment of the federal PM10 standards by December 2000. Data from air monitoring stations in Sacramento County indicates that there have been no violations of the federal PM10 standards since 1990. Based on this, the SMAQMD has requested that the Federal EPA correct the designation for PM 10 to "Attainment".

On April 26, 1996, the California Air Resources Board (CARB) heard and approved the proposed request for a federal carbon monoxide (CO) attainment redesignation and maintenance plan for 10 federal planning areas, including Sacramento. Sacramento County has been free of federal CO violations since 1993.

State:

The California Air Resources Board (CARB) regulates mobile sources of emissions and oversees the activities of APCDs and AQMDs. CARB regulates air quality by establishing vehicle emission standards, by conducting research activities, and through its planning and coordination activities.

The State of California has its own air quality standards. These standards are more stringent than the federal air quality standards. The federal and state standards are presented in Table AQ-1.

The California Clean Air Act (CCAA) was signed into law in January 1989. This legislation requires areas that exceed the California air quality standards to plan for the attainment of these standards. The time given to attain the state standards varies depending on the severity of an area's air quality problem. By 1991, local APCDs or AQMDs were required to submit a plan to achieve an annual reduction in district-wide emissions of five percent or more for each non-attainment pollutant or its precursor. Areas classified as "moderate" would have until 1994 to attain the state standards, while "serious" and "severe" areas would have until 1997 and beyond, respectively, to demonstrate attainment.

CARB has designated the Sacramento Valley Air Basin (SVAB), which includes Sacramento County, as a non-attainment area for ozone and particulate matter less than 10 microns in diameter (PM10). CARB has designated the Sacramento County urban area as a non-attainment area for carbon monoxide (CO). The following table lists the state classification criteria and attainment dates for each criteria pollutant.

Criteria Pollutant	Classification	Attainment Date
Ozone	Serious	1997
Carbon Monoxide	Serious	1997
PM10	Not Yet Determined	Not Yet Determined

In July 1991, the SMAQMD adopted its Air Quality Attainment Plan, as required by the California Clean Air Act (CCAA). The Plan addresses CCAA requirements which attempt to bring the District into compliance with state air quality standards. The Plan focuses on ozone and carbon monoxide emissions. Emissions reduction programs include public education, vehicle and fuels management, transportation controls, indirect source controls, and stationary source controls.

Local:

Sacramento County is within the jurisdiction of the Sacramento Metropolitan Air Quality Management District (SMAQMD). The SMAQMD regulates air quality through its permit authority over stationary sources of emissions, through its vehicle and fuels management program, and through planning and review activities. The SMAQMD is responsible for implementing the emissions standards and other requirements of federal and state law.

Criteria for Determining Significance of Impacts:

According to Appendix G of the State CEQA Guidelines, a project will normally have a significant effect on the environment if it will violate any ambient air quality standard, contribute substantially to an existing or projected air quality violation, or expose sensitive receptors to substantial pollutant concentrations.

In addition to the criteria detailed above, the SMAQMD's Air Quality Thresholds of Significance (Sacramento Metropolitan Air Quality Management District, 1994) were used in determining project-related air quality impacts. Project-related emissions were considered significant if emissions would increase by more than 85 ppd of ROG or NO_x or 275 ppd of PM_{10}.

TABLE AQ-2
EMISSIONS SUMMARY FOR SACRAMENTO COUNTY

Source Category	Pollutant Emissions (tons/day)						
	TOG	ROG	CO	NO_x	SO_x	PM	PM_{10}
Stationary Sources							
Fuel Combustion	0.1	0.3	5.1	4.4	0.1	0.4	0.4
Waste Disposal	76	1.1	N/A	N/A	N/A	N/A	N/A
Cleaning and Surface Coatings (solvent use)	14	12	N/A	N/A	N/A	N/A	N/A
Petroleum Production and Marketing	6.9	2.4	N/A	N/A	N/A	N/A	N/A
Industrial Processes	2.2	1.8	0.1	0.1	N/A	2.4	1.4
Total Stationary Sources	100	17	5.3	4.5	0.1	3.0	1.9
Area-Wide Sources							
Solvent Evaporation	23	23	N/A	N/A	N/A	N/A	N/A
Miscellaneous Processes[1]	35	14	58	3.2	0.1	270	140
Total Area-Wide Sources	58	36	58	3.2	0.1	270	140
Mobile Sources							
On-Road Vehicles	65	59	450	59	1.8	8.5	4.8
Other Mobile	6.4	6.1	51	19	2.1	1.0	0.9
Total Mobile Sources	71	65	510	78	4.0	9.5	5.8
TOTAL SACRAMENTO COUNTY	**230**	**120**	**570**	**86**	**4.2**	**280**	**140**

Source: CARB, 1995.

Notes:

1. PM_{10} Emissions are primarily from construction and demolition activities, entrained road dust, and waste disposal.

N/A Not Applicable

Impacts and Mitigation Measures:

Construction Impacts.

Construction activities in the North Vineyard Specific Plan Area would not all occur concurrently. Residential and commercial development in one area may occur several years after construction of another. However, regardless of the schedule, construction activities would generally consist of site grading and preparation, and building construction activities. Criteria pollutants emitted during construction would include: dust from earthmoving activities, exhaust from construction vehicles, exhaust from construction employee vehicles, and other pollutants from asphalt paving and architectural coatings. Construction-generated emissions would be temporary and would only occur during construction phases of development of the specific plan area.

The level of significance for each project would be dependant on the amount of development or construction that occurs during a daily period and the mitigation applied. Based on an assumed medium soil silt content and semi-arid climatic conditions, earth-moving construction activities would contribute approximately 1.2 tons of particulates per acre of construction area per month of earthmoving activity. Earthmoving activities generally occur during the first several months of construction of each parcel; during this period, unmitigated dust emissions from earthmoving activities would be likely to create short-term violations of ambient PM_{10} standards and generate dust emissions exceeding the 275 pound per day significance threshold.

Construction employee vehicle trips, equipment exhaust, architectural coating, and asphalt paving activities would represent temporary sources of ozone precursors (No_x and ROG). Construction related air quality impacts are considered potentially significant adverse impact for certain levels of construction activity. Impacts can be reduced to a ***less than significant*** level by applying mitigation measures to reduce dust and exhaust emissions. Mitigation measures that can be used are as follows:

Construction Impact Mitigation Measures:

AQ-1 Prepare and implement a dust control plan that includes:
- the use of water or chemical palliatives on disturbed soils;
- the stabilization of soil piles with vegetation or by covering;
- allowing two feet of freeboard and the covering of haul trucks loads;
- conducting no grading during period of high winds exceeding 25 miles per hour

AQ-2 Maintain construction equipment and vehicles in proper running order. Construction contractors shall be required to show written evidence of appropriate maintenance prior to bring equipment on site.

Regional Emissions Impacts.

The development of the North Vineyard Specific Plan area with urban uses would create a source of ozone precursors that would impact the air quality of the region. Area, stationary and mobile sources would also result in emissions of particulates (PM_{10}) that would impact regional air quality. Estimations of emissions for the proposed project and the 10 per cent and 15 per cent alternatives are presented on Table AQ-3 and compares them to applicable SMAQMD significance criteria.

Project-generated sources of PM_{10} and ozone precursors (NOx and ROG) would primarily consist of vehicle trips attracted to and generated in the Plan area, and to a lesser extent emissions from the combustion of natural gas at residential and commercial developments.

Operational emissions of NO_x , ROG, and PM_{10} would exceed the applicable SMAQMD significance criteria. As shown in Table AQ-3, emissions from mobile sources constitute the majority of emissions associated with the proposed project. Area source emissions alone for ROG and PM_{10} would fall well below applicable significance criteria and NO_x emissions exceed the standard, but not by a substantial amount. However, mobile source generation of NO_x , ROG, and PM_{10} greatly exceed standards and would be a ***significant adverse impact*** of proposed project under any of the three land use scenarios.

TABLE AQ-3
CRITERIA POLLUTANT EMISSIONS
(POUNDS PER DAY|

Criteria Pollutant	Proposed Project			10 % Density Alt			15% Density Alt			Signif. Criteria (lb/day)
	Area Sources[1]	Mobile Sources[2]	Total	Area Source	Mobile Source	Total	Area Sourc e	Moblie Source	Total	
NO_x	112.6	1382.0	1494.6	102.8	1352.6	1455.4	96.1	1272.6	1368.7	85
ROG	7.2	513.5	520.7	7.0	502.7	509.7	6.6	473.3	479.9	85
PM_{10}	0.3	373.9	373.9	0.2	368.5	368.7	0.2	354.4	354.6	275

1. Area source emissions were calculated based on proposed land use designations and acreage by using the SMAQMD's emission calculation methodologies (1994) for determining residential and commercial source natural gas combustion emissions.

2. Mobile source emissions were calculated using CARB's URBEMIS5 emission model assuming average summer temperatures of 75 °F.

Regional Emissions Mitigation Measures:

Should the proposed plan be approved, the air quality impacts can be lessened somewhat by reducing trip generation and attendant traffic congestion. Travel demand reduction measures would lessen the impact to air quality by either eliminating vehicle trips, reducing their length, or changing the time of day when they occur.

The proposed North Vineyard Station Specific plan addresses General Plan policies intended to mitigate land use development impact on air quality in the following manner:

> *Policy AQ-23. Promote mixed-use development to reduce the length and frequency of vehicle trips.*

The Plan includes a mixture of land uses and over 38 acres designed for retail commercial and business/professional uses. While these uses are not intended to meet all employment and commercial needs of Plan area residents, it is anticipated that the length and frequency of trips will be reduced to some degree.

> *Policy AQ-24. Provide for increased intensity of development along existing and proposed transit corridors.*

The Plan is consistent with Policy AQ-24 because the highest intensity land uses (Neighborhood Commercial and Business/Professional) and the majority of the highest density residential uses (Multi-Family Residential) are located near the Transit Center, a proposed future light rail station. All Commercial and Medium and Multi-Family Residential land uses are located on located on mayor arterials easily served by transit.

<u>Bus and Light Rail Transit Facilities</u>

Provision of public transit within the county is guided by the following General Plan policy:

> *Policy CI-4. Require full and accurate analysis of all alternatives for public transit, including expanded bus service, private carrier operations, road capacity improvements, and rail transit, prior to committing funds for construction. Evaluation shall specifically include full social and economic costs and benefits, as well as net system effects and per-new-rider costs.*

Regional Transit recently completed its Transit Master Plan, which identifies costs and benefits of transit service, including specific recommendations for the study area.

These recommendations include bus service along major streets and future light rail service through the Plan area within the California Central Traction Railroad right-of-way. This was addressed in RT's federally-required Alternatives Analysis/Draft Environmental Impact Statement/Draft EIR.

Transit Corridors. The transit facilities included as part of the Plan are designed to coordinate with and maximize the potential of those transit corridors identified by RT and Sacramento County. As noted in the Plan RT guidelines recommend bus stops at one-quarter mile intervals in suburban settings, and they recommend turnouts when traffic volumes, speeds, and service frequency warrant safe stopping areas for buses. Consistent with this standard, the Circulation Plan shows bus stops at one-quarter mile intervals.

Roadways within the Specific Plan area will be designed to accommodate transit facilities such as turnouts, bus stops, and shelters should individual routes be designated on major collector streets. Thus, implementation of the proposed project will not disrupt or interfere with existing or planned transit operations in the area, and no operational deficiencies have been identified.

The Plan area has been designed to capitalize upon the designated bus routes. Specifically, higher density residential development, as well as commercial uses, are located at major intersections along transit routes, and the highest intensity land uses are located near the Transit Center.

Transit Center. A 10-acre Transit Center has been designated in the Plan to ultimately provide parking for car pools and buses and to facilitate the possible future extension of light rail transit into the Plan area. Included are a 1.1-acre transit station site and nine acres for park and ride lots. The Transit Center adjoins the Plaza Park, a specialized park intended to compliment the transit facilities and attract transit users.

The Transit Center, as described in the Plan is designed in accordance with Sacramento RT design standards for suburban light rail stations with the following amenities:

- Security features
- Shelters (platforms and ramps)
- Station furniture (benches, trash receptacles, telephones, drinking fountains)
- Information display (kiosks, schedule displays)
- Fare vending equipment
- Lighting
- Landscaping/planters

- Bicycle lockers/secure bicycle racks
- Artwork
- Concessionaires

On the basis of RT standards of 100 parking spaces per acre, the nine-acre parking area can be expected to accommodate approximately 900 vehicles. Also, park and ride areas are permitted uses in the Commercial sites. These provisions for park and ride facilities are consistent with the following General Plan policy:

> *Policy AQ-28. Require that large new developments dedicate land for use as park-and-ride lots if suitably located.*

Travel Demand Reduction Measures

Travel demand reduction measures are incorporated into various aspects of the Plan in order to reduce vehicle emissions, thereby reducing traffic congestion and improving air quality. The General Plan addresses air quality in the following policy:

> *Policy AQ-15. All new major indirect sources of emissions shall be reviewed and modified or conditioned to achieve a reduction in emissions. This indirect source review program will be developed in coordination with SACOG and SMAQMD, and include the following features:*
>
> *A. A 15 percent reduction in emissions from the level that would be produced by a base-case project assuming full trip generation per the current ITE Trip Generation Handbook.*
>
> *B. A focus on cost-effectiveness measured in terms of cost per ton of pollutant avoided.*
>
> *C. A list of cost-effective measures to be developed, maintained, and annually reviewed by SMAQMD.*
>
> *D. A maximum expenditure cap which will be computed for each indirect source on the basis of factors including, but not limited to, total emissions and project value.*
>
> *E. A process for obtaining a waiver from the 15 percent requirement if it is found that a lower level of reduction is all that can be achieved with cost-effective measures and offsets, or that achieving the full 15 percent reduction would cost more than expenditure cap.*

F. An exception for projects which have already undergone the indirect source review at some point in the development approval process.

G. A procedure to give full credit for other measures required in a project that may also achieve a reduction in emissions.

Sacramento County has developed a preliminary list of measures and corresponding credits that can be applied to the required 15 percent reduction in emissions. This list is based on data originally prepared by the SMAQMD in a February, 1995 report entitled *Indirect Source Review Program: Implementation Guidelines*. Sacramento County is currently developing specific requirements that will be incorporated into the Zoning Code.

The following measures, which are incorporated into the North Vineyard Station Specific Plan, are all contained in the preliminary list of acceptable measures. According to the County's preliminary guidelines, the above measures result in a 15.5 percent reduction in emissions and meet the requirements of General Plan Policy AQ-15.

1. The Plan contains a mixture of complementary land uses (residential, commercial, parks, schools) located within the project or within one-half mile of the project boundaries. Approximately half of the Plan meets the County's criteria, which allows for up to a 6% credit. SPECIFIC PLAN CREDIT = 3%.

2. The Plan is designed to provide a transit stop within a reasonable distance of all land uses. The proposed roadway network of Arterial, Thoroughfare, and Collector streets would accommodate bus stops within one-quarter mile of most land uses. SPECIFIC PLAN CREDIT = 2%.

3. The Plan will include easements to accommodate bus stop improvements (route signs, benches, shelters and lighting) at all major transit stops. Current RT policy only requires easements for stops since a private firm provides the shelter and related improvements in exchange for advertising space. SPECIFIC PLAN CREDIT = 2%.

4. The Plan is designed to accommodate and provide access to the planned on-street (Class II) bicycle lanes as identified in the 2010 Sacramento City/County Bikeway Master Plan (BMP). On-street facilities within one-half mile of the project site are planned on Florin, Bradshaw, and Gerber Roads, and the entire Plan area meets the criteria. SPECIFIC PLAN CREDIT = 2.0%

5. In addition to the bikeways included in the BMP, both on-street and off-street facilities are included throughout the Plan area and will be located within one-half mile of all

major land uses. SPECIFIC PLAN CREDIT = 1.5%

6. Through policy language, the Plan provides for direct (i.e., minimum distance) pedestrian connections between adjacent and complementary land uses. All parks, schools, and commercial areas will be connected to residential areas by interconnected roads and pathways. SPECIFIC PLAN CREDIT = 2%

7. The Plan circulation system provides direct automobile access between complementary land uses to minimize the distance traveled, within the limits of physical constraints (i.e., drainage parkways). SPECIFIC PLAN CREDIT = 1%

8. The Plan area will participate in a Transportation Management Association to create, administer, and finance on-going programs to reduce vehicle trips. The Financing Plan for the Plan will include means to fund the TMA. SPECIFIC PLAN CREDIT = 3%

TOTAL SPECIFIC PLAN CREDIT: 15.5%

Local Air Quality.

Development of the North Vineyard Specific Plan Area would introduce additional vehicular traffic to roadways. The primary local pollutant of concern with respect to vehicle exhaust is CO. Other local pollutants, such as NO_2 and PM_{10}, are also emitted by automobiles, however high localized concentrations of these pollutants do not typically result from vehicular emission sources. CO emissions from vehicular traffic would add to existing background CO concentrations, and would be of concern at heavily congested intersections and in areas where the Proposed Project would add substantial vehicle volumes to the network.

A carbon monoxide analysis was conducted to evaluate the potential localized air quality impacts associated with project-generated vehicular traffic. Eight intersections most affected by project traffic as evidenced by severe future congestion were analyzed. CO concentrations were estimated based on traffic data provided in this DEIR, using the Screening Procedure found in the Institute of Transportation Studies Transportation Project - Level Carbon Monoxide Protocol (1995).

As shown in Table AQ-4, worst case cumulative plus project traffic with associated congestion at build out of the proposed planning area will cause the eight hour State and Federal carbon monoxide standard to be exceeded at four of the eight intersections analyzed. Because the levels exceed the standard, the impact is considered ***significantly adverse.*** The one hour standard, however, would not be exceeded.

TABLE AQ-4
ESTIMATED CO CONCENTRATIONS ASSOCIATED WITH CUMULATIVE PLUS PROPOSED PROJECT TRAFFIC

Intersection	One-Hour CO Concentrations (ppm)		Eight-Hour CO Concentrations (ppm)	
	Proposed Project Year 2010	Standard[3]	Proposed Project Year 2010	Standard[3]
Elk Grove-Florin Road/Gerber Road	19.5	20.0	13.7	9.0
Bradshaw Road/Jackson Road	10.7		7.5	
South Watt Avenue/Jackson Road	9.5		6.6	
Bradshaw Road/Florin Road	17.3		12.1	
Elk Grove-Florin Road/Florin Road	17.3		12.1	
South Watt Avenue/Elder Creek Road	13.8		6.3	
Elk Grove-Florin Road/Calvine Road	9.6		6.7	
Bradshaw Road/Elder Creek Road	16.6		11.6	

Notes:
1. Background concentrations from SMAQMD thresholds of significance, 1994.
2. Eight-hour modeled CO contributions were assumed to be 70% of the modeled one-hour contribution.
3. Applicable standards for CO concentrations are for California. California ambient CO concentration standards are more stringent than the corresponding federal standards.

Conclusion:

The project will increase regional concentrations of ozone and could, further delay the eventual attainment of state and federal standards. Also, the projects carbon monoxide emissions would contribute to adverse localized air quality conditions at congested intersections. Any reduction in project vehicle trips and emissions would help reduce impacts on air quality, however, basin-wide emissions would increase with the project. Because these emissions would contribute to conditions that already violate air quality standards, effects upon air quality are considered ***significant and unavoidable***.

Noise

Project related noise impacts on existing and future sensitive receptors are evaluated in this section. Discussion of noise issues related to development of the Specific Plan are presented and mitigation measures are suggested to minimize or eliminate the potential noise impacts.

Background.

Noise is defined as unwanted sound. Sound is a rapid fluctuation of air pressure above and below atmospheric pressure. Sound levels are measured and expressed in decibels (dB) with 0 dB corresponding roughly to the threshold of hearing. Decibels and other technical terms are defined in Table NO-1.

Most environmental sounds consist of several frequencies, with each frequency differing in sound level. The intensities of each frequency add together to generate sound. The method commonly used to quantify environmental sounds consists of evaluating all of the frequencies of a sound in accordance with a weighing that reflects the facts that human hearing is less sensitive at low frequencies and extreme high frequencies than in the frequency mid-range. This is called "A" weighting, and the decibel level so measured is called the A-weighted sound level, or dBA. In practice, environmental noise is usually measured with a meter that includes an electrical filter corresponding to the A-weighing curve. Typical A-levels measured in the environment and in industry are shown on Plate NO-A.

Setting.

Motor vehicle traffic is the major contributor tot he existing noise environment in the Plan Area. Major vehicular noise in the Plan Area occurs along Florin Road, Gerber Road, and Bradshaw Road. Another major noise source in the Plan Area occurs along the Central California Traction Railroad Tracks as a result of train movement and operations along the railroad tracks. A third potentially significant noise source impacting the Plan Area is Mather Field, about 3 miles northeast of the Plan Area. There are no significant stationary noise sources, such as factories, stadiums, or industrial, or commercial uses, located in the Plan Area.

Residential uses are the primary 'noise sensitive receptors' located through out the Plan Area. There are numerous existing residences located within the Plan Area and vicinity. Residences are principally located along Florin, Gerber, and Bradshaw roads. The exception are the agricultural-residential homes located along minor roads such as McCoy Lane, Passalis Lane, and Hedge Avenue in the west Plan Area and vicinity, Heather Place Lane in the east Plan Area, Gavern Lane on the west side of Bradshaw Road, and Bar Du

TABLE NO-1 ACOUSTICAL TERMINOLOGY	
TERM	**DEFINITION**
Ambient Noise Level:	The composite of noise from all sources near and far. In this context, the ambient noise level constitutes the normal or existing level of environmental noise at a given location.
Intrusive Noise:	That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.
Decibel, dB:	A unit for describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals (20 micronewtons per square meter).
Frequency, Hz	The number of complete pressure fluctuations per second above and below atmospheric pressure.
Community Noise Equivalent Level, CNEL*:	The average equivalent sound level during a 24-hour day, obtained after addition of approximately five decibels to sound levels in the evening form 7:00 p.m. to 10:00 p.m. And ten decibels to sound levels in the night before 7:00 a.m. and after 10:00 p.m.
Day/Night Noise Level, L_{dn}*:	The average equivalent sound level during a 24-hour day, obtained after addition of ten decibels to sound levels in the night after 10:00 p.m. And before 7:00 a.m.
Equivalent Noise Level, L_{eq}:	The average noise level during the measurement or sample period. L_{eq} is typically computed over 1, 8 and 24-hour sample periods.
L_{max}, L_{min}:	The maximum or minimum sound level recorded during a noise event.
L_n :	The sound level exceeded "n" per percent of the time during a sample interval. L_{10} equals the level exceeded 10 percent of the time (L_{90}, L_{50} , etc.)
Noise Exposure Contours:	Lines drawn about a noise source indicating constant levels of noise exposure. CNEL and L_{dn} contours are frequently utilized to describe community exposure to noise.
Sound Exposure Level, SEL; or Single Event Noise Exposure Level, SENEL:	The level of noise accumulated during a single noise event, such as an aircraft overflight, with reference to a duration of one second. More specifically, it is the time integrated A-weighted squared sound pressure level for a stated time interval or event, based on a reference pressure of 20 micropascals and a reference duration of one second.
Sound Level, dBA:	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the response of the human ear and gives good correlation with subjective reactions to noise.

Source: Sacramento County Noise Element, Appendix A, 1993.

PLATE NO-A

Examples of Noise Levels

Noise Source	A-Weighted Noise Level	Subjective Description
Amplified rock 'n' roll band ▸	120 dB(A)	
Commercial jet takeoff at 200 feet ▸		DEAFENING
	100 dB(A)	
Busy urban street ▸		VERY LOUD
	80 dB(A)	
Freeway traffic at 50 feet ▸		LOUD
Normal converstion at 6 feet ▸	60 dB(A)	
Typical Office (interior) ▸		MODERATE
Soft radio music ▸	40 dB(A)	
Typical residential (interior) ▸		FAINT
Typical whisper at 6 feet ▸	20dB(A)	
Human breathing ▸		VERY FAINT
	0 dB(A)	

Lane on the south side of the Plan Area.

Regulatory Setting.

In order to limit population exposure to physically and/or psychologically damaging noise levels, the State of California and Sacramento County have established standards and ordinances to control noise.

State of California: The California Department of Health Services' (DHS) office of Noise Control has studied the correlation of noise levels and their effects on different land uses. As a result, the DHS has established four categories for judging the severity of noise intrusion on specified land use. Noise in the "normally acceptable" category places no undue burden on affected receptors and would need no mitigation. As noise rises into the "conditionally acceptable" range, some mitigation of exposure, as established by an acoustic study, would be warranted. At the next level, noise intrusion is so severe that it is classified "normally unacceptable" and would require extraordinary noise reduction measures to avoid disruption. Finally, noise in the "clearly unacceptable" category is so severe that it can not be mitigated.

Title 24 of the California Administrative Code establishes standards governing interior noise levels that apply to all new multifamily residential units in California. The standards require that acoustical studies be performed prior to construction at building locations where the existing L_{dn} exceeds 60 dBA. Such acoustical studies are required to establish mitigation measures that will limit maximum L_{dn} noise levels to 45 dBA in any inhabitable room. The U.S. Department of Housing and Urban Development (HUD) has set an L_{dn} of 45 as its goal for interior noise in residential units built with HUD funding.

The California Division of Aeronautics requires land uses withing a 65 CNEL contour around airports to be compatible with airport operations. Otherwise, the airport operator is required to obtain a variance from the state to continue airport operations. Land uses considered incompatible within the 65 CNEL are single and multiple family dwellings, trailer parks, schools of standard construction, hospitals and childcare facilities.

County General Plan Noise Element: In accordance with State noise regulations, the Sacramento County General Plan Noise Element sets forth land use compatibility criteria for various community noise levels, as shown on Table NO-2. For noise generated by transportation noise sources (roads and railroads), the Noise Element specifies that residential land uses are unconditionally compatible with exterior noise levels of up to 60 dB L_{dn}. The 60 dB L_{dn} noise level is considered an acceptable noise environment for residential outdoor activities. Where the exterior noise level from transportation sources is between 60 and 75 dB L_{dn}, the Noise Element specifies that residential uses should be permitted only after

TABLE NO-2
County Land Use Compatibility for Community Noise Environments

LAND USE CATEGORY	COMMUNITY NOISE ENVIRONMENTS L_{dn} or CNEL dB						
	55	60	65	70	75	80	
RESIDENTIAL Including AR-1 and AR-2							
AGRICULTURAL RESIDENTIAL 5 and 10 acres							
TRANSIENT LODGING- MOTELS, HOTELS							
SCHOOLS, LIBRARIES, CHURCHES, HOSPITALS, NURSING HOMES							
AUDITORIUMS, CONCERT HALLS, AMPHITHEATRES, SPORTS ARENAS							
PLAYGROUNDS, NEIGHBORHOOD PARKS							
GOLF COURSES, RIDING STABLES, WATER RECREATION, CEMETERIES							
OFFICE BUILDINGS, BUSINESS COMMERCIAL AND PROFESSIONAL							
INDUSTRIAL, MANUFACTURING, UTILITIES, AGRICULTURE							
OPEN SPACE, AGRICULTURE							

ACCEPTABLE: Specified land use is satisfactory.

CONDITIONALLY ACCEPTABLE Use should be permitted only after careful study and inclusion of protective measures as needed for intended use and to satisfy policies of the Noise Element

UNACCEPTABLE: Development not feasible in accordance with Noise Element. Use prohibited.

Source: Sacramento County General Plan, Noise Element Figure II-4 (p. 22)

careful study and inclusion of noise reduction, or attenuation measures as needed. In these instances, an exterior noise level of 65 dB L_{dn} may be allowed in outdoor activity areas provided that "all practical" exterior noise reduction measures are applied.

An interior noise level criteria of 45 dB L_{dn} is specified in the Noise Element for residential land uses exposed to transportation noise sources. The intent of this interior noise standard is to provide a suitable environment for indoor communication and sleep. For noise generated by non-transportation noise sources (industrial and commercial machinery and uses, etc.), the Noise Element specifies that residential land uses are compatible with exterior daytime levels up to 70dB L_{max}.

The Noise Element policies associated with transportation and non-transportation noise sources applicable to the current project are as follows:

NO-1. Noise created by new transportation noise sources should be mitigated so as not to exceed 60 dB Ldn/CNEL at the outdoor activity areas of any affected residential lands or land use situated in the unincorporated areas. When a practical application of the best available noise-reduction technology cannot achieve the 60dB Ldn CNEL standard, then an exterior noise level of 65dB Ldn CNEL may be allowed in outdoor activity areas.

NO-2. Noise created by new non-transportation noise sources shall be mitigated so as not to exceed any of the noise level standards of Table II-1 (*Table NO-3 of this EIR*), as measured immediately within the property line of any affected residentially designated lands or residential land use situated in the unincorporated areas.

NO-3. Where proposed non-transportation noise sources are likely to produce noise levels exceeding the performance standards of Table II-1 (*Table NO-3 of this EIR*) at existing or planned residential uses, an acoustical analysis shall be required as part of the environmental review process so that noise mitigation may be included in the project design.

NO-4. Where residential land uses are proposed in areas exposed to existing or projected exterior noise levels exceeding either 60 dB Ldn/CNEL or the performance standards of Table II-1 (*Table No-3 of this EIR*), an acoustical analysis shall be required as part of the environmental review process so that noise mitigation may be included in the project design.

NO-5. New residential development shall not be allowed where the noise level due to non-transportation noise sources will exceed the noise level standards of Table II-1 (Table NO-3 of this EIR), as measured immediately within the property line of the new development.

TABLE NO-3 Sacramento County Noise Level Performance Standards For Residential Areas Affected by Nontransportation Noise		
Statistical Noise Level Descriptor	Exterior Noise Level Standard	
	Daytime (7am-10pm)	Nighttime (10pm-7am)
L_{50}	50 dB	45 dB
L_{max}	70 dB	65 dB

Source: Sacramento County Noise Element, Table II-1 (p.7).

TABLE NO-4 Acceptable Noise Levels in Unoccupied Rooms Affected by Transportation Noise	
Location	Average Sound Level, dB [1]
Radio studios, recording studios	25-30
Concert halls, large auditoriums	30-35
Motion picture theaters	40-45
Conference rooms, small offices	40-45
Public offices (large), banks, stores	45-50
Restaurants, cafeterias	45-55
Libraries	40-45
Music rooms	30-35
Theaters (speech)	30-35
Churches	35-40
Classrooms	35-45
Hospitals	40-45
Court rooms	40-45

[1] L_{eq} during worst case hour when in use.

Source: Brown Buntin & Associates. *Environmental Noise Analysis, North Vineyard Station Specific Plan*, December 4, 1996.

TABLE NO-5 Sacramento County Noise Ordinance Standards			
Cumulative Duration of the Intrusive Sound	Descriptor	Exterior Noise Standard, dB	
		Daytime (7am-10pm)	Nighttime (10pm-7am)
30-60 minutes per hour	L_{50}	55	50
15-30 minutes per hour	L_{25}	60	55
5-15 minutes per hour	L_{08}	65	60
1-5 minutes per hour	L_{02}	70	65
Level not to be exceeded at any time	L_{max}	75	70

In accordance with Policies NO-3 and NO-4, an environmental noise analysis was prepared for the Specific Plan by Acoustical Consultants, Brown Buntin and Associates (BBA). This analysis, entitled *Environmental Noise Analysis, North Vineyard Station Specific Plan* (December 4, 1996) and can be reviewed at the Sacramento County Department of Environmental Review and Assessment (DERA), and/or the Planning and Community Development Department. Based on the County Noise Element, BBA summarized the acceptable noise levels allowed by the County General Plan Noise Element for unoccupied rooms affected by transportation noise presented on Table NO-4.

County Noise Ordinance: Noise generated by non-transportation noise sources are regulated by the County Noise Ordinance as summarized in Table NO-5.

Non-regulatory Setting - Subjective Reactions to Changes in Noise Levels.

Another means of assessing noise impact is to estimate public reaction to the change in noise level which result from a given project. Expected human reactions to changes in ambient noise levels have been quantified by metrics that define short-term exposure (e.g., hourly L_{eq}, L_{max} and L_n). These metrics are usually used to describe noise impacts due to industrial operations, machinery and other sources that are not associated with transportation. An increase of at least 3 dB is usually required before most people will perceive a change in noise levels, and an increase of 5 dB is required before the change will be clearly noticeable.

Table NO-6 is used to show expected public reaction to changes in environmental noise levels. This table was developed on the basis of test subjects's reactions to changes in the levels of steady-state pure tones or broad-band noise and to changes in levels of a given noise source.

Table NO-7 is based upon 1992 recommendations made by the Federal Interagency Committee on Noise (FICON) to provide guidance in the assessment of changes in ambient noise levels resulting from aircraft operations. FICON recommendations are based upon studies that relate aircraft noise levels to the percentage of persons highly annoyed by the noise. Although the FICON recommendations were specifically developed to assess aircraft noise impacts, it has been assumed for this analysis that they are applicable to all sources of noise that are described in terms of cumulative noise exposure metrics such as the L_{dn} or CNEL.

Technical Study/Environmental Noise Analysis.

The noise analysis for the Preferred Specific Plan Area was prepared by Brown-Buntin and Associates (BBA) and incorporated into the discussion that follows.

TABLE NO-6
Subjective Reaction to Changes in Noise Levels of Similar Sources

Change in Level, dB	Subjective Reaction	Factor Change in Acoustical Energy
1	Imerceptible (Except for tones	1.3
3	Just Barely Perceptible	2.0
5	Clearly Noticeable	3.2
10	About Twice (or Half) as loud	10.0

Source: *Architectural Acoustics, M. David Egan, 1988.*

TABLE NO-7
Significance of Changes in Cumulative Noise Exposure

Ambient Noise Level Without Project (L_{dn} or CNEL)	Significant Impact
<60 dB	+5.0 dB or more
60-65 dB	+3.0 dB or more
>65 dB	+1.5 dB or more

Source: Federal Interagency Committee on Noise (FICON), as applied by Brown-Buntin Associates, Inc.

Existing Noise Levels:

Existing Traffic Noise Levels.

BBA used the Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA RD-77-108) for the prediction of existing traffic noise levels. The FHWA Model is the analytical method currently favored for traffic noise prediction by most state and local agencies. The model is based upon the CALVENO noise emission factors for automobiles, medium trucks and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site.

The FHWA Model was developed to predict hourly L_{eq} values for free-flowing traffic conditions, and is considered to be accurate within 1.5 dB. To predict L_{dn} values, it is necessary to determine the day/night distribution of traffic and adjust the traffic volume input data to yield an equivalent hourly traffic volume.

Existing traffic data for area roadways were obtained from Fehr & Peers Associates, traffic consultants. Other assumptions regarding day/night traffic distributions, speed and truck mix are based upon BBA file data and assumptions used in the Sacramento County Noise Element. Table NO-8 shows the distances to the existing 60 and 65 dB L_{dn} noise contours for each of the areas roadways, based upon the FHWA Model.

Existing Train Noise Levels.

BBA conducted continuous 24-hour noise level measurements on the project site on May 17-19, 1995 (See Plate NO-B). The intent of the noise level measurements were to determine typical hourly noise levels on the project site. This monitoring site was also used to evaluate typical noise events due to operations on the Central California Traction Railroad (CCTRR). Equipment used for the noise level measurements included a Larson Davis Laboratories (LDL) Model 700B precision integrating sound level meter. The equipment was calibrated prior to use to ensure accuracy using an LDL Model CA250 acoustical calibrator.

Plates NO-C and NO-D graphically show the results of the noise level measurements for the two day period. During the 24-hour period from 2:00 p.m. on May 17, 1995 to 2:00 p.m. on May 18, 1995, there were three train operations which were measured. The measured L_{dn} during that period was 61.2 dB. During the 24-hour period from 2:00 p.m. on May 18, 1995 to 2:00 p.m. on May 19, 1995, there were two train operations which were measured. The measured L_{dn} during that period was 61.1 dB.

If the noise levels due to the train events for the two days during the measurement period are subtracted from the hourly average noise levels during which the train operations occurred, the calculated L_{dn} values for the two days are 53.3 dB (May 17-18, 1995) and 54.3 dB (May

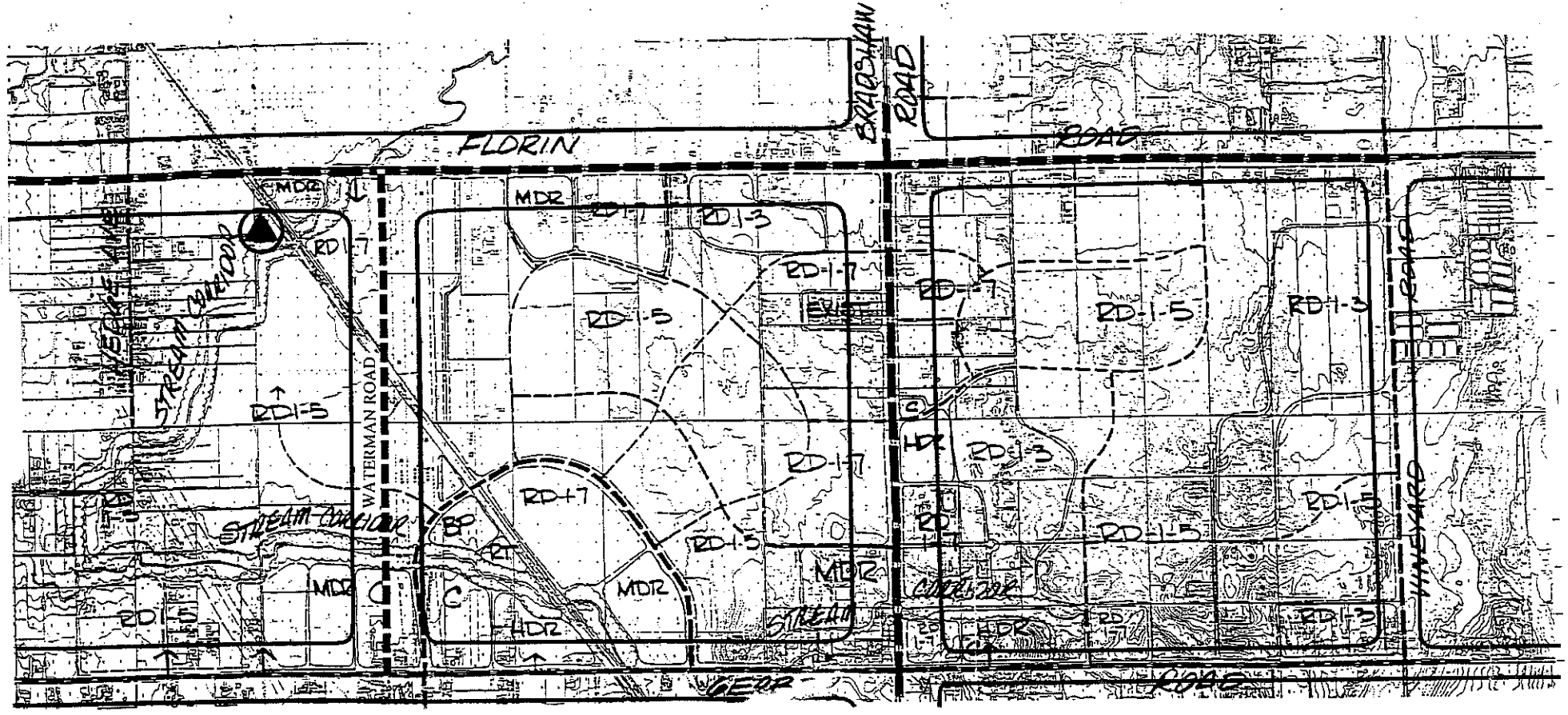
TABLE NO-8
EXISTING TRAFFIC NOISE LEVELS

Roadway	L_{dn}, dB at 75'	Distance to L_{dn} Contour (feet)	
		60 dB	65 dB
Florin Road			
West of Watt Ave.	65.6	177	82
Watt Ave. to Bradshaw Rd.	62.6	112	52
Bradshaw Rd. to Excelsior Rd.	59.4	68	32
Gerber Road			
West of Elk Grove-Florin Rd.	66.7	208	97
Elk Grove-Florin Rd. to	63.0	120	56
Bradshaw Rd.	57.4	50	23
Bradshaw Rd. to Excelsior Rd.			
Bradshaw Road			
Calvine Rd. to Gerber Rd.	64.0	138	64
Gerber Rd. to Florin Rd.	65.6	178	82
Florin Rd. to Elder Creek Rd.	65.4	172	80
Elder Creek Rd. to S.R. 16	66.2	195	90
Vineyard Road			
Calvine Rd. to Gerber Rd.	54.3	31	15
Gerber Rd. to Florin Rd.	---	---	---
Elk Grove-Florin Road			
Calvine Rd. to Gerber Rd.	64.8	157	73
S. Watt Avenue			
Gerber Rd. to Florin Rd.	64.7	155	72
Florin Rd. to Elder Creek Rd.	65.4	172	80
Elder Creek Rd. to S.R. 16	67.8	248	115
Calvine Road			
West of Elk Grove-Florin Rd.	62.4	108	50
Elk Grove-Florin Rd. to	61.8	98	46
Bradshaw Rd.	59.1	66	30
Bradshaw Rd. to Excelsior Rd.			

PLATE NO-B

RAILROAD MONITORING LOCATIONS &

FUTURE 60dB L_{dn} ROADWAY NOISE CONTOURS



: Continuous 24-hour and Railroad Noise Monitoring Location

: 60 dB L_{dn} Roadway Noise Contours With Project

PLATE NO-C

MEASURED HOURLY & TRAIN EVENT NOISE LEVELS

(May 17-18, 1995)

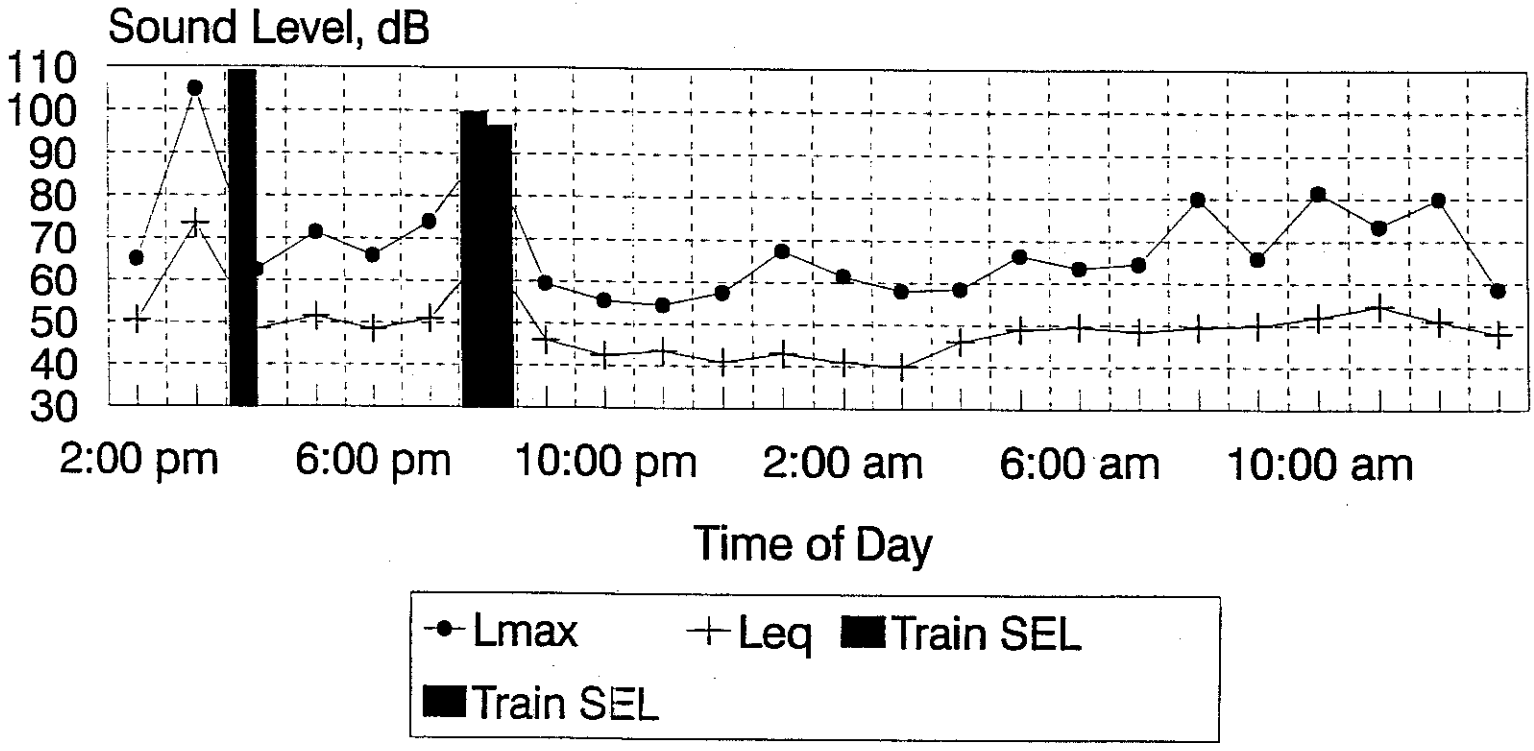
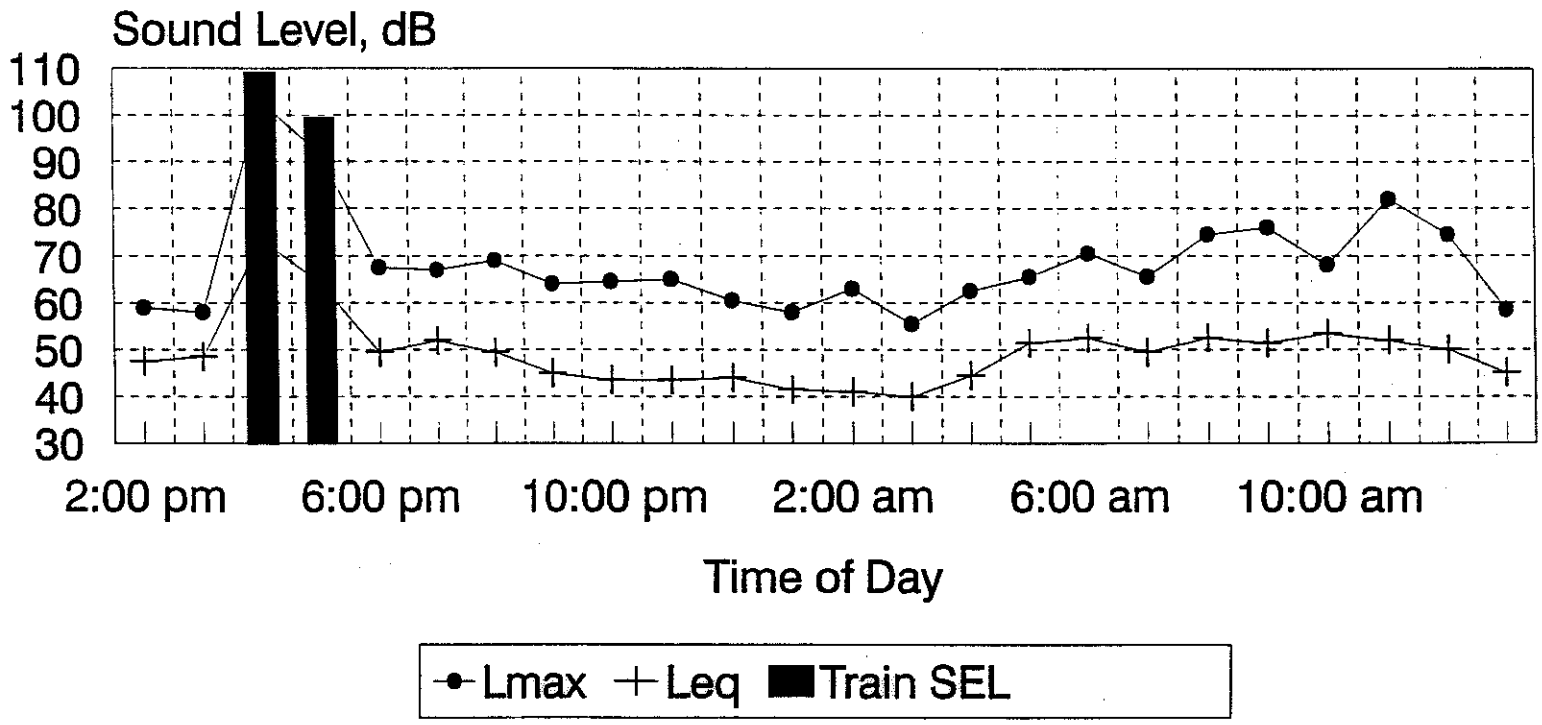


PLATE NO-D

MEASURED HOURLY & TRAIN EVENT NOISE LEVELS

(May 18-19, 1995)



18-19, 1995).

Noise level measurements were conducted along the CCTRR at a distance of approximately 50 feet from the railroad tracks. The noise level measurements indicated that between two and three operations occur per day along the tracks. According to CCTR staff, up to four train operations may occur during a 24-hour period, resulting in 60 dB and 65 dB L_{dn} railroad noise contours at projected distances of 78 feet and 36 feet respectively from the tracks. Table NO-9 shows the results of the actual train noise measurements/levels based on the two and three train operations per day that were observed by BBA and a projected existing train noise level based on the maximum of four train operations that may occur along this track, per CCTRR staff..

Existing Aircraft Noise Levels.

During the field review by BBA staff in the summer of 1995, no aircraft operations were noted as flying directly over the project site.

The current document for determining potential future noise impacts associated with the Mather Airport is entitled: Mather Airport Comprehensive Land Use Plan Update, May 1996, Draft. Based upon this document, the project site is located outside of the 60 dB CNEL contour (See Plate NO-E).

Future Noise Levels:

For noise impact analysis the proposed land uses under the Preferred Plan and Alternative Plans are as follows:

- Single Family Residential
- Multi Family Residential
- Business/Professional
- Commercial
- Open Space
- Schools
- Parks

The primary noise sensitive receptor use of concern proposed by the Preferred Plan and Plan Alternatives are the Single Family and Multi-Family Residential uses. The Preferred Plan includes approximately 6,339 residential dwelling units and other land uses as noted in the Project Description. The -10% and -15% Alternative Plan includes approximately 5,759 and 5,384 residential dwelling units respectively. The Modified Core Plan Alternative can be applied to either the Preferred Plan or the -10% and -15% Alternative Plan for a range of residential dwelling units of either 6,339, 5,759, or 5,384.

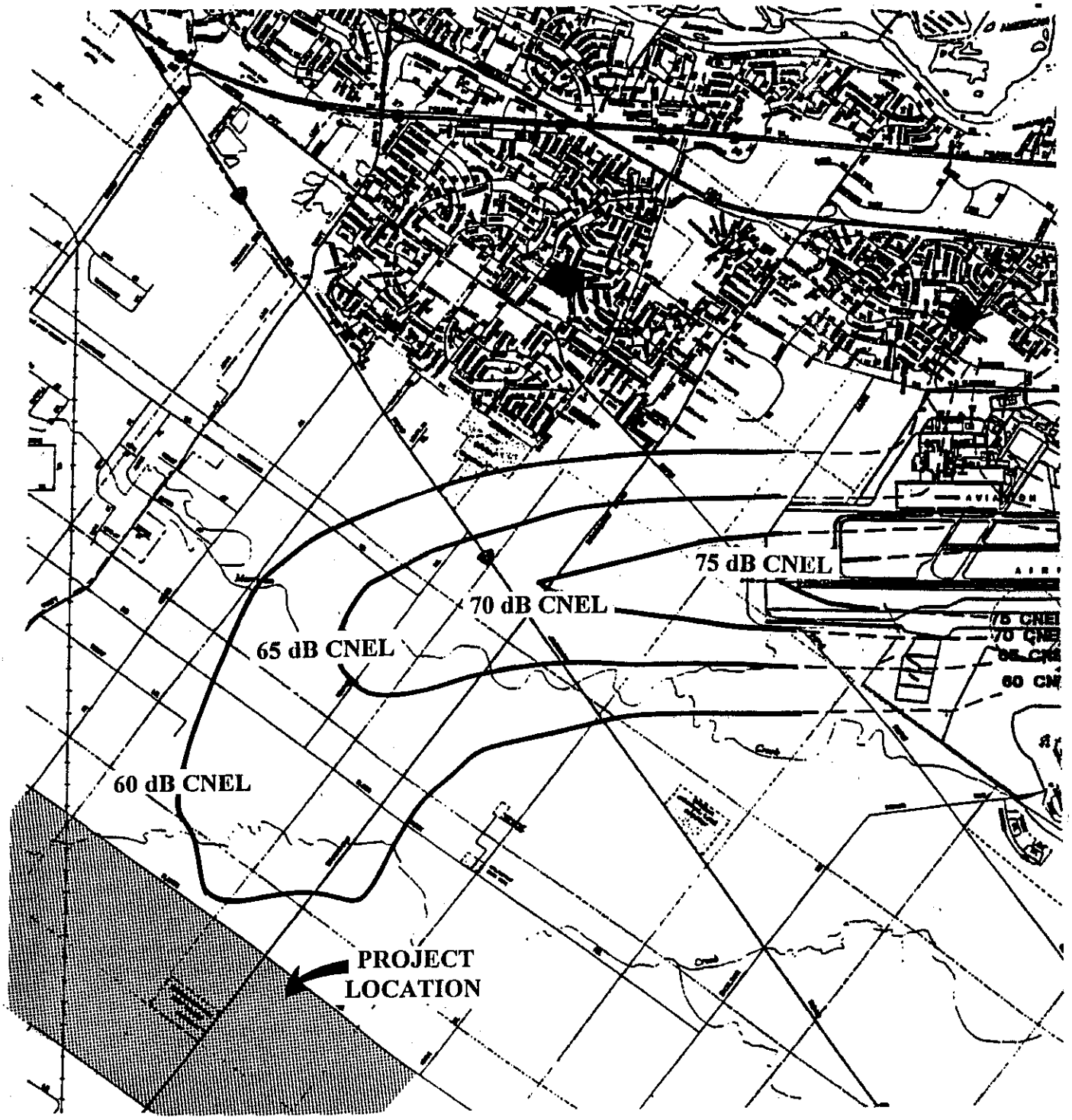
TABLE NO-9
1995 RAILROAD OPERATION NOISE LEVELS
at 50 Feet

Time of Train Operation	Measured SEL, dB at 50 feet	Distance to L_{dn} Contours	
		60 dB	65 dB
May 18-19, 1995 (2 Train Operations per day)			
4:03 p.m. 5:18 p.m.	109.0 99.3	**47 feet**	**22 feet**
May 17-18, 1995 (3 Train Operations per day)			
3:54 p.m. 8:10 p.m. 8:47 p.m.	109.0 99.5 96.5	**52 feet**	**25 feet**
BBA Predicted Existing (4 Train Operations per day)			
Per CCTRR staff up to 4 train operations may occur in 24hr period.	N/A	**78 feet**	**36 feet**

Source: Brown Buntin & Associates. *Environmental Noise Analysis, North Vineyard Station Specific Plan,* December 4, 1996.

PLATE NO-E

MATHER FIELD NOISE CONTOURS



Secondary noise sensitive receptor uses of concern are the School and Park uses. The Preferred Plan and the other Plan Alternatives all identify 21.7 acres for school use. The Preferred Plan designates 105 acres for park use. While the -10% and -15% Plan Alternatives designate 96.2 and 92.7 acres respectively for park use (see Table PD-1).

Future Traffic Noise Levels.

The BBA noise analysis provides a comparison of the future noise impacts based on cumulative build out conditions for the Plan Area both with and without development of the Preferred Plan. The FHWA model was used to determine future traffic noise levels for both scenarios. Table NO-10 shows the results of the FHWA traffic noise analysis.

The locations of the 60 dB L_{dn} traffic noise contours for cumulative plus project conditions are shown on Plate NO-B. Noise contours shown on Plate NO-B are only for roadways which affect the Plan Area. Based upon this analysis, residential areas located along major roadways as shown on the Preferred Plan and Plan Alternatives will be exposed to significant traffic noise levels in excess of 60 dB L_{dn} under cumulative build out conditions.

Existing residences located along major roadways in the vicinity of the Plan Area will be exposed to significant traffic noise levels under cumulative build out conditions either with or without the project. There appears to be very little difference in the projected noise environment between build out with an without the project. As shown on Table NO-10, future traffic noise levels due to the development of the Preferred Plan are expected to increase future cumulative noise levels would not be perceptible to humans and between 0 and 1.0 dB L_{dn}. Based on the subjective noise impact data noted on Table NO-6 and NO-7, the project's contribution to future cumulative noise levels would not be perceptible to humans and is not considered significant. Stated another way, the proposed project will not result in a significant increase in traffic noise impacts to the existing residences under cumulative conditions.

Future Railroad Noise Levels.

It is difficult to estimate the future train operation noise levels along the CCTRR given that the future level of activity is unknown at this time. However, CCTRR staff indicated that in the past five years traffic has doubled along the railroad line and that historically up to 8 train operations have occurred during a 24-hour period.

For the purposes of this environmental noise analysis, BBA assumed that 8 train operations will occur along the track under cumulative conditions. Table NO-11 shows the predicted distances to the future railroad operation noise contours. Based upon this analysis, residential areas located along the railroad tracks as shown on the Preferred Plan and Plan Alternatives will be exposed to significant railroad noise levels in excess of 60 dB L_{dn} under

TABLE NO-10
CUMULATIVE TRAFFIC NOISE LEVELS
Without & With Preferred Specific Plan

Roadway	Without Specific Plan	With Specific Plan	Distance to L_{dn} Contour (feet)			
			Without Specific Plan		With Specific Plan	
	L_{dn}, dB at 75'		60 dB	65 dB	60 dB	65 dB
Florin Road						
West of Watt Ave.	70.2	71.0	361	168	405	188
Watt Ave. to Bradshaw Rd.	70.1	70.7	354	164	390	181
Bradshaw Rd. to Excelsior Rd.	66.1	67.1	192	89	222	103
Gerber Road						
West of Elk Grove-Florin Rd.	68.8	69.3	290	134	315	146
Elk Grove-Florin to Bradshaw Rd.	68.3	69.1	268	124	304	141
Bradshaw Rd. to Vineyard Rd.	64.1	64.6	140	65	152	71
Bradshaw Road						
Calvine Rd. to Gerber Rd.	70.4	70.7	369	171	387	179
Gerber Rd. to Florin Rd.	70.7	71.0	388	180	408	189
Florin Rd. to Elder Creek Rd.	71.5	72.0	436	203	475	220
Elder Creek Rd. to S.R. 16	71.4	71.6	434	202	447	208
Vineyard Road						
Calvine Rd. to Gerber Rd.	63.5	64.3	129	60	146	68
Gerber Rd. to Florin Rd.	65.5	65.8	174	81	183	85
Elk Grove-Florin Road						
Calvine Rd. to Gerber Rd.	70.2	71.0	357	166	408	190
S. Watt Avenue						
Gerber Rd. to Florin Rd.	71.4	71.6	429	199	444	206
Florin Rd. to Elder Creek Rd.	71.3	71.4	426	198	430	199
Elder Creek Rd. to S.R. 16	71.1	71.2	412	191	421	195
Calvine Road						
West of Elk Grove-Florin Rd.	71.0	71.0	403	187	408	189
Elk Grove-Florin to Bradshaw Rd.	70.1	70.2	353	164	357	166
Bradshaw Rd. to Vineyard Rd.	66.0	66.1	188	87	192	89
Waterman Road						
Calvine Rd. to Gerber Rd.	68.9	68.9	293	136	295	137
Gerber Rd. to Florin Rd.	69.1	69.4	303	141	317	147

TABLE NO-11
FUTURE vs EXISTING RAILROAD NOISE LEVELS

Time of Train Operation	Measured SEL, dB at 50 feet	Distance to L_{dn} Contours	
		60 dB	65 dB
BBA Predicted Existing (4 Train Operations per day)			
Per CCTRR staff up to 4 train operations may occur in 24hr period.	N/A	**78 feet**	**36 feet**
BBA Predicted Future (8 Train Operations per day)			
Per CCTRR staff train operations have doubled in last 5 years and up to 8 train operations in 24hr period occurred historically .	N/A	**124 feet**	**57 feet**

Source: Brown Buntin & Associates. *Environmental Noise Analysis, North Vineyard Station Specific Plan*, December 4, 1996.

cumulative build out conditions.

Future Mather Field Aircraft Noise Levels.

As indicated on Plate NO-E, the Plan Area is not expected to be exposed to aircraft noise level in excess of the 60 dB CNEL criteria. Aircraft noise impacts are not considered significant for the Plan Area under existing and future conditions.

Future On-Site Stationary Noise Sources.

The Preferred Plan, the -10% and -15% Plan Alternative and the Modified Core Alternative all propose new commercial, business/professional, recreational and school uses. Where these uses are located within proximity to residential uses, there exists a potential for noise-related land use conflicts. It is not possible at this time to determine the noise impacts at the Specific Plan stage. Potential noise sources and impacts will need to be identified and determined when specific uses are proposed within the areas designated for commercial, business/professional, recreational and school uses.

BBA Recommendations & Summary:

Residential uses within the Plan Area could be adversely affected by noise generated by traffic, railroad operations and new commercial, business/professional, and school uses. The extent to which existing or future residential developments would be affected by these noise sources would depend on the proximity of the developments to the various noise sources. Residential developments close to major roadways are expected to be significantly impacted by traffic noise. Some residential uses located near the railroad track could also be adversely impacted by train operation noise. Future siting of commercial, business/professional, and school uses in proximity to residential uses may also cause noise-related land use compatibility impacts.

The following section provides recommendations for noise impact mitigation. These recommendations may be employed to reduce traffic, railroad, and stationary source noise impact to noise sensitive receptors within the Plan Area. As a general precautionary measure, where noise sensitive land uses are proposed within the 60 dB L_{dn} noise contour for future traffic or railroad operations, an acoustical analysis should be required so that approximate noise mitigation measures specific to a particular situation may be incorporated into the project design. The objectives of the mitigation measures are to ensure compliance with the Sacramento County noise standards and to protect noise sensitive developments from excessive noise levels.

Use of Setbacks.

Noise exposure may be reduced by increasing the distance between the noise source and receiving use. Setback areas can take the form of open space, frontage roads, storage yards, etc. The available noise attenuation from this technique is limited by the characteristics of the noise source, but is generally about 4 dB per doubling of distance from a line or road noise source, and 6 dB for stationary sources. To mitigate traffic noise impacts to less than 65 dB $L_{dn,}$ setbacks from the road centerline consistent with Table NO-10 would be required along major roadway and residential use interfaces. To mitigate railroad noise impacts to less than or 65 dB $L_{dn,}$ setbacks from the railroad track centerline consistent with Table NO-11 would be required along major the railroad track and residential use interfaces.

Use of Barriers.

Shielding from noise can be achieved by placing walls, berms or other structures, such as buildings, between the noise source and the receiver. The effectiveness of a barrier depends upon blocking line-of-sight between the source and receiver, and is improved with increasing the distance the sound must travel to pass over the barrier as compared to a straight line from source to receiver. Barrier effectiveness depends upon the relative heights of the source, barrier and receiver. In general, barriers are most effective when placed close to either the receiver or the source. An intermediate barrier location yields a smaller path length difference for a given increase in barrier height than does a location closer to either source or receiver.

For maximum effectiveness, barriers must be continuous and relatively airtight along their length and height. To ensure that sound transmission through the barrier is insignificant, barrier mass should be about 4 lbs./square foot, although a lesser mass may be acceptable if the barrier material provides sufficient transmission loss in the frequency range of concern. Satisfaction of the above criteria requires substantial and well-fitted barrier materials, placed to intercept line of sight to all significant noise sources. Earth, in the form of berms or the face of a depressed area, is also an effective barrier material.

Noise barriers could be utilized to effectively mitigate future traffic or railroad noise levels. Although, precise barrier heights cannot be determined until details of grading plans and pad locations are completed, approximate barrier heights can be determined using typical setbacks and roadway cross-sections provided by the project applicant.

Traffic Noise: BBA used the FHWA noise barrier performance analysis methodology to determine the insertion loss and resulting noise level provided by different barrier heights at the first row of lots which face Florin Road, Gerber Road, Bradshaw Road, Vineyard Road and Waterman Road. Table NO-12 shows the effectiveness of various barrier heights in mitigating traffic noise levels at residential outdoor activity areas to a range up to 65 dB L_{dn}

Table NO-12
Noise Attenuation With Various Sound Wall Heights

	Wall Height (ft.)	Noise Level (L_{dn}, dB)
Florin Road		
Watt to Bradshaw	6	64.5
	8	62.3
	10	60.0
Bradshaw to Vineyard	6	60.8
	7	59.7
Gerber Road		
Elk Grove-Florin to Bradshaw	6	62.9
	8	60.6
	9	59.6
Bradshaw to Vineyard	6	58.3
Bradshaw Road		
Gerber to Florin	6	64.8
	8	62.6
	11	59.6
Vineyard Road		
Gerber to Florin	6	59.5
Waterman Road		
Gerber to Florin	6	63.1
	8	60.9
	9	59.8
Railroad	6	61.9
	8	60.2
	8.5	60.0

Assumptions: 1) Building pads are at the same grade as roadways.
2) Outdoor activity areas are 75 feet from roadway centerlines.
3) Minimum height to break line-of-site to automobiles tire noise is 6 feet.

Notes: Barriers must be continuous and relatively airtight along their length and height. To ensure that sound transmission through the barrier is insignificant, barrier mass should be about 4 pounds per square foot, although a lesser mass may be acceptable if the barrier material provides sufficient transmission loss in the frequency range of concern. Satisfaction of the above criteria requires substantial and well-fitted barrier materials, placed to intercept line of sight to all significant noise sources. Earth, in the form of berms or the face of a depressed area, is also an effective barrier material.

which is the maximum noise level considered acceptable for residential use. This assumes a distance of 75 feet from the roadway centerline to the outdoor activity area.

The approximate barrier heights shown in Table NO-12 are assumed to be relative to building pad elevations. A detailed analysis of barrier heights should be conducted when grading plans and building pad elevations and locations have been provided.

Railroad Noise: BBA used a barrier profile analysis to determine appropriate barrier heights to reduce railroad noise levels to less than 60 dB L_{dn}. This analysis assumes a distance of 50 feet from the railroad track centerline to the outdoor activity area. This analysis assumes that the building pads are at the same grade as the railroad bed. Based upon the analysis, a barrier 8.5 feet in height would be required to reduce railroad noise levels to 60 dB Ldn, while a barrier of 8 feet and 6 feet would result in 60.2 dB L_{dn} and 61.9 dB L_{dn} , respectively.

Site Design.

Buildings can be placed on a project site to shield other structures housing more noise sensitive uses, or no sensitive areas, to lower noise levels, and to prevent an increase in noise level caused by reflections. The use of one building to shield another can significantly reduce overall project noise control costs, particularly if the shielding structure is insensitive to noise. As an example, carports or garages can be used to form or complement a barrier shielding adjacent dwellings or an outdoor activity area. Similarly, one residential unit can be placed to shield another so that noise reduction measures are needed for only the building closest to the noise source. Placement of outdoor activity areas within the shielded portion of a building complex, such as a central courtyard, can be an effective method of providing a quiet retreat in an otherwise noisy environment. Patios or balconies should be placed on the side of a building opposite the noise source, and "wing walls" can be added to buildings or patios to help shield noise sensitive areas.

Subsequent Acoustical Analyses.

Traffic Noise: A detailed acoustical analysis will need to conducted for residences located within the 60 dB L_{dn} roadway noise contours when grading plans and building pad elevations and locations have been provided. In addition, a detailed analysis of interior noise level at second floor facades of residences located inside of the 65 dB L_{dn} noise contours and not shielded by barriers should also be conducted. Interior noise level analyses cannot be conducted until floor plans, building elevations and facade construction details have been completed.

Railroad Noise: A detailed acoustical analysis will need to conducted for residences located within the 60 dB L_{dn} railroad noise contours when grading plans and building pad elevations and locations have been provided.

Stationary Noise Source: Where commercial, business/professional, and school uses are located within proximity to residential uses, there exists a potential for noise-related land use conflicts. It is not possible to determine the noise impacts at the Specific Plan stage. Potential noise sources and impacts will need to be identified and determined when specific uses are proposed within areas designated for commercial and business/professional use.

Proposed Noise Policies.

The proposed NVSSP Policy Plan (Appendix A) provides some policies relevant to noise impacts and land use compatibility issues as follows:

Urban Residential Policies: Development Criteria

1. Rear and side yards shall face streets designated as Arterial and Thoroughfare streets on the Circulation Plan. Subdivisions shall be separated from Arterial and Thoroughfare streets by landscaped areas, sound walls, fences, and/or berms that conform to the Design Guidelines included in this Plan.

Commercial Policies

NVS-22. Buildings should be set back a sufficient distance from adjacent single family residential uses to minimize undesirable visual and noise impacts.

Park Policies

NVS-30. Parks shall be designed, and facilities oriented, to minimize noise and visual impacts on adjoining residential lots.

These three noise policies are expanded upon in the Specific Plan document development guidelines for commercial and recreational uses, and street improvements . A 6-foot wide minimum landscape setback with solid wall is required where commercial projects directly abut residential areas. The Plan document references a commercial and residential interface concept design (Figure 5.6.2.A) that defines a solid wall as a "6' Masonry Wall".

A 25-foot wide landscape corridor setback with sound wall is required at all residential uses along proposed thoroughfare and arterial streets in the plan area. A 15-foot wide landscape corridor setback with fence is required at all residential uses along proposed collector streets in the plan area.

According to the Specific Plan document, walls and fences installed along thoroughfare, arterial, and collector streets and the railroad corridor are to be as unobtrusive as possible. To this end, the Specific Plan requires walls and fences to adhere to the following stated guidelines:

1. All walls and fences should be screened with trees and shrubs, in accordance with the planting guidelines set forth in Section 7.8.1.

2. Fences and walls should be constructed of natural weather and rot resistant materials. Where wood is used, appropriate treatment should be applied to enhance longevity. Construction materials and colors should be consistent along a given street.

3. Walls and fences (built on existing grade or on berms) should not extend higher than 6 feet above finished grade. Where berms are used, particular attention should be given to ensuring that storm drainage is not impaired.

4. Only masonry walls should be constructed along the Railroad Corridor and the right-of-way of Thoroughfare and Arterial streets. However, where the Railroad Corridor abuts a Storm Water Detention basin chain-link fencing may be used instead.

5. Breaks may occur in sound walls at Residential streets and at cul-de-sac ends as shown in (Figure 7.8.2 in the Specific Plan document).

6. Sound walls along major streets and the railroad right-of-way should adhere to the following standards (Table 7.8.2 of Specific Plan document) to ensure compliance with the Sacramento County General Plan noise policies and to protect noise sensitive developments from excessive noise levels.

The County General Plan specifies that residential land uses are compatible with exterior noise levels of up to 60 dB L_{dn}. The 60 dB L_{dn} noise level is considered an acceptable noise environment for residential outdoor activities. Where the exterior noise level from transportation sources is between 60 and 75 dB L_{dn}, the noise element specifies that residential uses should be permitted only after careful study and inclusion of noise reduction, or attenuation measures as needed. In these instances, an exterior noise level of 65 dB L_{dn} may be allowed in outdoor activity areas provided that "all practical" exterior noise reduction measures are applied.

For example, an 11-foot wall to achieve a noise level below 60 dB Ldn is generally not considered "practical" along residential areas surface streets. In such a case, use of a lower wall, while not achieving the ideal level of below 60 dB Ldn, would be justified from the standpoint of community design.

As noted in the BBA noise analysis, use of increased setback for noise mitigation is an option. This would require changes to the Preferred Plan and the Plan Alternatives maps/exhibits and related development guidelines. The residential lots lost to increased

setbacks could be regained increasing density in certain areas of the Plan. The use of setbacks for noise attenuation may be a desirable option in some areas. Benefits to using large setbacks for noise mitigation would include: a newly planned community which minimizes sound wall canyons along major roadways and/or railroad tracks; more open space acreage for active and passive recreational use and viewing pleasure and more open space areas for biological resource preservation and mitigation.

Impacts to existing sensitive noise receptors along those roadway segments experiencing significant noise increases are considered potentially significant and unavoidable. Although future roadway projects would be subject to CEQA review and mitigation at the time construction is proposed, impacts to existing residents may not be fully mitigable. Noise barriers and other noise attenuating measures may not be feasible in situations such as front-on lots or where proposed roadway modifications result in minimal setbacks.

Noise impacts to future development along all Plan area roadways are potentially significant under all project scenarios but may be mitigated through implementation of noise attenuation measures at the time of development. Future projects will be subject to CEQA review and compliance with noise standards. Therefore, traffic related noise impacts to future development could be mitigated to less than significant levels.

Mitigation Measures:

The following mitigation measures shall be added as a development guideline in the Specific Plan ensure that noise impacts for the Plan Area are minimized and addressed at the earliest stages of proposed development:

NS-1 *Future noise sensitive residential land uses proposed for development within the future 60 dB L_{dn} traffic or railroad operation noise contours shall be required to prepare an acoustical analysis and to implement identified noise attenuation measures necessary to ensure compliance with the noise standards of the County General Plan Noise Element.*

Hydrology and Flooding

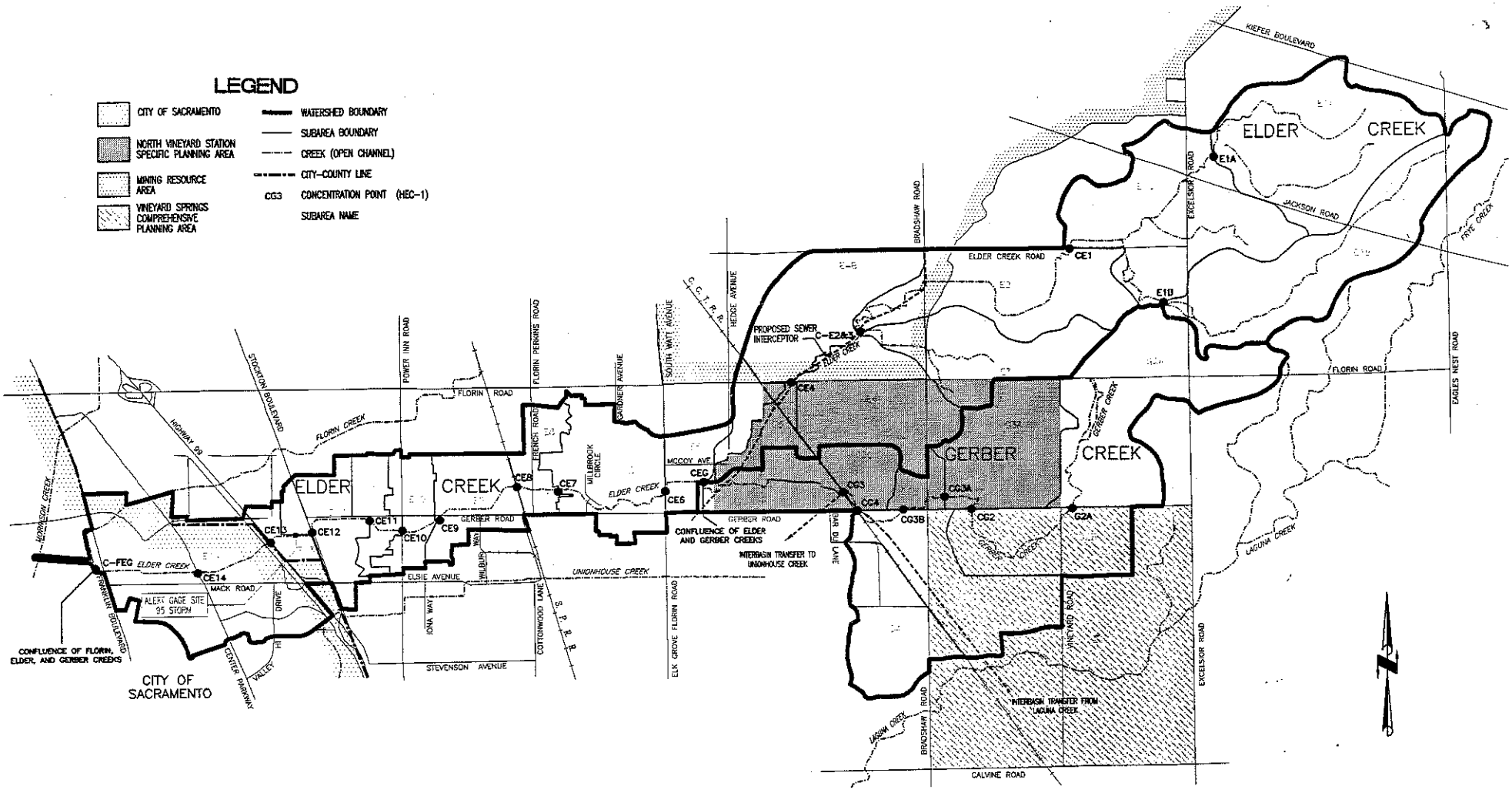
Setting.

The North Vineyard Station Specific Plan (NVSSP) area lies within the Elder and Gerber Creek watersheds, as shown on Plate HY-A. Elder Creek crosses the western portion of the site while Gerber Creek crosses the southern portion of the site; these two creeks merge near the southwest corner of the Plan area and then flow off-site to the west, ultimately joining Morrison Creek which empties into the Beach-Stone Lakes area and the Sacramento-San Joaquin Delta.

Within the NVSSP area, both Elder and Gerber Creeks are relatively shallow (1 to 4 feet deep) and narrow (10 to 30 feet wide) and appear to have been realigned along property lines at several locations. Both creeks are relatively low volume and would be seasonal in flow duration if not for irrigation and urban water runoff. Supplemental water has extended the flows of these creeks (particularly Elder Creek, which is intermittently wet throughout the year) into the dry season. Within each channel, isolated pools persist throughout the year. Significant rainfall results in widespread, but generally shallow, flooding. Floodplain depths range from one-half foot to one and one-half feet. This local flooding is attributed to a number of factors, including inadequate channel capacity, inadequate capacity of roadway culverts, and the presence of numerous private roadway/driveway crossings of the channels with inadequate culvert capacities. The extent of the existing 100-year floodplain in the project vicinity is shown on Plate HY-B.

Sacramento County requires new development and new public projects to follow specific guidelines in the maintenance and construction of drainage facilities. These standards are designed to protect new structures from the 100-year flood event, to protect new roads from the 10-year flood event, and to mitigate the stormwater quality impacts of urban development. Development within the NVSSP area will be required to comply with these drainage standards.

The Sacramento County Water Resources Division (WRD) intends to prepare Drainage Master Plans (DMPs) for watersheds in newly developing areas of the County. Preparation of a DMP provides for a comprehensive and coordinated approach towards identifying the necessary flood control and water quality facilities needed to serve planned development throughout a watershed, while avoiding adverse flooding and water quality impacts on downstream areas. The WRD has completed preliminary work (scoping studies and hydrologic/hydraulic analyses) on preparation of a DMP for the Elder/Gerber Creek watershed, including identification of a preferred alternative for the DMP. One of WRD's goals for the Elder/Gerber Creek DMP is to safeguard downstream areas by ensuring that when development within the watershed is complete, the following



FLORIN, ELDER AND GERBER CREEKS SCOPING STUDY

COUNTY OF SACRAMENTO
PUBLIC WORKS AGENCY
WATER RESOURCES DIVISION

0 4000
SCALE IN FEET

PLATE HY-A

Subshed Boundaries

elvis/7000/7536/exhibits/fig1.dwg 9/24/96

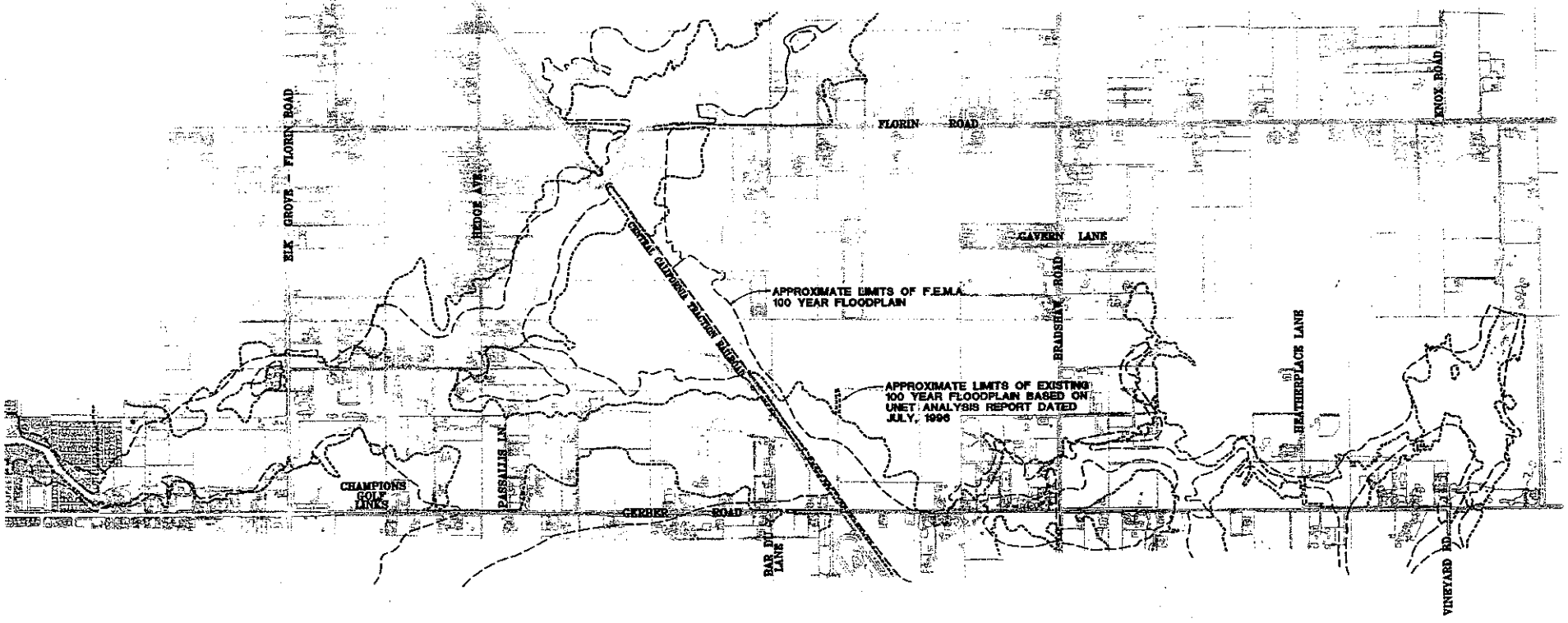
PLATE HY-B

NORTH VINEYARD STATION SPECIFIC PLAN

EXISTING CONDITION 100-YEAR FLOODPLAIN

0 700 1400 2800

SCALE: 1" = 1400'



MACKAY & SOMPS

CIVIL ENGINEERING LAND PLANNING AND SURVEYING

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DATE: FEBRUARY 1997

DRAWN BY: KT

JOB NO.: 7639-0

Rpt-1400scale.dwg

downstream hydrologic objectives are satisfied:

1. The 100-year peak discharge for ultimate land use conditions with the preferred flood control alternative is less than the existing condition peak flow on Elder Creek at the City/County boundary.

2. The maximum water surface in Lower Elder Creek remains below minimum bank elevation for the 100-year event with ultimate land use conditions and the preferred flood control alternative.

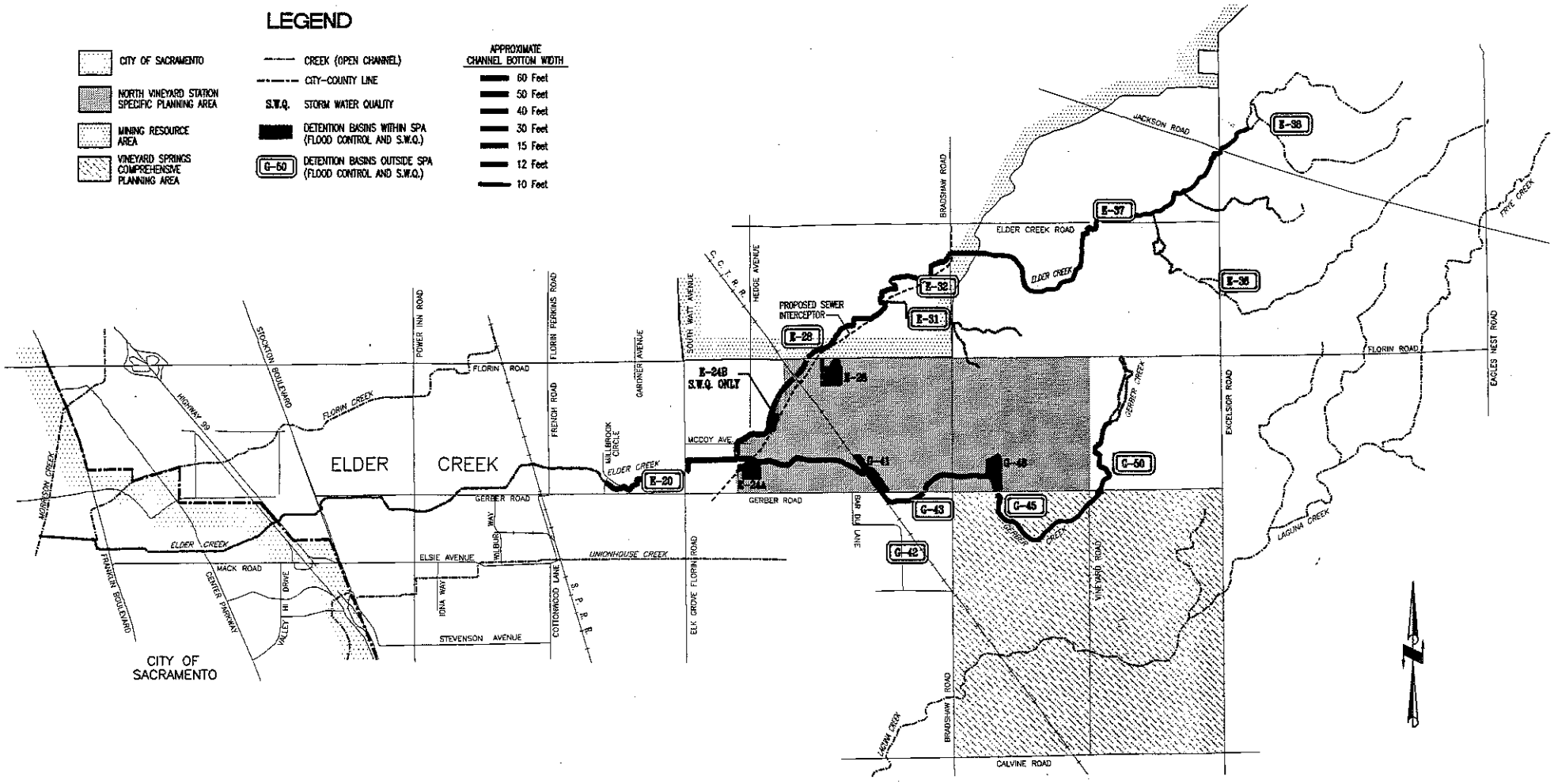
3. The adopted flood control alternative achieves the above objectives in a flexible and reliable manner.

WRD's preferred alternative for the Elder/Gerber Creek watershed is shown on Plate HY-C. This preferred alternative includes general guidelines for a combination of channel modification improvements and flood control and stormwater quality detention basins which could achieve the DMP objectives. While the WRD has identified a preferred alternative for a DMP for the overall Elder/Gerber Creek watershed, the County has not yet formally adopted such a DMP.

Because a DMP has not yet been adopted for the overall Elder/Gerber Creek watershed, the project proponents have developed a DMP for the NVSSP area, which specifically addresses the flood control needs of the Specific Plan area to enable development of the project to proceed. After consideration of several alternative methods of achieving flood control for the NVSSP area, the project proponents selected their preferred alternative which is shown on Plates HY-D & HY-E. This preferred alternative identifies the flood control and stormwater quality management facilities (both on- and off-site) which will be needed to serve development of the NVSSP area without adversely impacting downstream areas, and is consistent with the WRD's preferred alternative for the overall Elder/Gerber Creek watershed.

A consultant for the County WRD has evaluated the design of the proposed NVSSP DMP drainage facilities using the UNET hydrologic computer model, and verified that the proposed facilities, including construction of off-site Detention Basin E20, will satisfy the County's hydrologic objectives for the watershed. That analysis is included in a report entitled Elder and Gerber Creeks Technical Appendix: UNET Analysis (January, 1997), prepared by Douglas Hamilton, P.E., for the County of Sacramento.

A detailed description of the project's proposed DMP for the NVSSP area is included in the following sections. Most of this information has been directly excerpted from the Drainage Study for the North Vineyard Station Specific Plan (prepared by MacKay and



FLORIN, ELDER AND GERBER CREEKS SCOPING STUDY

COUNTY OF SACRAMENTO
PUBLIC WORKS AGENCY
WATER RESOURCES DIVISION

0 4000
SCALE IN FEET

PLATE HY-C

Conceptual Detention Locations

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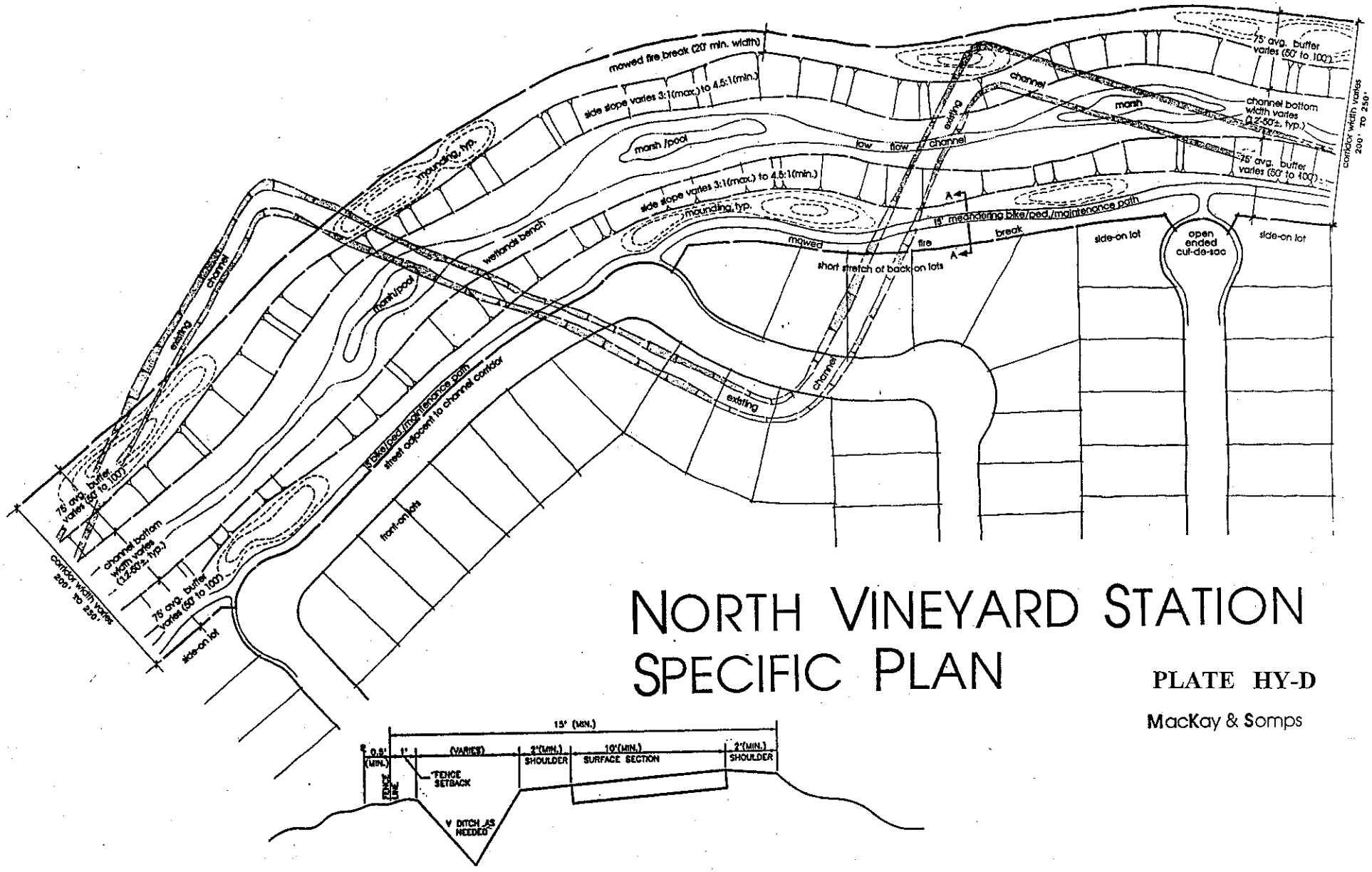
ELDER/GERBER CREEK CORRIDOR
CONCEPTUAL NATURALIZED CHANNEL



MINIMUM MAINTENANCE PATH
CROSS SECTION

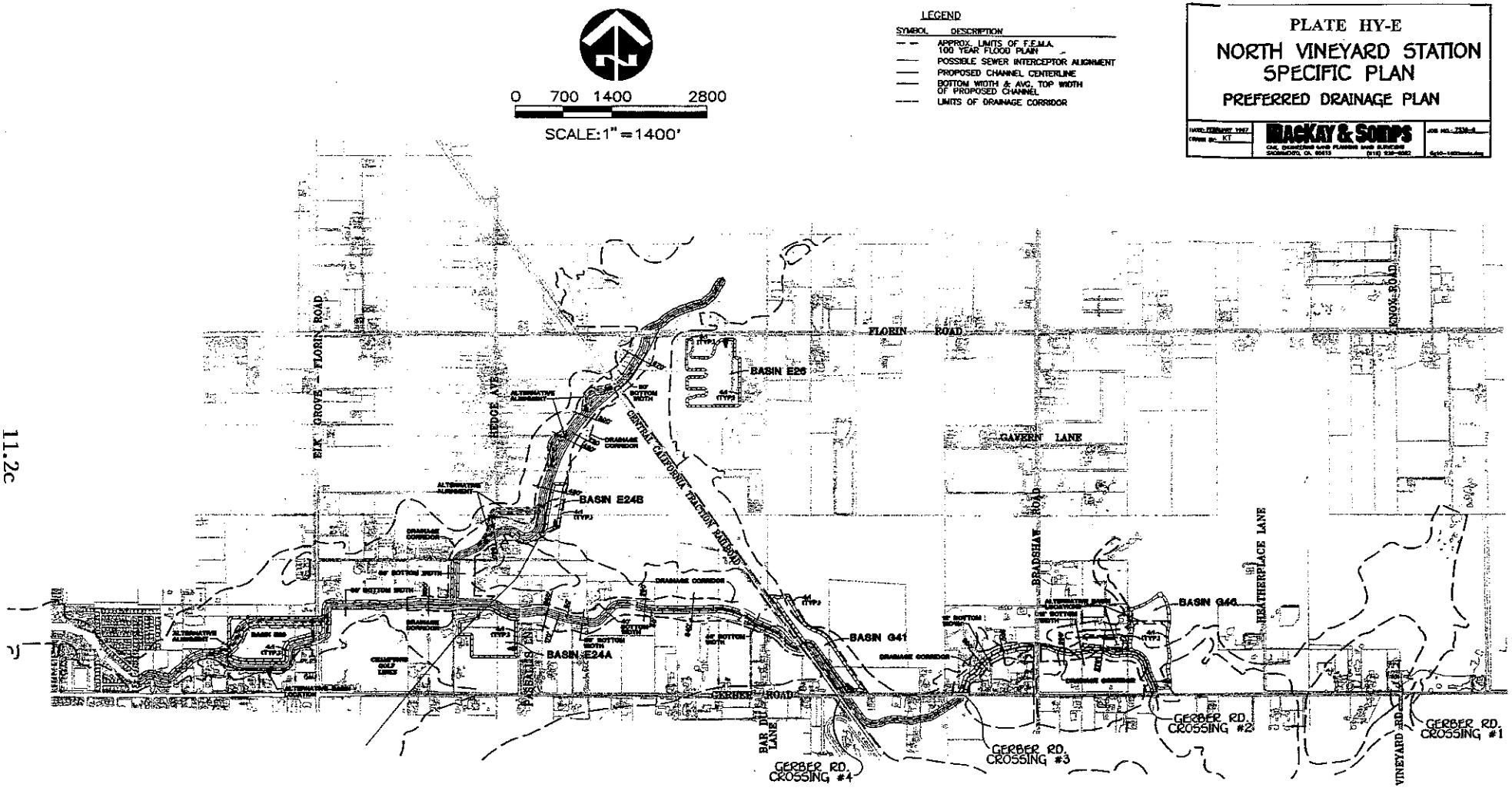
NORTH VINEYARD STATION SPECIFIC PLAN

PLATE HY-D

MacKay & Somps

11.2b

Proposed
North Vineyard Station Specific Plan
Drainage Master Plan (NVSSP DMP)



Somps Engineering, February 1997).

Purpose and Scope of the Proposed DMP for the NVSSP Area.

The purpose of the Drainage Study for the North Vineyard Station Specific Plan is to develop a comprehensive Drainage Master Plan (DMP) for the NVSSP area. The Sacramento County Water Resources Division (WRD) previously prepared a preliminary scoping study report based on HEC-1 and HEC-2 models. Subsequent to the scoping study, WRD has prepared a Draft Watershed Master Plan based on a UNET model. Both studies identified existing flooding conditions and developed alternative strategies and guidelines for handling ultimate condition flows. The UNET report provides a more detailed unsteady flow analysis to be used to guide future development in the watershed. The NVSSP area DMP encompasses the guidelines and requirements set forth by WRD in their scoping studies and Draft Watershed Master Drainage Plan for the two creeks. It is therefore comprehensive in nature, yet specific to the drainage corridors affected by the Specific Plan, both on-site and off-site. Adhering to the framework established in WRD's Draft Watershed Master Plan, the scope of this report covers the DMP for the NVSSP area only.

This DMP for the NVSSP area does the following:

1. Identifies existing drainage facilities and predicted flooding patterns.

2. Analyzes alternatives and recommends preferred flood control and conveyance facilities to serve the drainage needs of the lands within the Specific Plan area and to mitigate for potential impacts due to development.

3. Recommends stormwater quality management facilities consistent with the County's New Development Management Program.

Objectives of the Proposed DMP for the NVSSP Area.

The main objectives of this DMP are to:

1. Provide 10-year gravity drainage service to developing areas within the NVSSP area. Specifically, it will be necessary to provide a low enough 10-year water surface elevation in the creeks to allow storm drain pipes from the surrounding developed areas to meet the County's 10-year hydraulic grade line standards for pipe systems.

2. Provide 100-year flood protection to the NVSSP area consistent with Sacramento County's standards.

3. Provide a plan which meets the hydrologic and hydraulic criteria established by the County in their scoping study for the Elder/Gerber Creek watershed. The main criteria are:

   (a) No increase in the peak 100-year flow is allowed at the City/County boundary; and

   (b) No significant 100-year flows are allowed out-of-bank in the existing improved channel downstream of the NVSSP area.

4. Provide stormwater quality management facilities in accordance with the County's New Development Management Program.

Background for the Proposed DMP for the NVSSP Area.

The NVSSP area lies within the drainage sheds of Elder and Gerber Creeks (see Plate HY-A). Elder Creek enters the Specific Plan area from the north, crossing under Florin Road approximately 1,000 feet east of the Central California Traction Railroad (CCTRR) tracks. At this point, the creek carries runoff from just over 4,400 acres. The creek travels generally in a southwest direction along the west boundary of the Specific Plan area for approximately 5,200 feet where it leaves the Plan area after being joined by Gerber Creek. At its confluence with Gerber Creek, the tributary shed for Elder Creek is approximately 5,070 acres.

Gerber Creek first enters the Specific Plan area under Gerber Road approximately 1,700 feet east of Bradshaw Road with a tributary area of approximately 1,340 acres. The creek generally travels west through the site, temporarily leaving the Plan area approximately 1,100 feet west of Bradshaw Road before re-entering the Plan area just east of the CCTRR. The creek exits the Plan area after it joins Elder Creek at the western boundary of the Specific Plan area.

Within the Plan area, both Elder and Gerber Creeks are relatively shallow (1 foot to 4 feet deep) and narrow (10 feet to 30 feet wide) and appear to have been realigned along property lines at several locations.

Currently, Gerber Creek experiences flow transfers, both into and out of its drainage shed during high flow events. High flows from Laguna Creek back up at the CCTR and excess flows travel north along the railroad into the Gerber Creek shed.

Downstream of the CCTR, excess flows spill out of the Gerber Creek shed by overtopping Gerber Road to the south into the Unionhouse Creek shed. The general locations of these interbasin transfer areas are shown on Plate HY-A.

Sacramento County is currently in the reconnaissance stage of identifying a project to eliminate this interbasin transfer condition. At the direction of Sacramento County WRD, it has been assumed for this study that this project will occur as an independent project separate from the Specific Plan.

Hydrologic and Hydraulic Analysis for the Proposed DMP for the NVSSP Area.

Using the water surface elevations generated by UNET, the existing 100-year floodplain was estimated. As Figure 4 shows, the calculated floodplain ranges from approximately 300 to 1,600 feet in width. The regulatory 100-year floodplain developed by FEMA is also shown on Plate HY-B. Differences between the 100-year floodplain generated by results of the UNET model and the FEMA 100-year floodplain are due to the different levels of study, as well as the different methods of hydrologic analysis. The Florin Road bridge was found to be inadequate to pass the 100-year flow and the road will be overtopped during a 100-year event.

Based on the UNET model results, profiles of the 100-year water surface elevations, the approximate bank elevations, and the ultimate channel flowline of Elder and Gerber Creeks are shown in Plate HY-F through HY-I. Plates HY-F and HY-H show profiles of the existing condition and the ultimate condition. Figures 2B and 2D show profiles of the existing condition and the stand alone condition with the Laguna Creek overflow.

The ultimate condition assumes that the NVSSP area and upstream areas within the Elder/Gerber Creek watershed have been urbanized, and that ultimate flood control improvements identified in the County's scoping study for the Elder/Gerber Creek watershed and improvements which eliminate the Laguna Creek interbasin transfer have been constructed. The stand alone condition assumes that the NVSSP area has been fully developed and that drainage facilities within and downstream of the NVSSP area have been constructed. However, ultimate system components, such as drainage improvements upstream of the NVSSP area and elimination of the Laguna Creek interbasin transfer, are not assumed under the stand alone condition.

Generally, development results in increased flood flows due to both increased imperviousness and channelization. Increased imperviousness results in less infiltration of rainfall and a more rapid rate of runoff. Channelization results in more efficient and rapid conveyance of runoff downstream, as well as a reduction in floodplain storage, and capture of existing flows that currently escape the system as a result of high water surface

NORTH VINEYARD STATION SPECIFIC PLAN

ELDER CREEK PROFILES
EXISTING CONDITIONS & ULTIMATE CONDITIONS

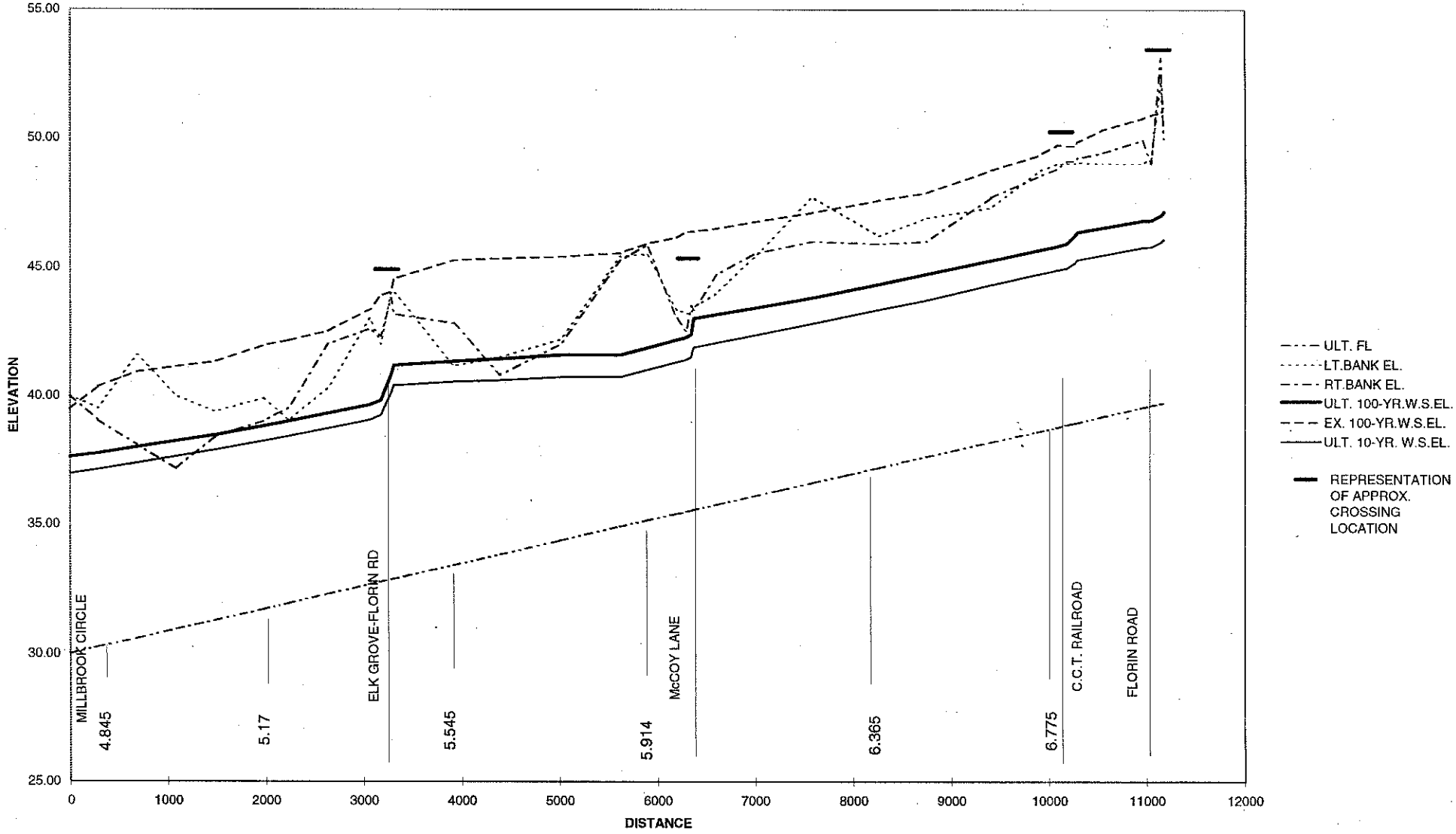


PLATE HY-F

11.5a

NORTH VINEYARD STATION SPECIFIC PLAN.

ELDER CREEK PROFILES

EXISTING CONDITIONS & STAND ALONE CONDITIONS

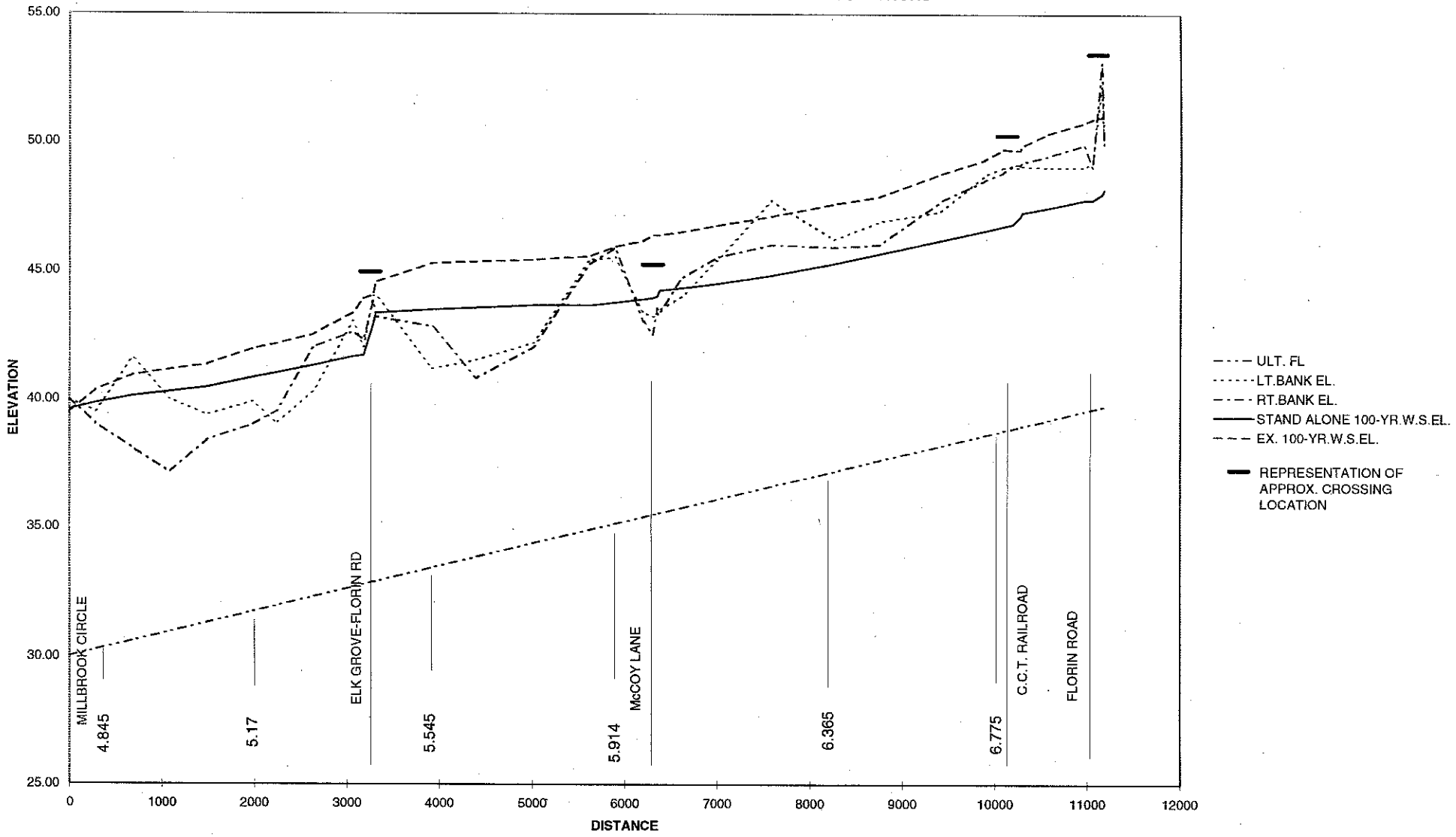


PLATE HY-G

NORTH VINEYARD STATION SPECIFIC PLAN

GERBER CREEK PROFILES
EXISTING CONDITIONS & ULTIMATE CONDITIONS

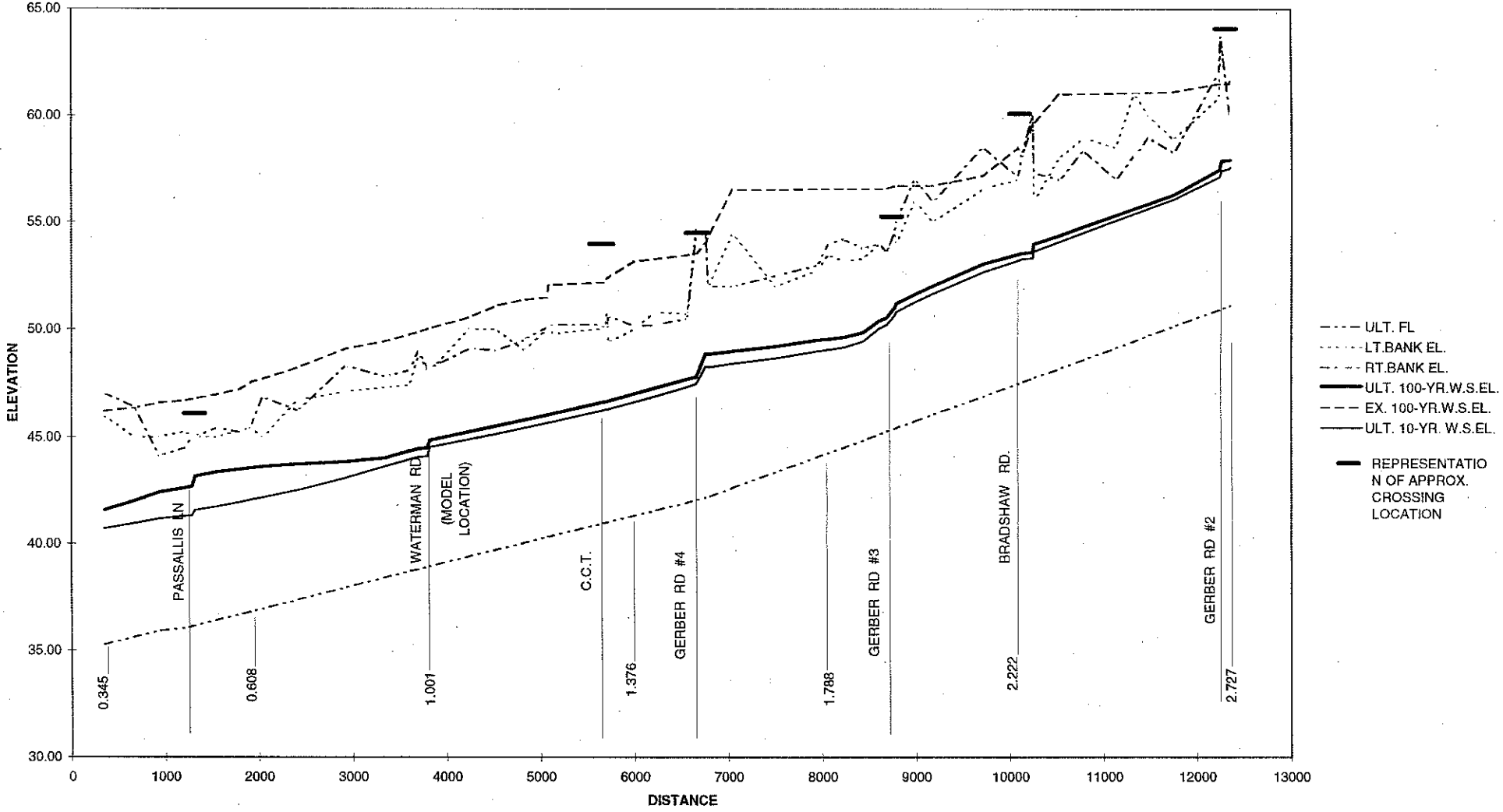


PLATE HY-H

NORTH VINEYARD STATION SPECIFIC PLAN

GERBER CREEK PROFILES
EXISTING CONDITIONS & STAND ALONE CONDITIONS

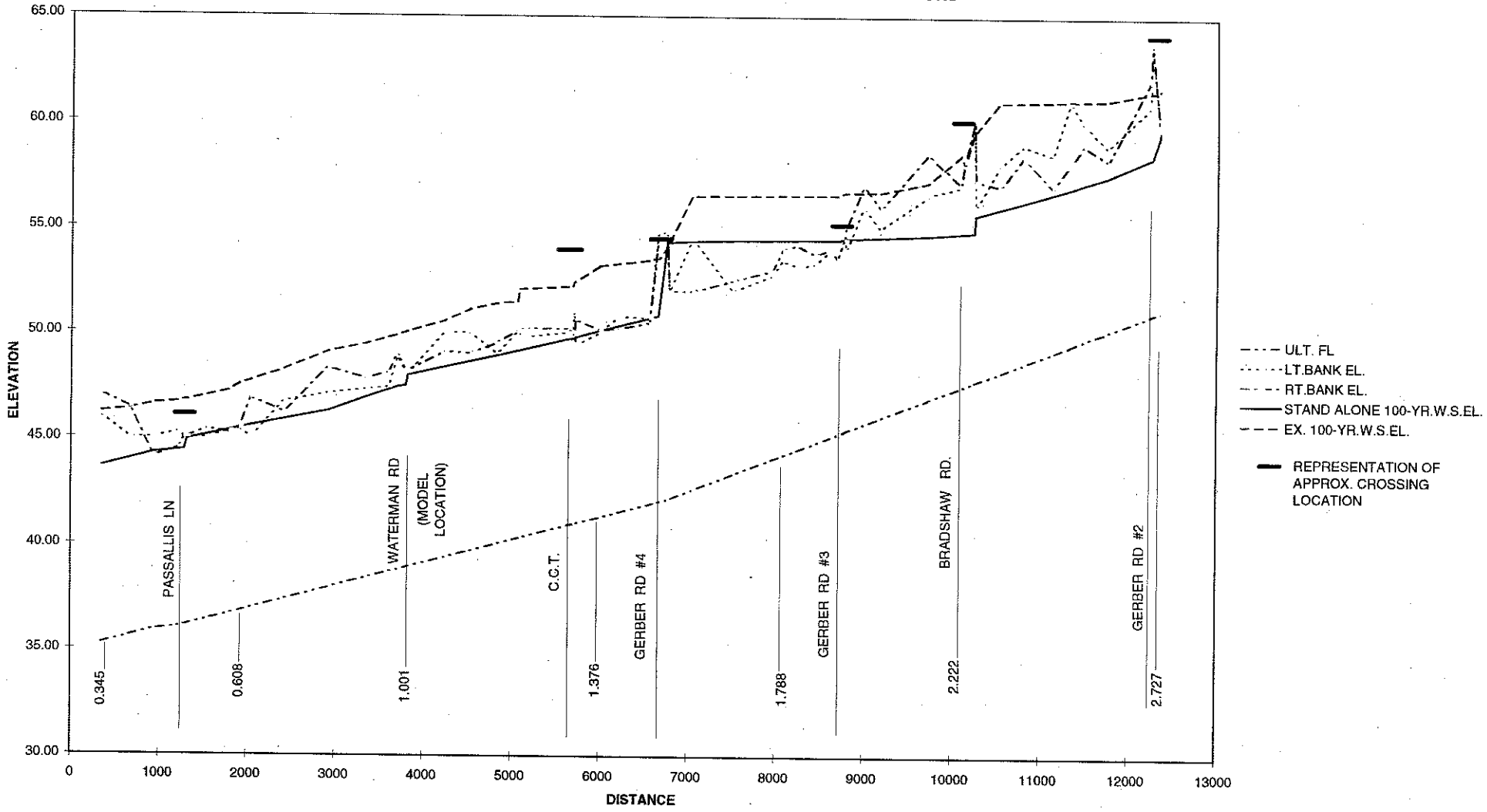


PLATE HY-I

elevations. In order to meet the flow criteria established by the County scoping study, it will be necessary to reduce the ultimate 100-year peak flows to levels below existing rates. This reduction can be accomplished by the construction of detention facilities.

Tables HY-1 and HY-2 present calculated 10- and 100-year flows for existing conditions and ultimate conditions for Elder and Gerber Creeks. Tables HY-1 and HY-2 illustrate that construction of detention basins throughout the shed will attenuate peak 10-year flows down to very near existing and 100-year flows down to well below existing. This indicates that the ultimate detention facilities are appropriately designed to mitigate the increased flows due to development, as well as the reduction of natural floodplain storage due to channelization.

Tables HY-3 and HY-4 present 100-year peak flows for existing and stand alone conditions for Elder and Gerber Creeks. Tables HY-3 and HY-4 illustrate that construction of certain off-site ultimate facilities (i.e., downstream Detention Basin E20) would be needed to reduce stand alone peak flows at the City limit to existing levels.

Alternatives Analysis for the Proposed DMP for the NVSSP Area.

As part of their scoping study, Sacramento County WRD has developed the following criteria for the ultimate condition Elder/Gerber Creek watershed:

1. No increase in the peak 100-year flow is allowed at the City/County boundary; and

2. No significant 100-year flows are allowed out-of-bank in the existing improved channel downstream of the Specific Plan area.

The WRD study also developed a conceptual plan which identified shed-wide detention requirements and channel improvements which would meet the above flow limits. Both the increase of imperviousness associated with changes in land use and the more efficient and rapid conveyance of runoff due to channelization contribute to the increase in flows caused by development. Channelization significantly changes the "time-to-peak" of the flood, bringing together flood peaks from different branches of the system when they were hours apart in the existing condition. Detention within and upstream of the Specific Plan area must provide attenuation of the increased flows caused by project development and channelization within the contributing watersheds. The two main reasons for this are:

1. Limited detention sites are available downstream of the Specific Plan area; and

2. Channelization conveys flood peaks downstream more rapidly.

TABLE HY-1 - GERBER CREEK FLOWS

LOCATION	UNET SECTION (ULTIMATE)	TRIBUTARY AREA (ACRES)	10-Year Flows (CFS) EXISTING	10-Year Flows (CFS) ULTIMATE	100-Year Flows (CFS) EXISTING	100-Year Flows (CFS) ULTIMATE
D/S Gerber Rd. Crossing No.1 (300' East of Vineyard Road, Offsite)	3.933	966	60	126	67	126
U/S Gerber Rd. Crossing No. 2 (1700' East of Bradshaw)	2.727	1,205	128	170	178	234
D/S Bradshaw Road	2.169	1,681	292	268	487	293
D/S Gerber Rd. Crossing No. 3 (1100' West of Bradshaw)	1.900	1,765	377	297	790	349
U/S Gerber Rd. Crossing No. 4 (Adjacent to CCTRR)	1.544	2,697	444	446	1,475	452
D/S CCTC Railroad	1.274	2,843	458	411	1,440	486
U/S of Confluence at Elder Creek	0.345	3,095	473	431	1,078	500

*Notes: Flows based on WRD UNET Analysis Report prepared by Doug Hamilton dated July 1996 (existing condition model revised 12-96) except for 10-year flows which are based on HEC 1 analysis prepared by MacKay & Somps.

TABLE HY-2 - ELDER CREEK FLOWS

LOCATION	UNET SECTION (ULTIMATE)	TRIBUTARY AREA (ACRES)	10-Year Flows (CFS) EXISTING	10-Year Flows (CFS) ULTIMATE	100-Year Flows (CFS) EXISTING	100-Year Flows (CFS) ULTIMATE
U/S Florin Road	7.000	4,435	496	521	938	705
U/S CCTC Railroad	6.820	4,857	530	578	1,032	788
U/S of Confluence at Gerber Creek	5.914	5,070	525	575	1,000	780
D/S Elk Grove-Florin Road	5.402	8,299	947	977	2,057	1,255
At Exist. Improved Channel U/S of Millbrook Circle	4.779	8,760	940	938	2,058	1.110
Sacramento City Limits	1.878	9,905	1,243	1,153	1,988	1,688

*Notes: Flows based on WRD UNET Analysis Report prepared by Doug Hamilton dated July, 1996 (existing condition model revised 12-96) except for 10-year flows which are based on HEC 1 analysis prepared by MacKay & Somps.

TABLE HY-3 - STAND ALONE CONDITION GERBER CREEK FLOWS

LOCATION	UNET SECTION (Ultimate)	TRIBUTARY AREA (Acres)	100-Year Flows (CFS) EXISTING	STAND ALONE Case 1 (w/Laguna Overspill: w/o Basin E20)	STAND ALONE Case 2 (w/ Laguna Overspill; w/o Basin E20; w/optim. Basins G41 & E24A)	STAND ALONE Case 3 w/Laguna Overspill: w/optim. Basin E20)
D/S Gerber Rd. Crossing No. 1 (300' East of Vineyard Road, Offsite)	3.933	966	70	345	345	345
U/S Gerber Rd. Crossing No. 2 (1700' East of Bradshaw)	2.727	1,205	180	450	450	450
D/S Bradshaw Road	2.169	1,681	490	470	470	470
D/S Gerber Rd. Crossing No. 3 (1100' West of Bradshaw)	1.900	1,765	790	475	475	475
U/S Gerber Rd. Crossing No. 4 (Adjacent to CCTRR)	1.544	2,697	1,475	1,345	1,345	1,345
D/S CCTC Railroad	1.274	2,843	1,440	1,325	1,325	1,325
U/S of Confluence at Elder Creek	0.345	3,095	1,070	1,290	1,135	1,290

*Notes: Flows based on WRD UNET Analysis Report prepared by Doug Hamilton dated July 1996 (existing condition model revised 12-96) and supplemental stand alone condition analysis prepared by MacKay & Somps.

TABLE HY-4 - STAND ALONE CONDITION ELDER CREEK FLOWS

LOCATION	UNET SECTION (Ultimate)	TRIBUTARY AREA (Acres)	100-Year Flows (CFS) EXISTING	STAND ALONE Case 1 (w/Laguna Overspill: w/o Basin E20)	STAND ALONE Case 2 (w/ Laguna Overspill; w/o Basin E20; w/optim. Basins G41 & E24A)	STAND ALONE Case 3 w/Laguna Overspill: w/optim. Basin E20)
U/S Florin Road	7.000	4,435	940	960	960	960
U/S CCTC Railroad	6.820	4,857	1,035	1,035	1,035	1,035
U/S of Confluence at Gerber Creek	5.914	5,070	1,000	1,005	1,005	1,005
D/S Elk Grove - Florin Road	5.402	8,299	2,060	2,200	2,085	2,200
At Exist. Improved Channel U/S of Millbrook Circle	4.779	8,760	2,045	2,165	2,055	1,950
Sacramento City Limits	1.878	9,905	1,985	2,075	2,000	1,915

*Notes: Flows based on WRD UNET Analysis Report prepared by Doug Hamilton dated July, 1996 (existing condition model revised 12-96) and supplemental stand alone condition analysis prepared by MacKay & Somps.

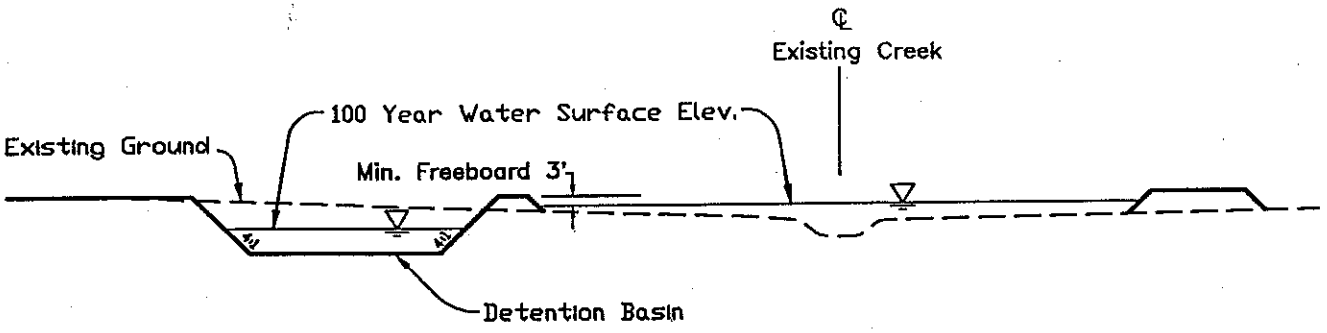
The WRD scoping study developed general guidelines for meeting the specific requirements within the Elder/Gerber Creek watershed. The following alternatives were analyzed as possible methods to provide flood control within the NVSSP area, while meeting the objectives of the WRD scoping study:

1. Leveed channels with detention;
2. Bypass channels with detention;
3. Wide naturalized creek with in-channel detention;
4. Improved trapezoidal channel with detention;
5. Improved naturalized channels with linear detention; and
6. Improved naturalized channels with point detention.

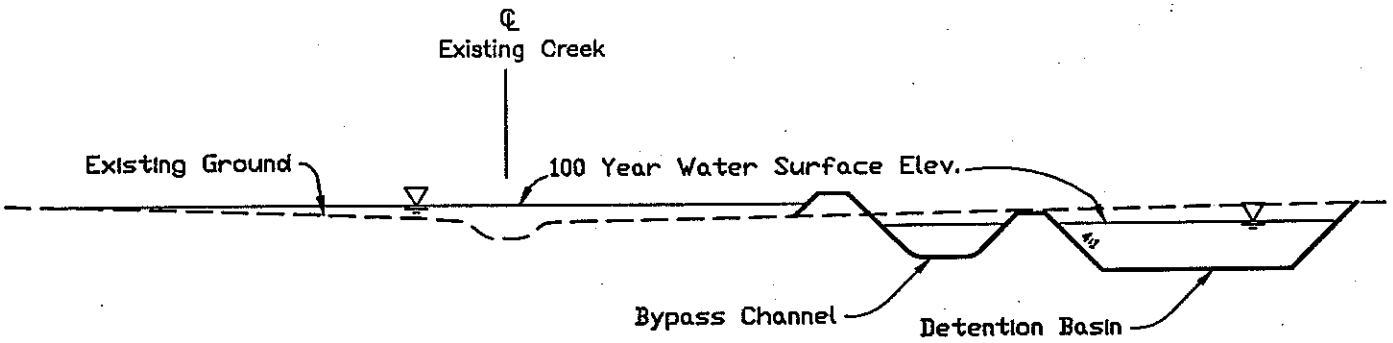
Cross-sections for each of these alternatives are shown on Plate HY-J, HY-K and HY-L. These alternatives were evaluated in a qualitative way, based on the following performance criteria:

1. Flood control effectiveness;
2. Reliability (potential for failure);
3. Land use efficiency;
4. Costs (construction, maintenance, operational);
5. Environmental impacts and benefits;
6. Resulting aesthetics;
7. Operational safety;
8. Joint use potential;
9. Compatibility with water quality facilities;
10. Conformance with General Plan policies; and
11. Phasing potential.

The analysis of alternatives is summarized on HY-5, which presents a matrix that allows



LEVEED CHANNEL WITH DETENTION



BYPASS CHANNEL WITH DETENTION

PLATE HY-J

NORTH VINEYARD STATION
SPECIFIC PLAN

FLOOD CONTROL ALTERNATIVES

Sacramento County California

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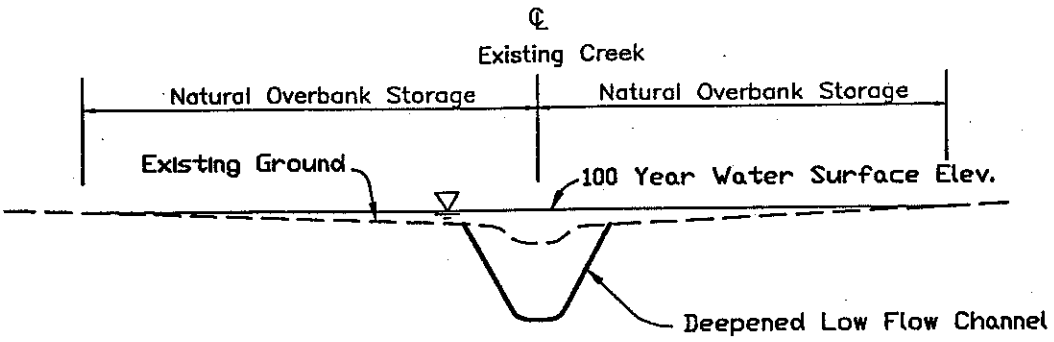
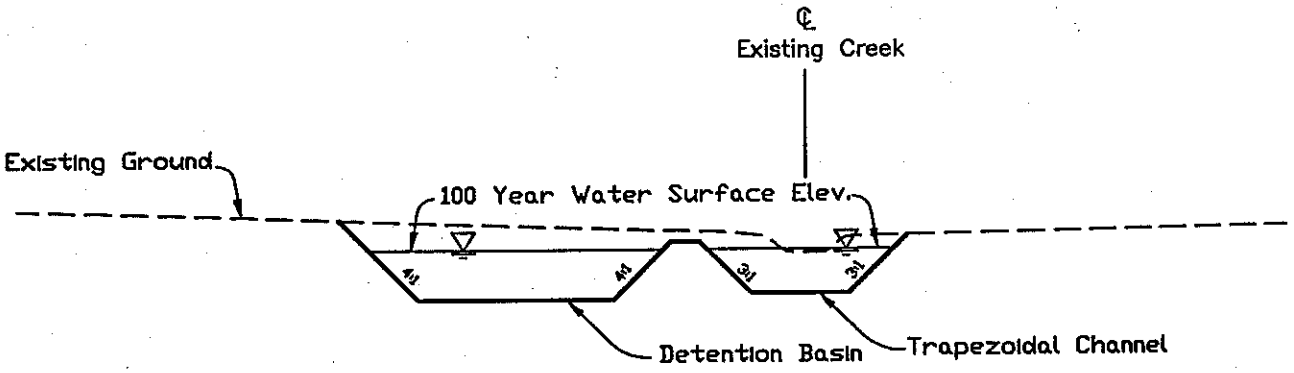


WIDE NATURALIZED CREEK WITH IN-CHANNEL DETENTION



IMPROVED TRAPEZOIDAL CHANNEL WITH DETENTION

PLATE HY-K

NORTH VINEYARD STATION
SPECIFIC PLAN

FLOOD CONTROL ALTERNATIVES

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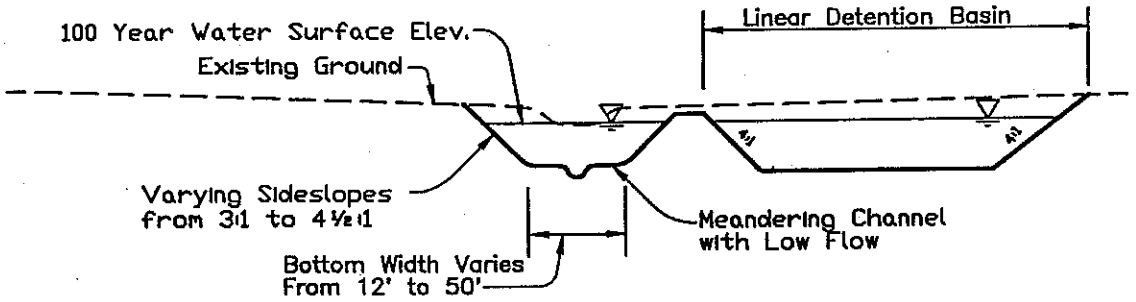
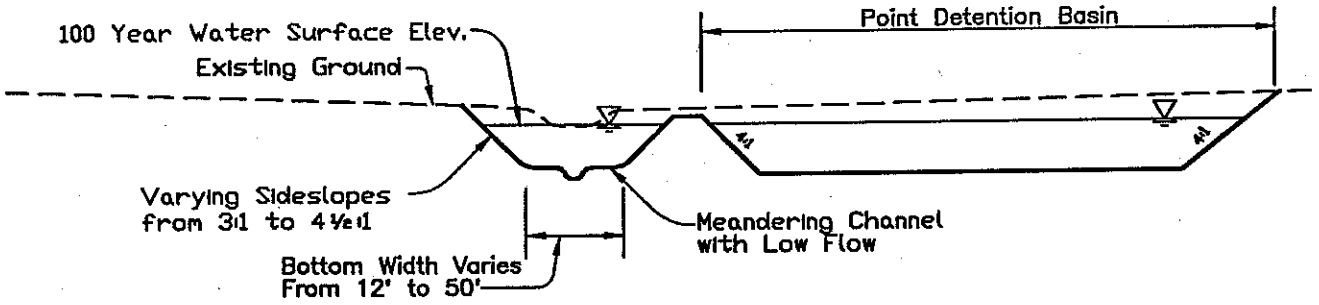


NATURALIZED CHANNEL WITH LINEAR DETENTION



NATURALIZED CHANNEL WITH POINT DETENTION

NORTH VINEYARD STATION
SPECIFIC PLAN

FLOOD CONTROL ALTERNATIVES

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PLATE HY-L

TABLE HY-5

FLOOD CONTROL ALTERNATIVES MATRIX
for
ELDER and GERBER CREEKS

EVALUATION CRITERIA	Criteria Weighting Factor	ALTERNATIVE #1 Levees With Detention — Construct levees roughly 6' to 10' high along both sides of existing creeks. Construct detention basins outside the levees.		ALTERNATIVE #2 Bypass Channels with Detention — Leave existing creeks mostly undisturbed; Construct parallel channels to convey flood flows; Construct detention along bypass channels.		ALTERNATIVE #3 Wide Naturalized Creek with In-channel Detention — Construct narrow 8' to 10' deep channel with wide overbank area to provide natural in-channel detention.		ALTERNATIVE #4 Improved Trapezoidal Channel with detention — Construct minimum width channel as necessary to convey flows with associated detention; No excess land in corridor for trails or other amenities.		ALTERNATIVE #5 Improved/Naturalized Creek with Linear Detention — Construct 8' to 10' deep channel with geometrical variation; Accomodate trails and other amenities; Provide longer, narrower detention basins along most of the length of the channel		ALTERNATIVE #6 Improved/Naturalized Creek with Point Detention — Construct 8' to 10' deep channel with geometrical variation; Accomodate trails and other amenities; Provide several large detention basins.	
		Base Rating	Weighted Rating	Base Rating	Weighted Rating	Base Rating	Weighted Rating	Base Rating	Weighted Rating	Base Rating	Weighted Rating	Base Rating	Weighted Rating
1) Flood Control Adequacy													
a) Regional	20	5	100	3	60	6	120	1	20	1	20	1	20
b) Local	20	5	100	3	60	6	120	1	20	1	20	1	20
2) Operational Reliability	13	6	78	2	26	5	65	1	13	1	13	1	13
3) Land Issues													
a) Public Land Use Efficiency	2	4	8	4	8	5	10	1	2	3	6	2	4
b) Acquisition Availability	3	4	12	4	12	5	15	1	3	2	6	3	9
4) Costs													
a) Land Acquisition	5	4	20	4	20	5	25	1	5	3	15	2	10
b) Construction	5	6	30	5	25	1	5	2	10	4	20	3	15
c) Operational	4	6	24	5	20	4	16	1	4	3	12	2	8
5) Environmental Compatability													
a) Preservation	8	2	16	4	32	4	32	6	48	6	48	6	48
b) Enhancement	5	5	25	4	20	2	10	6	30	1	5	1	5
6) Resulting Aesthetics	2	5	10	2	4	1	2	6	12	3	6	3	6
7) Operational Safety (Public Interface)	3	6	18	2	6	1	3	5	15	4	12	3	9
8) Joint-Use potential	1	5	5	4	4	1	1	5	5	2	2	2	2
9) Compatability with Water Quality Facilities	2	4	8	4	8	6	12	1	2	1	2	1	2
10 Conformance with General Plan Policies	5	6	30	2	10	1	5	3	15	3	15	3	15
11 Ability to phase construction improvements	2	6	12	4	8	5	10	2	4	1	2	2	4
Total Weighted Rating	100		496		323		451		208		204		190

a comparison of each of the alternatives against the above listed performance criteria. Each of the alternatives is assigned a level of service rating from 1 to 6 (best to worst) for each of the performance criteria. If any of the alternatives provided equal levels of service within a criteria, then they were given the same rating within that criteria. A weighting factor was then assigned for each of the evaluation criteria based on the relative importance of the criteria in meeting the goals of the master plan. To determine the overall performance of each alternative, the base rating was multiplied by the criteria weighting factor for each of the eleven evaluation criteria. The resultant products were then summed. The most desirable alternative was the one with the lowest overall score. Although both the criteria weighting factors and the base ratings are somewhat subjective, Table 3 gives a reasonable evaluation of the relative performance of each alternative and shows the reasoning behind the selection of the preferred alternative.

Each of the alternatives are more fully described and discussed below. In the following descriptions, there are several references to on-line detention and off-line detention. It is important to understand the differences between these two forms of detention. For an on-line detention basin, all flows are directed into the basin and then released through an outlet control structure into the downstream drainage facility, typically a channel. For an off-line basin, all flows are first directed into a drainage channel, and then low flows for water quality treatment and higher flood flows are diverted out of the channel into the detention basin. Off-line basins operate more efficiently and require less volume to achieve peak flow attenuation because they do not store any of the low flood flows that occur early on in a storm event.

Alternative No 1 - Leveed Channels with Detention

A leveed channel alternative would consist of FEMA certified levees being constructed to confine the ultimate flood flows within a narrower corridor than the natural floodplain. The natural floodplain width will already be reduced in the ultimate condition due to the reduction of peak flows by detention. Levees would further restrict the floodplain to a much narrower corridor.

All runoff from surrounding lands would be directed into detention basins located adjacent to the levees and pumped over the levees into the creek. No direct piping into the channel could occur due to the need to keep the surrounding lands hydraulically separated from the high water surface elevation within the channel. The detention basins would therefore be on-line basins and would have a large land requirement.

The leveed channel alternative was found to be the least acceptable of the alternatives. A leveed channel system is prohibitively expensive, both in terms of initial construction costs and long-term operation and maintenance costs. This is due to the cost of the required pumping facilities, levees, and road crossings. The leveed system would also

have a large land requirement for detention basins since on-line basins outside of the levees would be required. A leveed system also presents the greatest possibility of a catastrophic failure with little or no warning due to the possibility of a levee breach and to the reliance on pumping.

Although this alternative would meet the General Plan policy goals of avoiding channelization and realignment and maintaining the existing riparian habitat, the constriction of the floodplain by levees would result in higher flood elevations and an unnatural appearance which is contrary to the General Plan policies.

Alternative No. 2 - Bypass Channel with Detention

The bypass channel alternative would result in deeper and wider "bypass" channels being constructed along one side of the natural creeks. In concept, lands on the creek side of the drainage corridor would drain directly into the existing creek. The creek would convey the flow downstream unless the capacity of the creek was exceeded. In this event, excess flows would be diverted into the bypass channel and conveyed downstream. The diversion would occur over wiers located between the bypass channel and the existing creek. Detention basins could be provided at various locations along the bypass channel to attenuate post development flows as required.

The bypass channel can be an effective approach given the right circumstances. A bypass channel system would allow the existing creeks and the natural riparian vegetation within to remain mostly undisturbed. As a result, this alternative rated high in conformance with General Plan policies. However, in this case, there would be a significant problem in maintaining low frequent flows into the natural creeks. The developed areas proposed as a part of the Specific Plan will be served by storm drain pipes which typically require 2 feet to 2.5 feet of cover (depth to top of pipe) as a minimum. The size of the outfall pipes into the future channels will range from 18 inches to 72 inches. Thus, the depth of the outfall flowlines will range from 4 feet to 9 feet deep. The flowlines of the existing channels are much too shallow to provide an outfall for these pipe systems making this alternative infeasible for this area. Reliance on flows from areas upstream of the Specific Plan Area is not feasible since these areas would likely have the same difficulty in maintaining flows into the natural creek if development were to occur. The main expected advantage of this alternative is maintaining the existing riparian ecosystem. The elimination of low flows to the existing creek does not allow for this to be achieved.

Alternative No. 3 - Wide Naturalized Creek with In-Channel Detention

The wide naturalized creek with in-channel detention would be designed to imitate the function of the existing natural creeks and associated floodplains. This alternative would provide a narrow low flow channel deepened enough to provide gravity service to piped

drainage systems while maintaining the existing overbank area to provide flood storage. The goal of this alternative would be to create a channel corridor which provides adequate flood conveyance and detention while maintaining or re-creating the natural biological value of the existing creeks.

In terms of environmental compatibility and General Plan conformance, the wide naturalized floodplain alternative is the highest rated alternative. Although this alternative would not completely avoid channelization, it would allow the creeks to retain their natural appearance and diversity and would re-create and enhance the existing natural riparian habitat. However, flood control performance is a problem. The basic concept for this alternative is to maintain the existing creek floodplain areas in their existing state. The existing floodplains are at relatively high elevations and since these areas would be used for detention in the ultimate condition, 10-year and 100-year flood flows would spill into the existing overbank areas. This would result in a 10-year water surface elevation that would be too high to allow the storm drain pipe systems from developed areas to meet the County's hydraulic grade line standards without large volumes of imported fill material. A possible solution would be to excavate the overbank areas to a lower elevation, but by lowering such a large area, even a small amount would be extremely costly, and result in required re-creation of the ecosystem which was intended to be preserved. Therefore, also, this alternative is also not viable because it does not achieve the project goals of flood control and adequate drainage.

Alternative No. 4 - Improved Trapezoidal Channel with Detention

This alternative is the traditional flood control approach: a clean, uniform trapezoidal channel, with steep side slopes and flat bottom, constructed within a fenced, minimum width corridor.

The improved trapezoidal channel alternative rated well due to its ability to provide excellent flood control performance at a relatively low cost. Its major drawback is that it would have little aesthetic or biological value and would not result in a beneficial, joint use community amenity. This alternative would not be consistent with the General Plan policies for urban creeks.

Alternative No. 5 - Improved Naturalized Channel with Linear Detention

This alternative would consist of naturalized improved channels with linear (parallel) detention basins located adjacent to the channel. Linear basins may be practical in some areas where construction of one large point basin is impractical due to property constraints. The naturalized channels would be deeper and wider than the existing creeks in order to provide service to the piped drainage systems from developed areas within the

Specific Plan area, and would have a low flow channel that meanders within the main channel bottom. The main bottom, which would host wetlands vegetation, would also meander within the channel corridor. The channel side slopes would vary between 3 to 1 (horizontal to vertical) and 4.5 to 1. Occasional low marsh/pool areas would be created within the channel bottom. Along the overbank areas, occasional areas of mounding would provide an additional aesthetic variation within the corridor. The end result would be a meandering, varying channel with high aesthetic and biological value. The linear detention basins would function as off-line, dual purpose detention basins providing both flood control and water quality treatment.

The improved naturalized creek with linear detention alternative would provide the same excellent flood control protection as Alternative No. 4. This alternative would be more costly to construct due to wider channels and the linear detention basins. Linear basins are longer and narrower than the standard single point detention basins. This inefficient shape results in a larger land requirement that is estimated to be approximately 1.5 times greater than for a point detention system within the Specific Plan area. Existing development in the vicinity of, and downstream of, the confluence of Elder Creek and Gerber Creek is constraining.

The linear system would also result in a higher number of basins being required than for a point basin system. This is due to the fact that a linear basin must be segmented wherever a storm drain outfall enters the channel on the same side as the basin. The drain pipe cannot be discharged directly into a basin since they are off-line facilities and the flood control volume must be reserved until a large flood wave is diverted out of the channel. The pipe would not be able to pass underneath the basin unless the basin bottom was raised considerably which would result in a much greater area being required to achieve the same volume. Linear basins must also be segmented in locations of significantly sloping topography as the stream gradient causes the floodplain water surface elevation to fall below that for a level pool connected to some point upstream. A greater number of basins would result in a larger number of inlet and outlet facilities resulting in higher construction and maintenance costs. However, linear basins do provide the advantage of spreading the land impacts more evenly than single point basins and providing more flexibility in finding suitable basin locations.

The naturalized channel would provide wetland habitat to mitigate for impacts and would provide enough visual variation to be aesthetically pleasing. Although this alternative does not rate as well as Alternatives No. 2 and No. 3 in these areas, it would be a significant improvement over Alternative No 4.

Alternative No. 6 - Improved Naturalized Channel with Point Detention

This alternative would consist of a naturalized improved channel with dual purpose

detention basins (stormwater quality and flood control) located at several points along the channel. This alternative is nearly the same as the improved naturalized channel with linear detention alternative except for the detention basin configurations. Instead of long, linear basins that run parallel to the channel, this alternative would provide several large detention basins located at discreet points along the channel.

The improved naturalized creek with point detention alternative rated nearly the same as Alternative No. 5, just slightly better due to the different detention concept. The use of point detention basins would provide several advantages over a linear detention system including less total land required, consolidated maintenance, less complex design of outfalls, and fewer inlet and outlet structures required. The main disadvantage of this alternative is that there is a large local land impact at each basin site, whereas a linear system distributes the impact more broadly.

Preferred Alternative for the Proposed DMP for the NVSSP Area.

The preferred alternative was selected based on its ability to satisfy the master plan goals for the watershed. Initially, the preferred alternative was a mix between Alternative No. 5 and No. 6 described above.

Upon further analysis, the linear detention concept proved to be an ineffective design. The linear basins were too sensitive to small adjustments to the weir elevations causing them to fill up before the peak flow arrived. Therefore, the preferred alternative was revised to include point detention only (i.e., Alternative No. 6).

The preferred alternative for the proposed DMP for the NVSSP area is shown on Plates HY-D and HY-E. Major components of the preferred alternative for the NVSSP DMP are more fully described below.

Channel Improvements

The proposed channels within the NVSSP area will have a more naturalized appearance than a straight, uniform trapezoidal channel. The naturalized channels will have a low flow channel that meanders within the main channel bottom which will also meander within an open space corridor. The channel side slopes will vary between 3 to 1 (horizontal to vertical) and 4.5 to 1. Occasional low marsh/pool areas will be created within the channel bottom. Along the overbank areas, occasional areas of mounding will provide an additional aesthetic variation within the corridor. Specific elements of this conceptual plan will be determined during the design process. The end result will be a meandering, varying channel with high aesthetic and biological value.

The width of the main channel bottom for Elder Creek will be fifty feet throughout the

Specific Plan area with an average depth of eight feet below ground. Off-site improvements will be needed for Elder Creek, both upstream and downstream of the Specific Plan area. At the downstream end, it will be necessary to construct a fifty-foot bottom width channel with side slopes which vary between 3 to 1 and 4.5 to 1, from the confluence of Elder and Gerber Creeks downstream approximately 5,000 feet to the existing improved channel. Upstream of the Specific Plan area the proposed improved channel from the Plan area will be continued upstream from Florin Road approximately 1,500 feet. This is needed to eliminate the existing overtopping condition over Florin Road during a 100-year storm event.

The width of the main channel bottom for Gerber Creek will vary, as follows:

REACH	TYPICAL BOTTOM WIDTH
Confluence to Waterman Road	50 ft.
Waterman Road to Gerber Road Crossing No. 3	40 ft.
Gerber Road Crossing No. 3 to Bradshaw Road	15 ft.
Bradshaw Road to NVSSP boundary at Gerber Road	12 ft.

At the time of future design, these widths can be modified provided that the ultimate goals of the DMP are met.

The average depth of the Gerber Creek channel is also approximately eight feet. Off-site improvements will occur in the reach between Gerber Road Crossing No. 3 and Gerber Road Crossing No. 4 where the creek temporarily leaves the Specific Plan area. This reach of channel will ultimately need to have a forty-foot bottom width to serve the adjacent lands and is shown following the existing creek alignment. The alignment is intended to provide a general guide for future development. Modifications to the alignment to provide increased land use efficiency or to avoid existing facilities may be necessary at the time of future design. Prior to development of these off-site areas, a narrower channel section may be constructed through this reach without adversely affecting the Specific Plan area. However, this channel may be unreimbursed or only partially reimbursed by the County since it is not an ultimate facility.

Flood Control and Stormwater Quality Detention Basins

The flood control detention proposed for the NVSSP DMP is point detention, and the stormwater quality treatment method proposed is dry extended detention basins. Plate HY-E shows the proposed location of the detention basins, and Table HY-6 provides a summary of data for each basin. This detention basin data provides a guideline

TABLE HY-6

DETENTION BASIN DATA

					NPDES DATA		FLOOD CONTROL DATA	
Basin I.D.	Subshed	Contri. Area (Ac) NPDES/Flood Cont.	Site Area (Ac.)	Bottom Elevation (Ft.)	Pool Elevation (Ft.)	Volume (Ac-Ft)	Pool Elevation (Ft.)	Volume (Ac-Ft)
E24A	E5 & G5	243/465	11.8	35.0	37.5	8.0	41.8	45.0
E24B	Port. E5	130/0	4.1	38.9	41.4	4.0	—	0.0
E26	E4A	390/390	20.0	40.5	42.5	12.3	47.9	60.0
G41	G3B & G3C	262/262	10.6	41.5	42.8	8.3	47.4	24.0
G46	G3A	476/476	15.8	50.5	53.0	15.0	55.9	40.0
Off-Site E20	E6	135/135	16 AC	32.7	—	—	38.8	75.0

NPDES Basin Volume based on 0.0315 feet per acre of contributing shed area.

"Flood Control Data" refers to the peak stage for the 100-year design storm with ultimate conditions.

established for the DMP. At the time of future design, size, depth, and weir elevations for the basins may be optimized to provide the required effective flood storage and water quality treatment capacities.

Four of the proposed detention basins (E24A, G41, G46 and E20) will operate as off-line facilities with flows diverted into the basins from the channels. Two of the proposed detention basins (E24B and E26) will operate as on-line facilities. Four of the proposed detention basins (E24A, E26, G41 and G46) will operate as dual purpose basins, serving both water quality treatment and flood control needs. Basin E24B will be designed solely for water quality treatment, while Basin E20 will be designed solely for flood control.

Off-line Basins:

Each of the off-line detention basins will be located directly adjacent to the channel, separated by a ten-foot top width berm unless the berm will be utilized as a maintenance road in which case the width shall be designed to the satisfaction of WRD. Low flows requiring water quality treatment will be diverted into the basins by small check dams across the channel. Low flows will enter the basin until the basin has filled to the water quality design pool elevation. Additional flows will then be prevented from entering the basins by a float controlled device in order to reserve the remaining volume for flood control storage. Runoff captured for treatment will be slowly released from the basins over approximately a 48-hour period. During a large storm event, flood flows will spill over a weir constructed in the berm between the channel and the basin. Once the flood wave has passed, the storage volume will be released back into the channel through a set of outlet pipes which are flapgated on the channel side.

In some instances, there may be a storm drain pipe which outfalls into a creek just downstream of a basin. In this case, low flows from the shed may be diverted into the basin for water quality treatment directly from the pipe. This can be accomplished by constructing a small diversion weir within a manhole or junction structure located adjacent to the basin. Low flows will be diverted into a small pipe draining to the basin, while higher flows will overtop the weir and continue to the creek.

Each off-line basin will be constructed with 4:1 side slopes, a minimum fifteen-foot wide clear strip around the perimeter for maintenance access (except along berms not being utilized as maintenance roads), and an access ramp down to the bottom of the basin.

On-line Basins:

Detention Basin E26 will be an on-line basin with all flows from Sub-basin E4A flowing directly into the basin. The basin was sited within the existing power line corridor since this land is required to be open space. Since this location does not allow a spillway connection to the channel, an off-line basin is not feasible at this location without relocating the channel. Low flows will be directed into the water quality portion of the pond at the north end. Runoff captured for treatment will be slowly released from the basins over approximately a 48-hour period. During a larger storm, flows will exceed the capacity of the water quality volume and will spill into the flood control portion of the pond which will be benched approximately two feet above the water quality portion. The release of flood flows from the pond will be controlled by an outlet pipe which will discharge into the channel. This basin will also have 4:1 side slopes, a fifteen-foot wide maintenance access, and an access ramp to the bottom.

Basin E24B will operate as an on-line water quality only basin. Small frequent flows will flow directly into the basin from the storm drains serving the shed. These flows will be detained for a sufficient amount of time to allow adequate treatment before exiting to the channel through a gravity outlet pipe. Runoff captured for treatment will be slowly released from the basin over approximately a 48-hour period. When the water quality volume has been filled, flood flows will pass through the basin to the creek through gravity flood control pipes.

Bridges and Culverts

Bridge and culvert improvements at several street and railroad crossing locations will be required to provide the necessary depth and/or capacity for the ultimate condition of the drainage channels. Bridge and/or culvert improvements will be required at the Elder Creek crossings of Elk Grove-Florin Road, McCoy Lane, the CCTRR and Florin Road, and at the Gerber Creek crossings of Waterman Road, Passallis Lane, the CCTRR, Gerber Road (Crossings No. 1, 2, 3 and 4) and Bradshaw Road.

At this time, there are numerous private bridges which provide access to individual properties. Based on the preferred land use plan, these private bridges will ultimately be eliminated. At the time of channel construction, provisions will need to be made to provide alternative access to these properties or to replace these bridges with temporary crossings until construction of permanent future access occurs. The need for structures must be analyzed against the requirements of the County's Floodplain Management Ordinance.

As a general rule, road widening projects which include crossings should be designed for

ultimate conditions with improvements consistent with the DMP, rather than designed for existing conditions.

Open Space Corridor

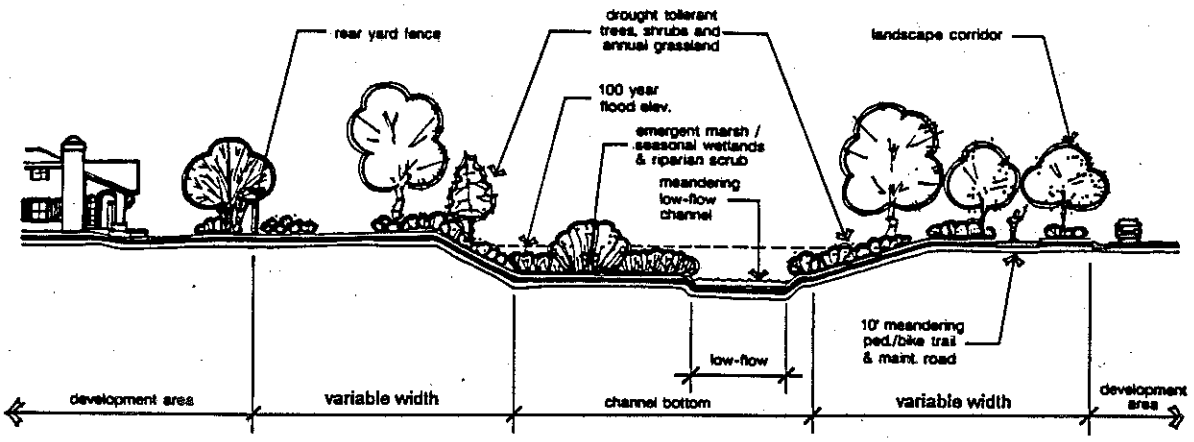
Within the NVSSP area, the Elder Creek and Gerber Creek channels will be located within an open space corridor shown as "Drainage Parkway" on the proposed Specific Plan Land Use Plan. These drainage parkways will have an average width of 200 feet, and are intended to convey stormwater drainage, enhance wetland and riparian habitat, and provide natural appearing linear open space for recreational use. The drainage parkways have been proposed in response to General Plan policies that address preservation and protection of natural, recreation and floodplain features of creek courses.

The drainage parkways will provide opportunities to mitigate for impacted wetlands. Sugnet & Associates estimates that 7.4 acres of on-site wetlands and 5.6 acres of off-site wetlands will be impacted by necessary NVSSP DMP improvements. Much of the impact will be mitigated with compensation emergent marsh constructed in the channel bottom of Gerber and Elder Creeks. Impacts to potential fairy shrimp habitat may either be mitigated on-site or with the purchase of fairy shrimp habitat preservation credits at an agency approved mitigation bank.

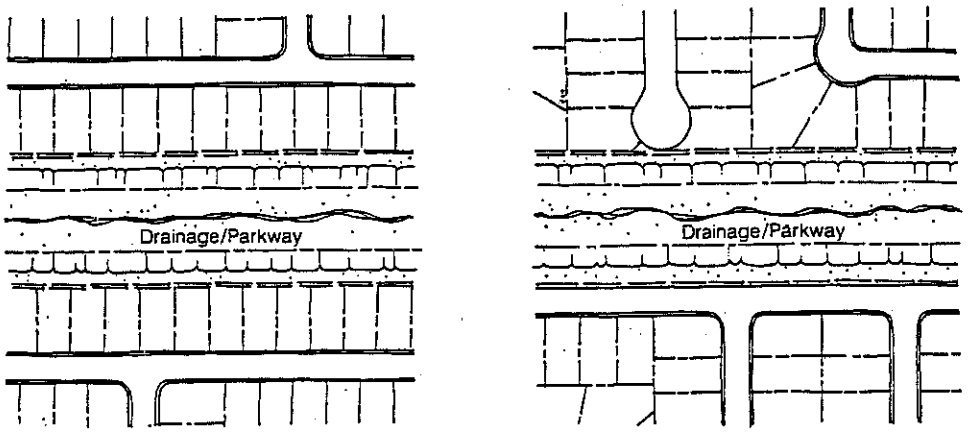
The proposed Specific Plan further describes the open space aspects of the planned on-site drainage parkway and detention basin facilities as follows:

> "Drainage parkways are linear open space areas that will contain manmade storm drainage channels, wetland areas, and maintenance road/pedestrian paths (see Plate M). Gerber and Elder Creeks will become part of an areawide County flood control project through the improvement of these channels and their drainage conveyance.
>
> Drainage parkways will be interrupted only by the street crossings depicted in the Land Use Diagram. Thus, pathways within the drainage parkways will allow pedestrians and bicyclists to travel considerable distances within the Plan area with minimal contact with streets and vehicles.
>
> The drainage parkways will be designed with the following components:
>
> 1. Width varies from 150 to 240 feet with the intent of creating a natural looking corridor.

PLATE M CONCEPTUAL DRAINAGE PARKWAY DESIGN



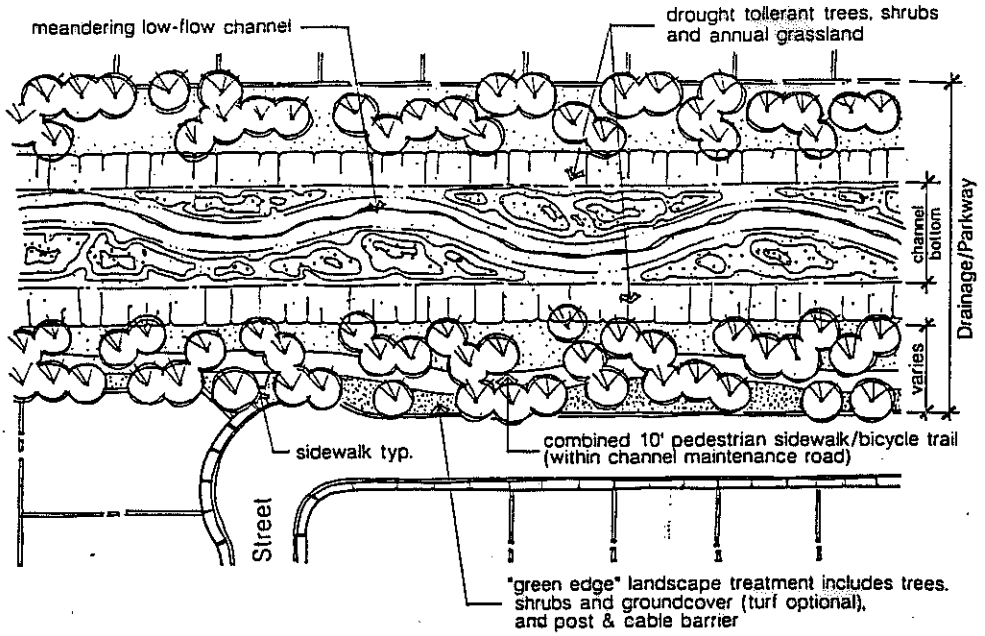
Drainage Parkway Design (Cross-section View)



Excessive back-up lots discouraged

Front-on streets & open ended cul-de-sacs encouraged

Drainage Parkway/Single Family Residential Interface (Plan View)



Drainage Parkway/Local Street Interface (Plan View)

2. Channel bottom area will include a meandering, low-flow channel that varies in width from 12 to 50 feet. Except in limited instances, such as culverts under streets, the low-flow channel will be constructed entirely of earth.

3. Buffer area with an average width of 50 feet on each side of the channel bottom that includes a 10-foot wide paved maintenance road/pedestrian path on one side (on a 15-foot wide gravel base), gently sloping (3:1 to 4.5:1) channel sides, drought tolerant trees, shrubs and annual grassland.

Drainage parkways have been designed in a manner consistent with design characteristics suggested in General Plan Policy CO-120 and are visually and functionally integrated into the Plan.

Policy CO-120. Development design shall minimize the total floodplain frontage which is fenced off from public view. Development adjacent to Urban Stream Corridors shall be encouraged to provide where physically reasonable a public street paralleling at least one side of the corridor with vertical curbs, gutters, foot path, street lighting, and post and cable barriers to prevent vehicular entry.

To the extent possible, drainage parkways will be visible from adjoining streets to improve surveillance and facilitate maintenance. In residential areas, homes will back-up to drainage parkways on one side only. Fences between the drainage parkway and single family residential areas will employ an open design. The relationship of drainage parkways to adjoining development areas is illustrated in Figure 6.1.1.

Drainage parkways will include two distinct forms of landscaping: riparian species will be planted in the channel bottom areas and drought tolerant plant species, including trees, shrubs and annual grassland, will be planted in the buffer areas. The channel bottom areas may also incorporate existing and manmade wetlands (i.e., wetlands mitigation). The buffer area landscaping will be irrigated, in some instances.

Ultimately, the drainage parkways will be owned by the Sacramento County Water Agency. The channel sections will be maintained by the Water Agency, while the buffer areas will be maintained by the

Southgate Recreation and Parks District.

Located throughout the Plan area adjacent to drainage parkways, detention basins also constitute an open space component. While these may be dedicated to and maintained by the County Water Agency to ensure proper function, the Southgate Recreation and Parks District may enter into joint-use agreements with the County that would permit the development of certain recreational facilities. In such instances, these basins will serve a dual use and will be accessible to the public. In other instances, where recreation facilities are not developed, the basins will not be accessible to the public."

General Plan Compliance

The Conservation Element of the Sacramento County General Plan presents policies aimed at preserving and protecting the values of natural streams. The policies apply to specific Urban Stream Corridors designated in the General Plan, including Elder Creek. The following is an analysis of how the preferred alternative for the NVSSP DMP complies with the policies in the Urban Streams section of the Conservation Element in the General Plan. Gerber Creek is not designated as an Urban Stream Corridor on the General Plan, but the following analysis could also be applied to Gerber Creek.

Policy CO-103 states: "Allow no fill in the 100-year floodplain as delineated by currently effective FEMA Flood Insurance Rate Maps or subsequent comprehensive drainage plans adopted by the County unless the fill would cause no increase in flood surface elevation; in the absence of a floodway master plan the resulting floodplain would not be less than 600 feet in width or actual width of the floodplain, whichever is less, except at road crossings; depth of fill would not exceed two feet, except as may be specified for drainage swales in a comprehensive drainage plan; the proposed fill area is not necessary to serve as a detention basin for stormwater runoff; and no wetlands as defined by the U.S. Army Corps of Engineers exist within the proposed fill area". The preferred alternative complies with this policy by providing a comprehensive DMP which specifies the parameters that provide flood protection. The floodplain will not be limited by fills along the fringe, but rather by excavation of the widened and deepened channels.

Policy CO-104 states: "Remove unauthorized fill within the 100-year floodplain at the property owner's expense". Removal of any existing unauthorized fills that have been placed in the existing floodplain will not be necessary due to the proposed construction of the master planned facilities. These existing fills will not be within the modified floodplain, and therefore will not adversely affect the flood elevations.

Policy CO-105 states: "Channel modification projects within Urban Stream Corridors shall be considered for approval by the Board of Supervisors only after conducting a noticed public hearing examining the full range of alternatives, relative costs and benefits, and environmental, economic, and social benefits". This NVSSP DMP includes a discussion of alternatives which will be considered during the public hearing process for the proposed project.

Policy CO-106 states: "Channel realignment within Urban Stream Corridors shall be permitted only when necessary to eliminate flood hazards; it is necessary to protect and preserve natural features and vegetation which would otherwise be removed; it is necessary as a result of surface mining within the floodplain; or the existing channel has been significantly disrupted by agricultural improvements or other man-made changes". Channel realignment has been kept to a minimum and is proposed only where necessary for hydraulic considerations or to correct previous realignments and to avoid existing homes and structures.

Policy CO-107 states: "To the maximum extent practical retain topographic diversity and variation when channels are realigned or modified, including maintaining meandering characteristics, varied berm width, naturalized side slope, and varied channel bottom elevation". Policy CO-108 states: "Natural appearance channels will be encouraged for watercourses in newly developing areas (outside of identified infill areas)". The meandering and varied nature of the preferred alternative channel cross-sections are proposed specifically to address the requirements of these policies.

Policy CO-109 states: "Channel lowering shall occur after consideration of alternatives and only when it is necessary to accommodate the gravity drainage of storm runoff and/or accommodate flood flows under existing bridge structures". The full range of alternatives considered for this project did not reveal a viable solution which allowed the channels to remain at their current elevations while providing gravity service to the NVSSP area.

Policy CO-110 states: "Channel modifications shall not prevent minimum water flows necessary to protect and enhance fish habitats, native riparian vegetation, water quality, or groundwater recharge". Minimum flows will be preserved and enhanced as the system of detention basins and development matures. The design of the channel pattern is intended to enhance riparian habitat.

Policy CO-111 states: "Improvements in watercourses in currently undeveloped areas will be designed for low maintenance. Appropriate Manning's "n" values will be used in design of the watercourses to reflect future vegetative growth (including mitigation plantings) associated with the low maintenance concept". The channel cross-section has been designed with a relatively high Mannings 'n' value (channel roughness coefficient) to allow for future vegetation and minimal maintenance.

Policy CO-112 states: "Channel modifications shall retain marsh and riparian vegetation whenever possible or otherwise re-create the natural stream channel consistent with the ecological integrity of the preexisting stream. Modifications resulting in wetland or riparian loss shall be mitigated". Channel and marsh riparian vegetation will be fully re-created and enhanced by the new facilities in comparison to the existing conditions.

Policy CO-113 states: "The placement of concrete within watercourses will be strongly discouraged. However, it will not be prohibited in identified infill areas where it is consistent with the existing adjacent reaches of the watercourse". The channel design will not include any concrete lining or armoring. Any necessary erosion control measures will utilize more natural appearing systems, such as geotextile gabion matting.

Policy CO-114 states: "Encourage revegetation of native plant species and avoid nonindigenous species". Revegetation of native plant species will be encouraged by cut and replace construction techniques.

Policy CO-115 states: "Sacramento County stream courses within the Urban Service Boundary shall be planned so as to protect natural values". These stream courses within the Urban Services Boundary are planned to provide adequate buffers and protection from frequent maintenance for the natural values which will be created by the project.

Policy CO-116 states: "Where there is extensive existing riparian vegetation, consider construction of secondary flood control channels for flood control purposes". While no extensive riparian vegetation exists along these channels, an alternative project which would utilize secondary flood control channels was evaluated. It was determined that maintaining delivery of low flows into the natural channel to sustain the existing riparian vegetation was problematic.

Conclusion

The ultimate condition DMP system will provide adequate capacity to attenuate and convey drainage from the entire drainage shed. To do so, it relies on a complete system of facilities, including detention throughout the shed, elimination of the Laguna Creek interbasin transfer, and channel and road crossing improvements. The ultimate flows which result are consistent with the Elder and Gerber Creek Draft Watershed Master Plan prepared by WRD.

Stand Alone Conditions Analysis for the Proposed DMP for the NVSSP Area.

Description of Stand Alone Conditions

The preferred alternative DMP provides adequate flood control and drainage conveyance capacity to achieve the project goals in the ultimate condition. This ultimate preferred alternative has several components associated with it that will not be constructed or realized until some time in the future. Stand alone condition scenarios were therefore devised in order to analyze the potential impacts associated with land development within the NVSSP area and construction of drainage facilities within and downstream of the NVSSP area.

Ultimate system components, such as upstream detention and elimination of the Laguna Creek interbasin transfer, are not part of the stand alone condition scenarios. Since these components are integral to the ultimate design, until they are implemented, flows in the system will be higher than ultimate conditions, and in some areas, higher than existing conditions. If the system of channels, culverts, and on-site detention are to be constructed to provide ultimate capacity, the system will operate conveying higher flows than it is designed to convey. Analysis of the potential impacts under such conditions is therefore necessary.

Under the stand alone condition scenarios, it is important and necessary to assume ultimate land uses within the NVSSP boundaries which will provide a worst case analysis of the project's potential drainage impacts, in order to determine whether the proposed drainage project adequately mitigates for the impacts of that land development under such worst case conditions. Actually, development will likely progress in a more or less continuous phase over many years, presenting an ever changing interim condition, which will be discussed below under Phased Development Analysis.

Generally, development within the NVSSP area will require construction of the channels downstream from that development to a location where they tie into the improved channel near Millbrook Circle, west of Elk Grove-Florin Road. This is due to the relatively flat longitudinal grades of the channels and the necessity to 'daylight' them so that low flows drain downstream. In order to have construction costs reimbursed from Zone 11 drainage fees, the channels must be constructed to their ultimate cross-section and depth.

Stand alone conditions assume construction of the on-site detention basins to mitigate for the impacts of development. While construction will be phased as required to serve development, the stand alone condition scenarios reflect conditions at a specific point in time upon full buildout of the NVSSP area.

During high flows, Laguna Creek overtops its banks under existing conditions and sends

flows north and west along the CCTR into Gerber Creek before it crosses Gerber Road into the Specific Plan area. The resultant shallow and broad floodplain allows flows to spill back out of the Gerber Creek watershed into the Unionhouse Creek shed over Gerber Road to the west of the railroad tracks. This reduces the flow that is translated downstream in Gerber Creek.

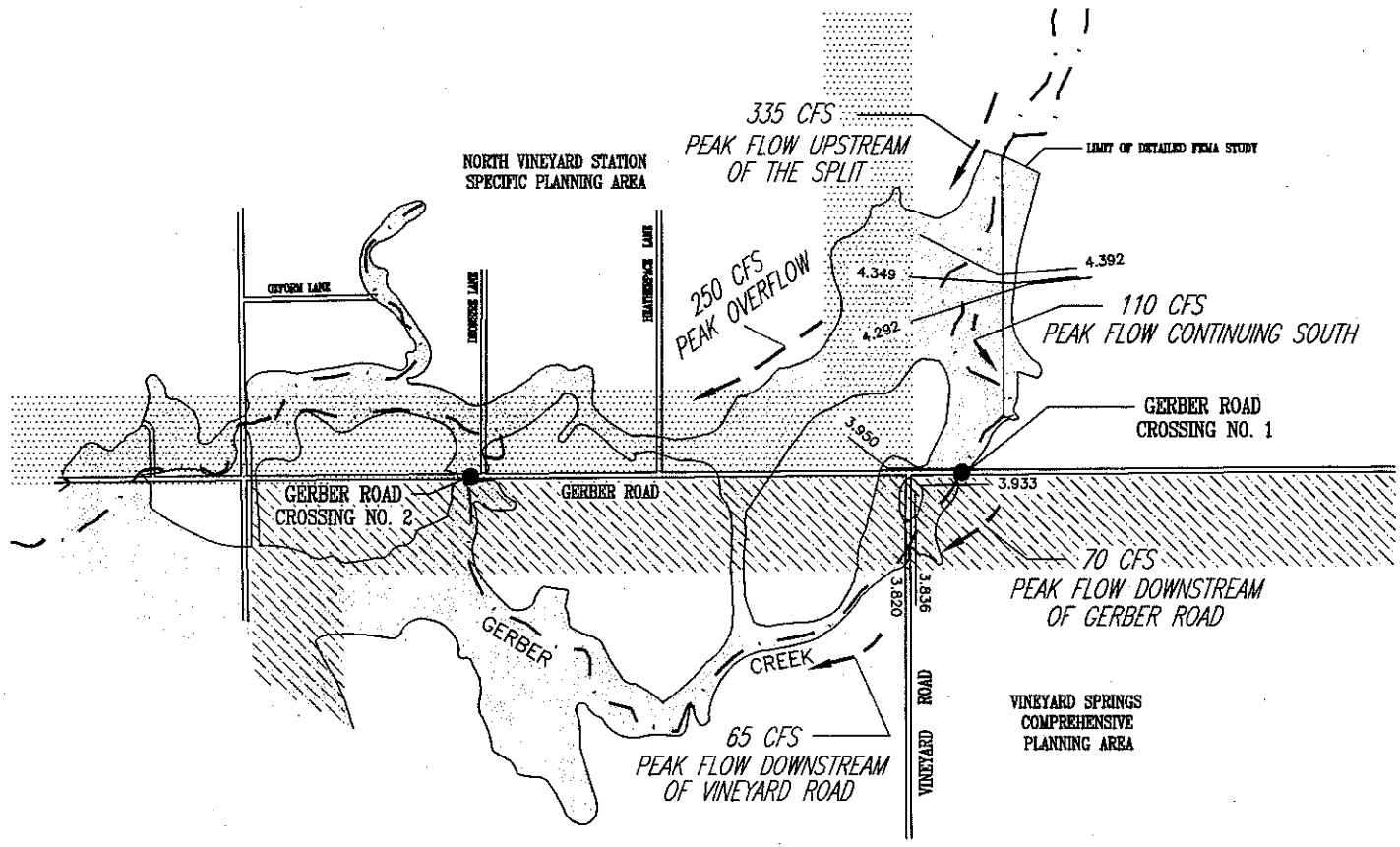
Stand alone conditions assume construction of the Gerber Creek channel to ultimate depth and width. This channel modification confines the majority of the flows to the channel and its immediate overbank areas. As a direct result of the channel modifications, the outflow from Gerber Creek to Unionhouse Creek is eliminated. This results in the flows that previously jumped shed being translated downstream in Gerber Creek. The worst case scenario is then realized: interbasin transfer flows from Laguna Creek enter the Gerber/Elder system and are conveyed downstream, while flows previously released to Unionhouse Creek are contained in Gerber Creek due to the lowered channel downstream. Predicted worst case stand alone condition flows just downstream of the interbasin transfer locations are approximately 220 cfs larger than existing flow.

Upstream of the first Gerber Road crossing, Gerber Creek winds through an existing pond/wetland area partially created by a low dam constructed across the flow path just upstream from Gerber Road. The existing elevations along a property line, which is the extension of Vineyard Road and forms the easterly boundary of the NVSSP area, are at the same elevation as the dam. Since this point occurs upstream of the dam, the resultant water surface elevation exceeds these ground elevations and much (approximately 70% - 75%) of the flow spills overland to the west into the NVSSP area. (See Plate N for an illustration of this existing Gerber Creek overflow condition upstream of the NVSSP area.)

The stand alone conditions analysis includes a worst case assumption that channel improvements are constructed to the point of overflow, eliminating it. This eliminates any natural attenuation which currently occurs in the area directly east of the Specific Plan, and translates the full existing flows downstream. These existing flows are in excess of 345 cfs.

This differs from the ultimate conditions model which uses an attenuated flow of 120 cfs which is nearly three times less than these existing unattenuated flows. Future detention basin G50 near this location will provide this attenuation of both existing and ultimate flows.

This basic fact that stand alone condition flows exceed ultimate flows presents a fundamental question. In the long-term view, the basic functionality of the master planned facilities are interdependent; they rely on all the other components of the system to operate in reducing ultimate flows to a level less than exists today. If stand alone



LEGEND

- VINEYARD SPRINGS COMPREHENSIVE PLANNING AREA
- 100-YEAR FEMA FLOODPLAIN
- NORTH VINEYARD STATION SPECIFIC PLANNING AREA
- CREEK (OPEN CHANNEL)
- 3.820 — UNET MODEL CROSS-SECTION ID NUMBER
- FLOW DIRECTION

NOTE : EXISTING CONDITIONS AND 100-YEAR FLOOD FLOWS

County of Sacramento Public Works Agency Water Resources Division	**Elder and Gerber Creeks** **Appendix A** **UNET Analysis**	Gerber Creek Overflow map **PLATE N**

11.22a

conditions are foreseen that must accommodate flows larger than the ultimate capacity of the system, then one of two conditions must occur. The first is that the ultimate condition facilities must be analyzed for their behavior when larger than ultimate flows are experienced. This first condition is relatively easy to envision, analyze, and report the findings. The second is that the facilities are not constructed to carry the capacity of the ultimate conditions, but the larger stand alone conditions. This second condition has much more significant ramifications and could result in a study of multiple stand alone condition scenarios as development progresses in a more or less continuous phase over many years.

Construction of facilities with larger capacities than the ultimate condition may lead to ultimate flows which differ from the predicted flows. It is therefore important to limit analysis of the higher stand alone flows on the ultimate condition facilities.

The result of these stand alone scenario assumptions is a significantly higher flow than either existing or ultimate conditions in some of the downstream reaches of the creek, up to the Gerber Road Crossing No. 2. While the potential for these stand alone conditions to actually occur in the future is real, it is not probable due to the significant cost of providing ultimate channel improvements off-site and upstream from the proposed development.

Stand Alone Conditions Results

Predicted 100-year peak flows along Gerber and Elder Creeks for the existing condition and the following stand alone conditions are shown in Tables HY-3 and HY-4:

- Case 1 - Stand alone conditions with Laguna interbasin transfer and without Basin E20.
- Case 2 - Stand alone condition with Laguna interbasin transfer, without Basin E20, and with optimization of the weir structures in the on-site basins.
- Case 3 - Stand alone condition with Laguna interbasin transfer and with Basin E20 with an optimized weir configuration.

Analysis of the potential impacts of the most conservative (Case 1) stand alone conditions scenario must center around the resultant water surface elevations along the improved channels. A study of the resultant water surface elevations indicates that they will be below existing conditions water surface elevations in all cases within the NVSSP area and downstream to Millbrook Circle. This is entirely due to construction of the channel and is a significant benefit to existing residences within the existing floodplain. It is important to note that the deleted interbasin transfer from Gerber Creek to Unionhouse Creek is approximately 370 cfs. Just downstream of the identified diversion points, the Case 1

stand alone flows are approximately 220 cfs above existing conditions. Just downstream of the confluence with Elder Creek, the Case 1 stand alone flows are approximately 160 cfs higher than existing. This indicates that the NVSSP detention basins are designed adequately to mitigate for the impacts of increased runoff and the more rapid conveyance of storm flows due to channelization associated with development within the Specific Plan. In addition, they mitigate for approximately 210 cfs of the 370 cfs existing interbasin transfer flows captured as a result of lowering the channel. At the existing improved channel upstream of Millbrook Circle, Case 1 stand alone flows are only 120 cfs higher than existing conditions.

A short section of previously improved channel from Millbrook Circle to French Road experiences existing 100-year water surface elevations that are 0.1 feet to 0.9 feet above the top-of-bank elevations used in the County hydraulic model. The increased flows predicted for the conservative Case 1 stand alone conditions scenario in this reach of channel indicate a variable increase in water surface elevations from 0.1 feet to 0.3 feet.

The reach of existing channel from French Road to Stockton Boulevard could experience increases in water surface elevations above existing conditions of approximately 0.2 feet to 0.35 feet. An analysis of the hydraulic model's input and results indicates that these predicted increases in water surface elevations appear to be contained within the existing channel banks with the exception of the two critical locations identified by WRD. According to the information below provided by WRD, the stand alone condition results in water surface elevations at or below existing building pads. It should be noted that approximately 0.5 feet of non-damaging flow would occur at a parking lot located at Power Inn Road.

Location	**Existing 100-Yr. W.S. El.**	**Case 1 Stand Alone 100-Yr. W.S. El.**	**Adjacent Building Pads**	**Existing 100-Year Flow**	**Case 1 Stand Alone 100-Year Flow**
D/S Parkway Sec. 2.678	26.5	26.7	27.0	1,985 cfs	2,075 cfs
U/S Power Inn Road Sec. 3.146	29.8	30.1	31.3	1,985 cfs.	2,080 cfs

From Stockton Boulevard to the City limits, the Case 1 stand alone condition water surface elevations are less than the ultimate condition water surface elevations and appear to be below the existing top-of-bank reported in the hydraulic model. The Case 1 stand alone condition water surface elevations may be approximately 0.2 feet higher than existing conditions.

There are several locations where the Case 1 stand alone condition flows will exceed the capacity of the ultimate system channels and culvert, causing flows to escape the banks of the improved channels. This condition occurs only within the vicinity of and downstream of the Laguna Creek interbasin transfer, where flows from Laguna Creek enter Gerber Creek, but are captured in the Gerber Creek system by the lowered channel and cannot leave as they do in the existing condition. This out-of-bank flow condition is a result of the Case 1 stand alone condition flows being considerably higher than ultimate flows.

The Case 1 stand alone condition with the Laguna Creek interbasin transfer results in a slight increase in flows at the City boundary of approximately 90 cfs. This happens because the on-site NVSSP detention basins only attenuate 210 cfs of the 370 cfs capture flow. The efficiency of the modified channel conveys the flood wave downstream, reducing flow time and slightly increasing the peak flows. Flows (370 cfs) which transfer from Gerber to Unionhouse in the existing condition do not do so in the stand alone conditions. This results in the flows in Elder Creek being higher than existing, and the flows in Unionhouse Creek being lower than existing. Both creeks flow to the City boundary at different locations.

Once the Laguna Creek interbasin transfer is eliminated and upstream elements of storage which are an integral part of the ultimate condition are constructed, these out-of-bank flow conditions will no longer occur. These projects are regional flood control facilities which are part of the regional drainage master planning now being pursued by the County WRD. Their implementation may occur at a time when adequate funds are available. However, individual projects will be required (at the Tentative Map stage) to demonstrate that interim conditions operations do not cause increased flood risk.

Stand Alone Conditions Conclusions

Increases in flows result primarily from three conditions in this system:

1. Increased runoff due to increased imperviousness (land development);

2. Increased efficiency of channels which convey flood flows more rapidly downstream, causing peak coincidence; and

3. Capture of interbasin transfer flows by the lowered channels which otherwise exit the system in the existing condition.

The preferred alternative drainage system of detention basins for the NVSSP attenuates the peak flow by the magnitude consistent with that of increased flow from increased imperviousness and from more rapid conveyance of flood flows. It also attenuates much of the "capture flow" increases. It is very clear, therefore, that the capture of interbasin transfer flows which results from the implementation of the channel improvements identified in the DMP results in the increase in downstream flows above existing levels.

The 370 cfs interbasin transfer flow which is captured in the Gerber Creek system translates downstream of the Specific Plan area, partially attenuated by excess system storage, and results in flow increases of 90 cfs to 120 cfs in the downstream system.

The conservative scenario adopted to depict the Case 1 stand alone condition produces flows greater than the ultimate condition. Yet in many locations, Case 1 stand alone condition flows are less than existing flows.

When these Case 1 stand alone condition flows are introduced to a system designed to convey lesser flows, the system is slightly overtaxed. In some cases, these Case 1 stand alone flows which exceed the capacity of the channels will cause out-of-bank flow. The analysis of these impacts indicates that the resultant water surface elevations will be lower than existing condition in all cases upstream of Millbrook Circle due to the channel modifications. In accordance with County standards, all proposed development will need to avoid encroaching into the resultant floodplain, and result in finished floor elevations which are above the 100-year water surface elevations.

Some increased out-of-bank flooding could occur under the assumed Case 1 stand alone condition between Millbrook Circle and Stockton Boulevard.

While the predicted Case 1 stand alone flow at the City boundary increases less than 5%, the maximum impact to water surface elevations of 0.2± feet is less than significant because the existing bank elevations are no less than 1.7 feet greater. The ultimate conditions model results in slightly higher water surface elevations than the Case 1 stand alone conditions in this area due to a higher starting water surface elevation at Morrison Creek.

Identified increases in flows and resultant water surface elevations downstream from the planned channel improvements near Millbrook Circle are then the only identified potential impact from the Case 1 stand alone condition.

In recognition of this impact, the focus of analysis turns to whether it is significant, and if so, what solutions will reduce the potential impacts to less than significant status.

Several optional approaches to this identified impact are:

1. Analyze the downstream impacts to determine their level of significance. The existing downsteam drainage system is complex and runs through many fully urbanized areas. An analysis to determine every area where the Case 1 stand alone condition increase in water surface elevations has an impact along a three plus mile system of main channel, side channels, contributing pipe systems, and associated streets is a very time consuming and costly task.

2. Eliminate or reduce the root cause of the increased flows in Gerber Creek, which is the Laguna Creek interbasin transfer. The project envisioned to do this is a large detention basin on Laguna Creek, upstream of the CCTR. This is a regional project which is beyond the scope of this DMP.

3. Provide mitigation to eliminate or reduce the downstream impacts to a less than significant status. Additional detention capacity constructed along the channel, downstream from the eliminated Unionhouse Creek interbasin transfer could provide that mitigation. This could occur with the implementation of Basin E20 just west of Elk Grove-Florin Road and/or with optimization of the weir elevations for Basins G41 and E24A.

4. A compromise solution utilizing Basins G41, E24A, and/or E20 at their currently planned sizes to reduce the flows as much as practical, and a determination that the resultant water

surface increases downstream are qualitatively less than significant. This solution would be a recognition of the interim status of the condition and allow the County Elder/Gerber Creek DMP and Upper Laguna Creek DMP to continue to define the project that will eliminate the Laguna Creek interbasin transfer. It would also allow the NVSSP planning process to proceed which will ultimately allow development that will pay drainage fees necessary to fund the ultimate solution.

Tables HY-3 and HY-4 show that optional approach No. 3 above can result in peak flow conditions downstream of the project channel improvements which are very near or below existing peak flow conditions. These conditions are met with either optimization of the on-site basin weir configurations (Case 2 stand alone condition), or installation of Basin E20 (Case 3 stand alone condition).

However, it should be noted that additional analysis conducted by Douglas Hamilton, P.E., for the County WRD has determined that installation of Basin E20 will be necessary to mitigate a projected stage increase downstream of the City/County boundary under stand alone conditions.

Supplemental WRD Conclusion

The following information regarding off-site Detention Basin E20 has been provided by WRD and has been included at their request.

Basin E20 is required. In addition to the strict criteria of flow and stage that this report identifies, overall system reliability is a factor. Construction should occur with the initial phases of the NVSSP construction.

The WRD recommends a large basin downstream of the confluence to account for variability in timing of actual floods compared to the design event. As stated in our December 3, 1996 comments, placement of this large basin downstream of the confluence of Elder and Gerber Creeks provides flexibility in the system for timing variability on either creek and in the NVSSP development. System reliability will be maintained with the construction of E20 because the basin can mitigate variations in timing between peak flow and peak stage.

With regard to stage constraints, Basin E20 is most critical in the stand alone condition.

Thus, it is also critical to the wide set of "interim" conditions prior to completion of the ultimate project (which could reasonably be more than twenty years). Moreover, earlier construction of Basin E20 allows flexibility in the "interim" development stages and provides the most flexibility for phased construction of the NVSSP development.

Phased Development Analysis for the Proposed DMP for the NVSSP Area.

Land development within the Specific Plan area will occur over a long period of time, possibly fifteen to twenty years. Improvements to the drainage system are necessary to serve that development as it occurs. The improvements to channels, installation of drainage detention basins, roadway culverts, and other associated aspects of the DMP cannot always occur in small incremental steps directly associated with the size of the land development occurring at any one time. An analysis of potential phasing of facilities is presented to underscore the regional nature of these improvements. Because there are nearly an infinite number of phasing scenarios from the standpoint of what lands will develop at what time frame, the analysis is approached from the interconnected nature of the required drainage improvements, and not from a specific phasing scenario.

Phased Development with Temporary Pumping Facilities

Initially, there is a potential that small, isolated development could occur in certain areas of the Specific Plan by providing temporary detention basins which rely on pumping to operate. It is also possible that isolated areas in the eastern portions of the Plan area could develop and gravity discharge to the existing channels provided they do not increase the flood risk to their immediate and downstream neighbors. This could occur in areas not constrained by the existing floodplain. Detention of drainage to mitigate impacts of this development would be problematic, however, as the depth of required detention basins would require channel improvements. As with the land development, the detention basins would also have to be located outside the existing floodplain. Also, other services, such as sanitary sewer, water, and to a certain extent, roadway improvements, are focused in the western portions of the Specific Plan area, making such isolated development in the eastern portions of the Plan area financially less feasible as a first phase.

Phased Development with Gravity Facilities

Land development anywhere within the Specific Plan requires drainage facilities to serve it. The relatively flat topography of the Specific Plan area and shallow existing creeks dictate that deepening and widening those existing channels is necessary to provide a gravity outfall and to lower the ten-year water surface elevation to meet basic County design standards and good engineering design practice.

Any normal scale urban development project will require channel improvements. Development will probably occur from west to east in the Specific Plan area because of the proximity to other urban services, such as sanitary sewer and water, and because this scenario presents the greatest potential to reduce the initial drainage improvement needs.

The required channel improvements would be from the point of the proposed first phase development, downstream to the existing improved channel near Millbrook Circle, approximately one-half mile west of Elk Grove-Florin Road. One component of any first phase drainage improvement will include improvement of the Elder/Gerber Creek channel from the confluence of the two creeks downstream to Millbrook Circle. This improvement increases the conveyance capacity of the channel, reduces the time of flow, and would result in some small increase in flows downstream, irrespective of any increases in flow as a result of land development. Improvement of this segment alone would not provide any area within the Specific Plan with drainage service. Deepening and widening of some portion of either Elder Creek or Gerber Creek would be necessary to extend service upstream to any first phase developing properties.

Discussion of Phased Development Results

At this time, it is necessary to briefly describe the integral nature of the drainage system and the impacts which are realized with any channel improvement. Basically, channel improvements cause two direct impacts to downstream flows:

1. The increased conveyance capacity results in reduced flow times, which generally increases downstream flows; and

2. The elimination of an existing drainage interbasin transfer of approximately 370 cfs (100-year, 1% chance exceedance storm) to Unionhouse Creek to the south, causing these captured overflow flows to remain in the channel and be translated downstream. This existing condition has long been recognized and was further confirmed by the detailed UNET model developed by the County WRD.

Improvements to the channels are generally necessary to serve any urban land development within the NVSSP area. That land development would result in increased flows which are directly related. These directly related impacts would be increased runoff resulting from increased imperviousness and reduced time of concentration and reduced flow times resulting from the increased conveyance capacity of the channel. This DMP identifies mitigation for these direct impacts as the construction of downstream detention basins. The most westerly on-site Specific Plan detention basin is Basin E24A, just west of Pasallis Lane. First phase construction of all, or a portion, of this basin would require

the construction of the improved Gerber Creek channel from the confluence, upstream to the basin. Construction of this basin would mitigate for the direct impacts of increased conveyance due to channel construction and of increased imperviousness due to land development for first phase projects within the western portion of the Plan, exclusive of the captured Unionhouse Creek interbasin transfer flows.

The hydraulic operation of Basin E24A would require that its capacity be available at the appropriate time in the life of a storm runoff event. This timing is controlled by the inlet weir elevation in the ultimate condition. In a phased condition, it would be necessary to protect the basin from filling too early from smaller flows which produce higher water surface elevations in the absence of channel improvements. It is probable that channel improvements to lower the water surface elevations would be necessary some distance upstream of Pasallis Lane to insure adequate basin operation. These channel improvements upstream of Pasallis Lane would probably introduce an impact on the existing drainage interbasin transfer from Gerber Creek to Unionhouse Creek. A reduction in the water surface elevation in this region, identified in the County WRD UNET model as the location where the overflow occurs, would tend to reduce or eliminate the interbasin transfer. The direct result is that these flows, generated by the 100-year, 1% chance exceedance storm event that now exit Gerber Creek, would be captured and translated downstream. It is this impact which causes the increase in flows above existing levels downstream in the stand alone condition scenario presented in other sections of this drainage study.

Any land development within the western-most regions of the NVSSP area west of the CCTR requires the construction of roadway access. Local roadway access to Gerber Road to the south would require a crossing of Gerber Creek. Generally, roadways are constructed approximately one to two feet below the existing elevation to allow adequate surface drainage into collection systems. To protect any roadways from inundation by frequent storms, it is probable that the channel from just upstream of any new roadway crossing would require improvement. There is only one planned access across the railroad, Waterman Road extension, which would provide access to the north. It is highly unlikely that development would be allowed without two points of access from a safety standpoint. Construction of channel improvements along Gerber Creek upstream of Pasallis Lane would most certainly result in a reduction of the existing water surface elevations which result in the Unionhouse Creek interbasin transfer as identified in the UNET model for the 100-year storm event. This would result in reduction or, more probably, elimination of the interbasin transfer, capturing the 370 cfs flow and translating it downstream.

Construction of the improved Elder Creek channel upstream from the confluence would provide drainage service to the area west of the CCTR, but that development would also necessitate roadway access crossing Gerber Creek to the south as described above,

resulting in the same impact. Extension of the Elder Creek channel improvements further upstream to serve properties to the east becomes even less feasible from a cost standpoint.

Conclusion

This indicates that any phasing plan for the drainage improvements necessary to provide service to even the most westerly Specific Plan areas will trigger the capture of the 100-year Laguna Creek interbasin transfer flows and retain existing flows which now exit Gerber Creek into Unionhouse Creek. This is a direct result of required channel improvements in the area where the interbasin transfer is identified as occurring by the County UNET model. As discussed, it is this capture of the Laguna Creek overflows which causes the increase in flows in the stand alone condition above existing levels at Millbrook Circle. It is obvious that these same flows would be captured in most any phasing scenario.

The impact occurs if channel improvements extend upstream to a point where they impact or eliminate the Unionhouse Creek interbasin transfer. If they do not extend upstream, then there is no drainage service to the NVSSP area. The order of magnitude of the flow components (Laguna Creek interbasin transfer vs. Gerber Creek flows) is such that development phasing would have only a small effect on the resultant flows.

The UNET model developed will provide an excellent base tool to analyze specific impacts at the time development projects are proposed. Several optional approaches were presented in the Stand Alone Conditions Analysis above, to address increases in flows and resultant water surface elevations above existing conditions.

Mitigation Alternatives for Gerber Creek Overflow Conditions Upstream of the NVSSP Area.

Upstream of Gerber Road Crossing No. 1, Gerber Creek winds through an existing pond/wetland area partially created by a low dam constructed across the flow path just upstream from Gerber Road. The existing elevations along a property line, which is the extension of Vineyard Road and forms the easterly boundary of the NVSSP area, are at the same elevation as the dam. Since this point occurs upstream of the dam, the resultant water surface elevation exceeds these ground elevations and much (approximately 70% - 75%) of the flow spills overland to the west into the NVSSP area. As a result, a broad swath across the southeast portion of the NVSSP area (outside of the main Gerber Creek channel) is located within the 100-year floodplain. Reclamation of this floodplain area will be needed to accomodate the proposed NVSSP urban land uses. (See Figure 6.4.B for an illustration of the existing Gerber Creek overflow condition upstream of the NVSSP area.)

Numerous potential phasing scenarios exist for the development of lands located within this existing Gerber Creek overflow path. The County WRD outlined the following three mitigation alternative scenarios in connection with the Gerber Creek overflow upstream of the NVSSP in an internal memorandum dated August 16, 1996.

Mitigation Alternative 1

Channel: Construct a reimbursable, ultimate channel from Gerber Road Crossing No. 2 upstream to Gerber Creek cross-section 4.392, a point approximately 1,800 feet north of Gerber Road Crossing No. 1. This would be a bypass channel drawing peak flows from the existing creek via an overflow weir at the upstream limit of the bypass. Such a bypass channel would be needed to serve ultimate development of the watershed north of Gerber Road Crossing No. 1, while avoiding impacts to existing lakes and wetlands.

Road Crossing: Construct reimbursable, ultimate dimension culverts or bridges at crossings at Gerber Road Crossings No. 1 and No. 2, and at Vineyard Road south of Gerber Road.

Mitigation Alternative 2

Channel: Construct a partially reimbursable bypass channel at the ultimate flowline, through the eastern corner of the NVSSP area. This channel would convey the 100-year peak overflow in the existing condition, and part of the flow in the ultimate condition.

Road Crossings: Construct a non-reimbursable crossing at the proposed extension of Vineyard Road north of Gerber Road, and at any other roads/driveways affected by the path of the bypass channel.

Mitigation Alternative 3

Channel: Construct an interim, shallow, and non-reimbursable bypass channel through the eastern corner of the NVSSP area similar to Alternative 2. This channel flowline would not be at ultimate depth, and would not be considered an ultimate facility. The interim channel could be filled and the land developed when (and if) other development constructs the ultimate channel improvements described as Alternative 1.

Road Crossing: This alternative includes no improvement to existing County crossings. The crossing at Gerber Road Crossing No. 1 would be improved only when upstream development warrants an ultimate crossing.

Conclusion on Mitigation Alternatives

The alternative favored by WRD (Alternative 1) is consistent with the initial assumptions

embodied in this drainage study, and does not, therefore, require additional discussion. The two other alternatives are variations of the same theme and deal with interim conditions.

The high cost of obtaining right-of-way for and constructing ultimate condition channel improvements for approximately 9,400 feet upstream and off-site of the NVSSP area, including ultimate road culvert crossings, as described in Alternative 1, requires that an alternative interim scenario be studied which may provide a more affordable, and therefore attainable, solution.

The high cost of obtaining right-of-way and constructing permanent ultimate bypass improvements, as described in Alternative 2, makes this alternative too costly.

Alternative 3, the alternative solution to temporarily accommodate the flows from the overflow through the southeastern portions of the NVSSP area until off-site channel improvements have been extended by development projects proximate to those channels, provides flexibility for those future developments. If development occurs in the interim time frame, it will be constrained by the overflow floodplain at that time. It must either avoid impacts to that floodplain, or provide interim channel improvements adequate to convey the overflow flows in a more confined manner. These interim improvements would be necessary until such time as ultimate Gerber Creek channel improvements consistent with the favored alternative were constructed downstream from the overflow location. At that point in time, the land constrained by these interim facilities could be reclaimed for urban land uses consistent with the NVSSP.

Project Impacts and Mitigation Measures Related to Hydrology and Flooding.

Drainage

Although the County has not yet adopted a DMP for the overall Elder/Gerber Creek watershed, the WRD has identified a preferred alternative for such a DMP. The preferred alternative includes construction of an interdependent system of channel improvements and detention facilities throughout the watershed which would provide developing lands with adequate urban flood protection, while avoiding adverse flooding and water quality impacts on downstream areas. Hydrologic and hydraulic analyses have confirmed that implementation of WRD's preferred alternative for the Elder/Gerber Creek watershed would achieve the following objectives:

1. The 100-year peak flows resulting from ultimate development in the watershed would not exceed the existing 100-year peak flows on Elder Creek at the downstream City/County boundary; and

2. The maximum water surface in Lower Elder Creek would remain below minimum bank elevation during a 100-year event with ultimate development in the watershed.

Because the County has not yet formally adopted a DMP for the overall Elder/Gerber Creek watershed, the project proponents have developed a DMP for the NVSSP area, which specifically addresses the flood control and stormwater quality management facilities (both on- and off-site) which will be necessary to enable development of the Specific Plan area to proceed. The proposed DMP for the NVSSP area is consistent with the WRD's preferred alternative for a DMP for the overall Elder/Gerber Creek watershed. The DMP for the NVSSP area proposes modifications to the Elder and Gerber Creek channels, and the construction of flood control and stormwater quality detention basins, within and downstream of the Specific Plan area. As a result of the proposed NVSSP DMP, Elder and Gerber Creeks would be deepened to approximately 8 feet, widened to approximately 12-50 feet, and constructed with a meandering naturalized appearance. The modified creek channels within the Specific Plan area would be located within an open space corridor with an average width of 200 feet which will also include a recreational trail system. As a result of the proposed NVSSP DMP, the extent of the 100-year floodplain over the project site would be substantially reduced, reclaiming lands planned for urbanization from the 100-year floodplain, and the 10-year water surface elevation in the creek channels would be low enough to provide gravity drainage service to the proposed project development.

It should be noted that there are minor discrepancies between the drainage parkway and detention basin locations shown on the Specific Plan land use plan (Plate PD-B) and those shown on the NVSSP DMP (Plate HY-E). Evolution of the drainage planning process has resulted in the recommended facility locations shown on Plate HY-E, which are intended to provide necessary drainage improvements while minimizing impacts upon existing land uses. Therefore, the drainage parkway and detention basin locations shown on the Specific Plan land use plan should be revised to be consistent with those shown on the NVSSP DMP.

The proposed NVSSP DMP improvements, when considered in conjunction with other upstream drainage improvements anticipated under ultimate development conditions, would provide adequate capacity to attenuate and convey drainage from the entire drainage shed without adversely affecting downstream areas. This ultimate condition scenario depends upon a complete system of facilities, including detention throughout the

watershed, elimination of the existing Laguna Creek interbasin transfer, and channel and road crossing improvements. Any urban development within the NVSSP area will necessitate the construction of channel improvements from the development area downstream to the existing improved channel near Millbrook Circle (approximately ½ mile west of Elk Grove-Florin Road) in order to provide adequate drainage service to the development area. However, it is possible that certain upstream ultimate drainage improvements may not be implemented for many years. Therefore, hydrologic and hydraulic analyses were conducted to determine whether implementation of the proposed NVSSP DMP improvements under interim conditions, absent implementation of ultimate upstream flood control improvements, would provide adequate urban flood protection to the proposed Specific Plan development without adversely impacting downstream areas. These interim analyses determined that there would be increased 100-year water surface elevations and increased out-of-bank flooding in downstream areas along Elder Creek, resulting in potentially significant flooding impacts, unless off-site Detention Basin E20 (downstream of Elk Grove-Florin Road) is constructed. These impacts would occur under either full (stand alone) or phased development of the proposed NVSSP land uses. The root cause of these increased downstream flood flows was determined to be the capture of Laguna Creek interbasin flows by the proposed Gerber Creek channel improvements within the Specific Plan area, which results in a transfer of these interbasin flows downstream to Elder Creek (eliminating the transfer of these flows to Unionhouse Creek which occurs under existing conditions). The additional detention capacity provided by Basin E20 downstream of the eliminated Unionhouse Creek interbasin transfer would mitigate these impacts.

The County WRD indicates that construction of Basin E20 should occur with the initial phases of the NVSSP construction. Construction of Basin E20 would reduce potential downstream flooding impacts resulting from partial or full development of the NVSSP area to a less than significant level and, as shown on Table HY-4, will reduce 100-year peak flows at the City/County boundary to less than existing flows. In addition, because Basin E20 is located downstream of the confluence of Elder and Gerber Creeks, it provides flexibility and reliability in the overall NVSSP drainage system, because it can accomodate variability in timing of actual floods on either creek compared to the design event, under either stand alone or interim development conditions.

An existing overflow condition along Gerber Creek east of the NVSSP area causes flood flows to spill overland into the NVSSP area, placing a broad swath of the southeast portion of the Specific Plan area within the 100-year floodplain. Development of the proposed NVSSP urban land uses cannot occur in this area until this floodplain area is reclaimed. Such reclamation could be provided by constructing ultimate off-site, upstream Gerber Creek channel improvements to a point approximately 1800 feet north of Gerber Road Crossing No. 1. Alternatively, a new channel (either interim or permanent) could

be constructed across the southeast portion of the Specific Plan to confine the overflow from Gerber Creek in a manner which reduces the extent of the 100-year floodplain over this portion of the site, allowing development of a portion of the proposed NVSSP land uses in this area to proceed.

Development of the proposed NVSSP land uses could result in potentially significant on-site and downstream flooding impacts. These impacts can be reduced to a less than significant level by the timely implementation of the proposed NVSSP DMP improvements, including the construction of Detention Basin E20, and flood control improvements which eliminate or reduce the existing overflow condition from Gerber Creek into the NVSSP area. Individual developments within the NVSSP area should be required to demonstrate that they will be adequately protected from flooding, and that they will not increase flood risks to downstream areas.

Funding for construction of the NVSSP DMP drainage facilities (i.e., land acquisition, channel improvements, detention basins, culverts, bridges and maintenance roads), and for the construction of the drainage parkway trail improvements, has been identified in the Capital Improvement Program (CIP) for the Specific Plan. The Specific Plan indicates that ultimately the detention basins and drainage parkways (channel sections and buffer areas) will be owned by the Sacramento County Water Agency. The detention basins and channel sections will be maintained by the Water Agency, while the buffer areas will be maintained by the Southgate Recreation and Park District. However, the Specific Plan does not identify the funding source or mechanism for land acquisition and landscaping improvements within the buffer area portions of the drainage parkways (outside the channel sections). According to Planning Department staff, it is anticipated that the open space portions of the drainage parkways (outside of the drainage channels) may be required to be dedicated as open space by individual property owners at the time specific development projects are proposed on their abutting properties. Also, it is anticipated that landscaping within the buffer areas may be installed by the Park District as grant monies become available. In order to ensure that the intended plans for the buffer area portion of the drainage parkways are implemented, the Specific Plan should be revised to clearly specify the funding source or mechanism for acquisition of the buffer area lands (i.e., through CIP financing, land dedication by individual abutting property owners, or some other measure), and to clearly specify the funding source or mechanism for construction of the buffer area landscaping improvements (i.e., through CIP financing, by individual abutting property owners, by the Park District, or some other measure).

Surface Water Quality

Development of the Specific Plan project could have potentially significant impacts on Elder and Gerber Creek water quality if not carefully managed. Grading and earthmoving activities associated with development will expose soil to increased rates of erosion, which

could increase the amount of sediment in stormwater runoff discharged downstream. Stormwater runoff from developed areas will also contain oil, grease and heavy metals from roadways and parking lots, and fertilizers and pesticides from parks and landscaped areas, which could degrade creek water quality.

Sacramento County has received an NPDES (National Pollutant Discharge Elimination System) permit from the California Regional Water Quality Control Board pursuant to the Clean Water Act, which requires the development and implementation of comprehensive management programs to reduce stormwater pollution. In order to comply with the NPDES permit, Sacramento County has adopted a New Development Management Program which requires new development to implement Best Management Practices (BMPs) for stormwater quality control. These BMPs, which include both source control and treatment control methods, are described in Volume 5 of the City/County Drainage Manual. Sacramento County has also adopted a Land Grading and Erosion Control Ordinance which establishes administrative procedures, minimum standards of review, and implementation and enforcement procedures for controlling erosion, sedimentation, disruption of existing drainage and related environmental damage caused by activities of clearing and grubbing, grading, filling and excavating of land. Any grading, filling, excavation, storing or disposal of 350 cubic yards or more of soil, or clearing or grubbing of 1 acre or greater of land requires compliance with the standards and requirements of the Ordinance.

The County WRD has provided the following comments on the project in regards to water quality:

> "In order to mitigate erosion and sediment control problems on the project site, the EIR should include mitigation measures requiring compliance with the County's Land Grading and Erosion Control Ordinance. Additionally, because the project size is in excess of five acres a notice of intent (NOI) must be filed to obtain coverage under the State's General Construction Stormwater Permit, this must be done prior to starting construction. As a condition of the General Permit, a Stormwater Pollution Prevention Plan (SWPPP) must also be developed for the project. This program is administered by the State Water Resources Control Board, which can provide all information necessary to complete and file the necessary documents.
>
> Source and treatment control measures are required for this project in accordance with Volume 5 of the Draft City/County Drainage Manual - Manual of Standards for Design of New Development On-Site Stormwater Quality Control Measures.

> Source control measures on the improvement plans shall include provision of a permanent storm drain message "No Dumping - Flows to Creek" or other approved message at each storm drain inlet. Treatment control measures on either commercial or office improvement and/or development plans shall include grass swales or filter strips where appropriate. As a condition for rezoning and prior to development and improvement plan approval the final design of the proposed source and treatment controls shall be approved by the Chief of Water Resources" (Eck, April 10, 1996).

Proposed NVSSP DMP detention facilities will be designed to provide water quality treatment of urban runoff. The provision of these facilities and any additional stormwater quality source and treatment control measures consistent with the Draft City/County Drainage Manual required by the County WRD, and compliance with the County's Land Grading and Erosion Control Ordinance, will reduce the project's impacts upon surface water quality to a less than significant level.

Habitat

Construction of the proposed NVSSP DMP improvements includes excavation of channels and detention basins and construction of a trail system which will significantly impact wetlands and special status species habitat. These impacts are more fully described in the Biological Resources section of this EIR, but can be summarized as follows.

The Biotic Resources Report prepared for the NVSSP project by Sugnet & Associates estimates that 7.4 acres of on-site and 5.6 acres of off-site wetlands (including perennial creek, vernal pool, drainage swale and seasonal wetland types) will be impacted by the NVSSP DMP improvements. Subsequent refinements have been made to the DMP through the drainage planning process (culminating in the proposed DMP configuration shown on Plate HY-E), which will likely result in minor modifications to these reported impact acreages. The Biotic Resources Report also indicates that the NVSSP area, including the Elder and Gerber Creek corridors, provides suitable habitat for numerous special status plant and animal species which could be impacted by DMP improvements. Due to access limitations, determinate surveys for special status species have been conducted on only portions of the NVSSP project site to date. In addition, although well developed riparian zones are not present on the project site, there are short reaches of riparian scrub species along the creek corridors which would be affected by construction of the NVSSP DMP improvements.

The U.S. Army Corps of Engineers (Corps) is responsible under Section 404 of the Clean Water Act for regulating activities which affect wetlands. The U.S. Fish and Wildlife

Service (USFWS) has jurisdiction over federally listed threatened and endangered species under the federal Endangered Species Act. The California Department of Fish and Game (CDFG) has jurisdiction over state listed threatened and endangered species under the California Endangered Species Act. CDFG also regulates proposed modifications to water-courses through the Streambed Alteration Agreement process under Section 1600 of the California Fish and Game Code.

Mitigation strategies recommended in the NVSSP Biotic Resources Report include the following:

- For impacts to vernal pools and seasonal wetlands which represent potential habitat for federally listed invertebrates, construct like habitat off-site at a 1:1 (mitigation:impact) acreage ratio and preserve like habitat off-site at a 2:1 (preservation:impact) acreage ratio, or alternative mitigation required by the Corps through the Section 404 permitting process.

- For impacts to freshwater marsh, drainage swales and perennial creeks, construct emergent marsh habitat in the Elder and Gerber Creek channel bottoms at a 1.3:1 (mitigation:impact) acreage ratio, or alternative mitigation required by the Corps through the Section 404 permitting process.

- Conduct determinate surveys for potentially occurring special status species prior to development. For impacts to special status species identified through the determinate surveys, obtain all necessary permits and implement any mitigation plans required by Sacramento County, CDFG and USFWS.

In addition, proposed policies in the Specific Plan encourage in-kind replacement plantings on an inch-for-inch basis for native trees which must be removed for construction of drainage improvements.

The proposed NVSSP DMP improvements' impacts upon biological resources can be reduced to a less than significant level by: (a) implementing a wetland mitigation plan which acieves no net loss of wetland habitat acreage and values; (b) implementing a special status species mitigation plan developed in cooperation with regulatory resource agencies designed to reduce impacts on any special status species identified through determinate surveys to a less than significant level; and (c) providing in-kind replacement plantings on an inch-for-inch basis for any native trees six-inches dbh (diameter at breast height) or larger which must be removed.

NVSSP Drainage Alternatives Recommended by Others.

Representatives of the Environmental Community

Members of the environmental community, including representatives of the Environmental Council of Sacramento, Urban Streams Council and Native Plant Society, have recommended an alternative to the proposed NVSSP drainage parkway open space plan. The alternative recommends that a wider (600 foot) permanent open space corridor be established along Elder and Gerber Creeks. Although a map has not been submitted to illustrate this alternative, a list of recommended policies pertaining to open space along the creeks has been submitted which provides a conceptual description of this alternative. These recommended policies have been included in their entirety for the readers reference in the Biological Resources section of this EIR. The recommended policies indicate that the width of the open space creek corridor may vary depending on:

- unavoidable physical or man-made constraints occurring in the immediate area;
- quality and quantity of existing and planned habitat;
- presence of species, as well as their sensitivity to human interaction;
- areas required for vegetation regeneration;
- desire for community greenways;
- nature of planned uses adjacent to corridor;
- corridor for wildlife habitat linkage.

However, the absolute minimum width recommended for the open space corridor is 150 feet on each side of the drainage channel outside of easements and detention basins and between detention basins and roads. Representatives of the environmental community indicate that increasing the width of the open space corridor along the creeks would enhance biodiversity, accomodate wildlife movement, sustain healthy ecosystems, mitigate for loss of habitat and open space, and enhance the treatment of urban runoff.

The EIR preparers have concluded that implementation of the currently proposed NVSSP DMP improvements and associated open space corridors along Elder and Gerber Creeks (with an average total width of 200 feet) will reduce the projects impacts related to hydrology and flooding, including impacts upon drainage, water quality and biological resources, to a less than significant level. However, it is acknowledged that provision of a wider open space corridor adjacent to the creeks, as recommended by representatives of the environmental community, could provide additional benefits and further enhancements

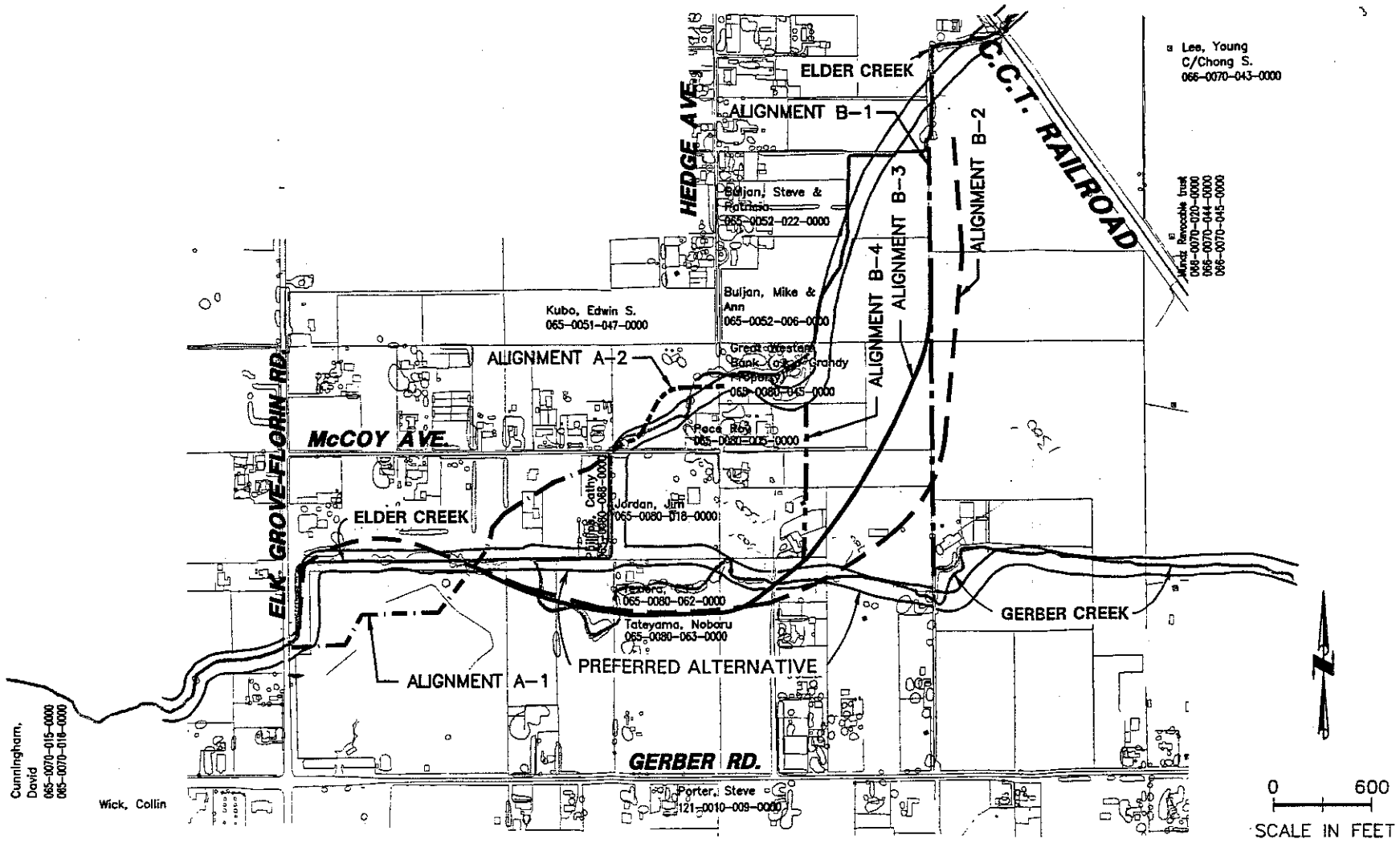
to water quality treatment and wildlife habitat if managed properly.

Local Residents.

In August and September of 1996, four neighborhood meetings were conducted by Sacramento County Planning Department and Water Resources Division staff to discuss the proposed drainage and open space plans for the NVSSP project. During these neighborhood meetings, several local residents suggested alternative alignments for Elder and Gerber Creeks, alternative locations for detention basins and modifications to the width of the open space corridor along the creeks. County Planning and Water Resources Division staff documented these suggested alternatives and qualitatively analyzed them in a report entitled Draft North Vineyard Station Specific Plan Open Space Plan and Drainage Master Plan Public Outreach Report (February 1997). The Public Outreach Report conceptually analyzes and lists the pros and cons of each suggested alternative from hydraulic, open space, land use and other environmental perspectives. The alternative channel alignments suggested by local residents are shown on Plates O and P. These exhibits also show the proposed NVSSP DMP channel alignments (labeled as the preferred alternative) for comparison. Each of the alternative alignments were determined to either be not viable, not warranted, or they raised significant land use policy issues. The Public Outreach Report conclusions are summarized below.

Alignment A-1 proposes the realignment of Elder Creek to its historic channel as depicted in historic aerial photographs. Conclusion: The alternative impacts existing residential and commercial development severing properties and resulting in the need for additional road crossings and easement acquisition. Moving Elder Creek back to its historic alignment has very few benefits. The alternative is not considered to be viable.

Alignment A-2 proposes to realign Elder Creek by moving the channel to the northwest, away from a home owned by Mr. Roy Pace. According to Mr. Pace, the adjacent land is open, without homes or structures in the area of realignment. Mr. Pace has suggested this alternative because he feels that the open space area adjacent to the creek channel is too close to his home. *Conclusion*: Realignment of the drainage channel within the immediate area of Mr. Pace's property is not seen as a significant impact to the proposed DMP. However, the realignment should rejoin the existing channel when leaving the property. It appears, however, that Mr. Pace's proposal (i.e., realignment of the channel so that the proposed open space corridor is moved away from Mr. Pace's home) may not be necessary since the open space portion of the drainage parkway will not be constructed within the immediate area unless Mr. Pace develops his property or an easement for the corridor is obtained with his consent. Therefore, while the alternative is viable, the extra expense of realigning the drainage channel so that the extent of the open space corridor is reduced is unwarranted.



County of Sacramento
Public Works Agency
Water Resources Division
& Planning Department

North Vineyard Station Specific Plan Public Outreach Report

Realignment Suggestions map

PLATE O

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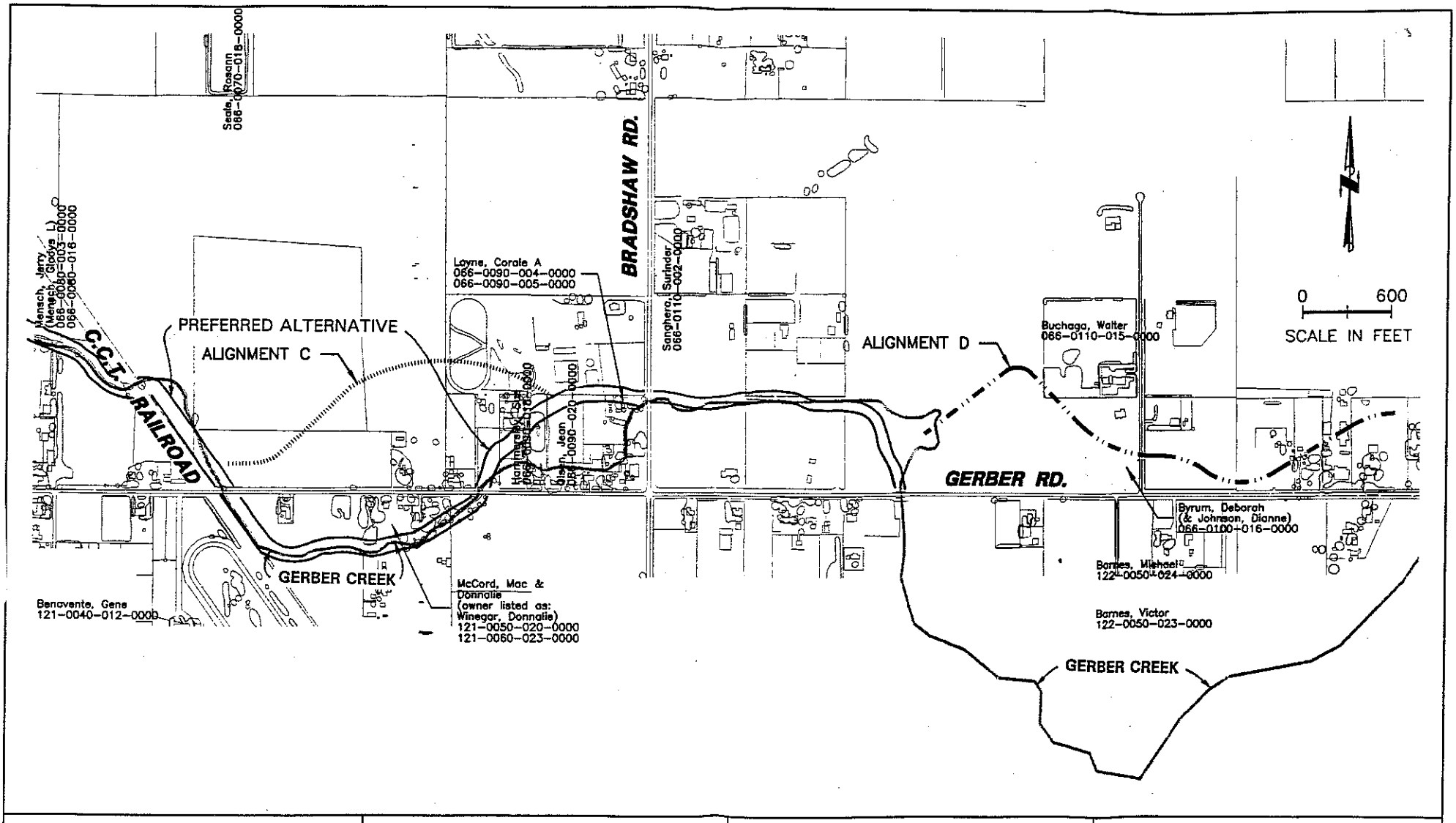


	County of Sacramento Public Works Agency Water Resources Division & Planning Department	**North Vineyard Station Specific Plan Public Outreach Report**	Realignment Suggestions map PLATE P

S:\PROJECTS\CLIENTS\NOVAS\PUBLIC-B

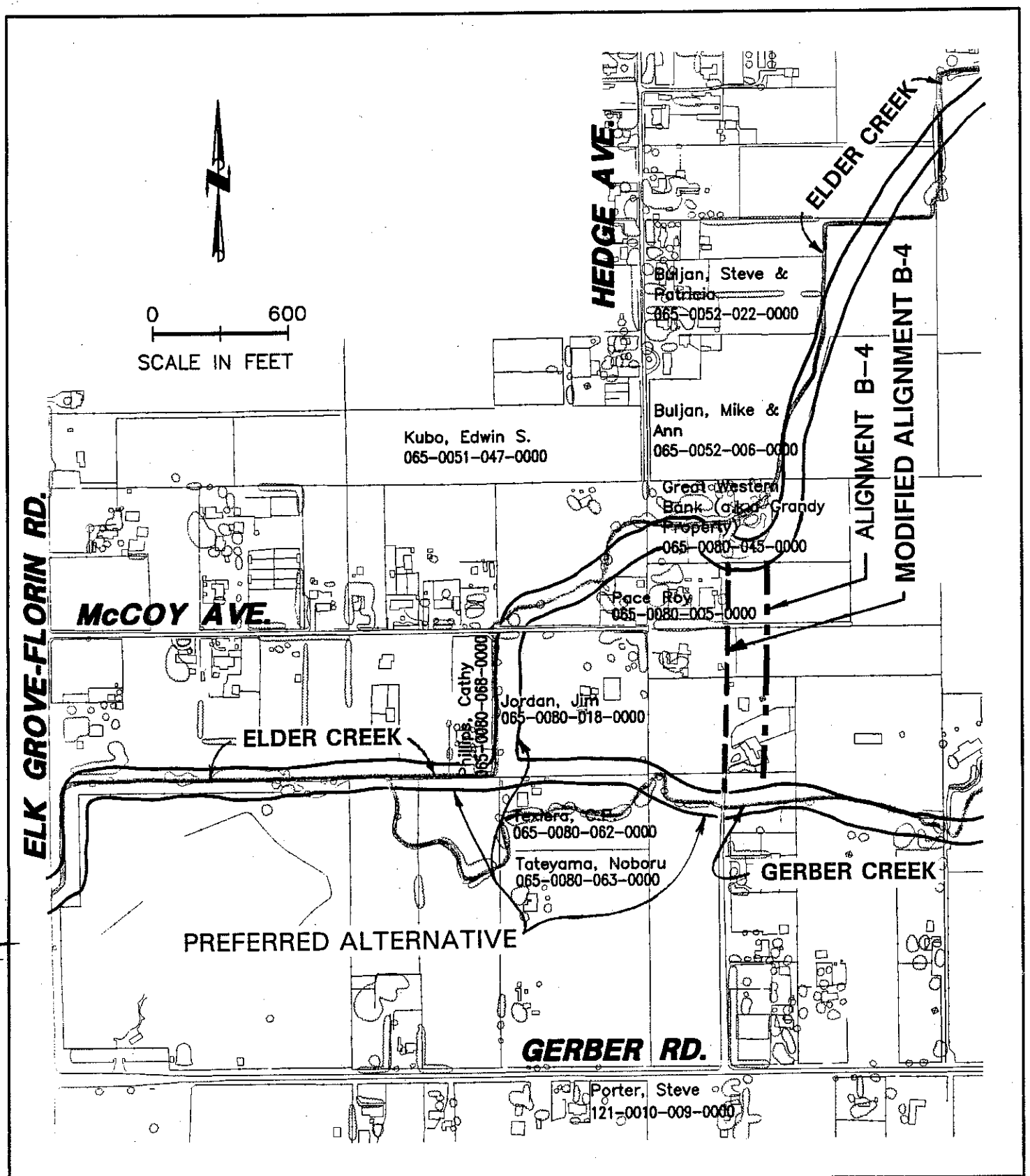
Alignment B-1 proposes to realign Elder Creek from its existing channel of RM 6.619, to meet Gerber Creek (at approximately RM 0.554, existing) by flowing due south. The realigned channel would share right-of-way between property owned by the Buljans' and U.S. Homes. The proposed realignment moves the confluence of Elder and Gerber Creeks toward the east, to a location 1300 feet east of Hedge Avenue. *Conclusion*: The proposed alternative alignment is not considered to be viable. The proposed alternative is a significant departure from the historic/existing channel of Elder Creek. The proposal raises several significant issues regarding creek hydraulics. In addition, the proposed alternative conflicts with General Plan policy regarding the character and treatment of natural streams.

Alignment B-2 proposes to realign Elder Creek in a manner similar to Alignment B-1, but located further east. This proposed alignment moves the existing confluence of Elder and Gerber Creek to the east, to a location 700 feet east of Hedge Avenue. This proposal also includes the relocation of Detention Basin E24A farther to the west of the Jordan and Phillips properties. In addition, the proposal seeks to move the open space corridor located on Mr. Jordan's property to the site of the relocated Basin E24A. *Conclusion*: This proposed alternative alignment is not considered to be viable. The proposal raises several significant land use policy issues. In addition, the proposal may significantly impact or alter creek hydraulics.

Alignment B-3 is very similar to alternative Alignment B-1. The alternative proposes to realign Elder Creek along the eastern edge of the Buljan properties. At the southeast corner of the Buljan properties, Alignment B-3 sweeps southwest to create a new confluence, located 300 feet east of Hedge Avenue. *Conclusion*: This alternative is not considered to be viable. The proposal raises several significant land use policy issues. In addition, the proposal may significantly impact or alter creek hydraulics.

Alignment B-4 proposes to realign Elder Creek due south, starting at the south side of the Buljan's property (at the end of Hedge Avenue), and ending with a new confluence with Gerber Creek east of the Texiara property. This new confluence is approximately 500 feet east of Hedge Avenue. *Conclusion*: The proposal raises several significant land use issues and impacts on existing residential development. The proposal may impact or alter creek hydraulics. The proposed alignment would be considered more viable if the creek was moved to the west to reduce impacts associated with existing structures (as shown by Modified Alignment B-4 on Plate HY-Q). This modified alignment would eliminate the need for a future bridge construction.

Alignment C proposes the realignment of Gerber Creek north of Gerber Road from Gerber Road Crossing No.3 to Gerber Road Crossing No. 4 (between existing Gerber RM 1.961 and the CCTRR at approximately RM 1.450). *Conclusion*: The alternative is not considered to be viable. The alternative results in a significant realignment of Gerber



County of Sacramento
Public Works Agency
Water Resources Division
& Planning Department

North Vineyard Station Specific Plan Public Outreach Report

Suggested Alignment B-4
Confluence No.4 Alignment, 500' East of Hedge Avenue

PLATE Q

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Creek and a deviation from its existing channel. The alternative may impact creek hydraulics and local drainage.

Alignment D proposes realigning Gerber Creek from existing RM 4.349 to RM 2.500, eliminating the "loop" of the creek south of Gerber Road between Gerber Road Crossing No. 1 and Gerber Road Crossing No. 2. *Conclusion*: The proposed alternative raises several significant land use policy issues. The proposal results in a significant realignment of Gerber Creek and a deviation from its historic/existing channel. The proposal may have interim benefits until improvements are made to culverts near the Gerber Road crossing and channel improvements to the south. A similar alternative is being considered as part of the NVSSP DMP. Factors such as cost and impact to property (i.e., severance) within the area reduce the viability of this alternative.

Mitigation Measures:

Implementation of the following mitigation measures will reduce the project's impacts related to hydrology and flooding to a less than significant level.

HY-1. The NVSSP land use plan shall be revised to reflect the drainage parkway corridor and detention basin locations shown on the NVSSP Drainage Master Plan (DMP) contained in the Drainage Study for the North Vineyard Station Specific Plan (MacKay and Somps Engineers, February 1997) (see Plate HY-E of this EIR).

HY-2. In order to ensure that the intended plans for the buffer area portion of the drainage parkway (outside of the drainage channels) are implemented, the NVSSP text shall be revised to clearly specify the funding source or mechanism for acquisition of the buffer area lands (i.e., through CIP financing, land dedication by individual abutting property owners, or some other measure), and to clearly specify the funding source or mechanism for construction of the buffer area landscaping improvements (i.e., through CIP financing, by individual abutting property owners, by the Park District, or some other measure). Future development within the NVSSP area shall ensure that plans for the buffer area portions of the drainage parkways are implemented, consistent with the methods prescribed in the finally adopted NVSSP.

HY-3. Future development within the NVSSP area shall implement the proposed NVSSP Drainage Master Plan (DMP) improvements, including construction of Detention Basin E20 downstream of the Specific Plan area, and construction of a mitigating solution for the existing Gerber Creek overflow condition upstream

of the Specific Plan area, as described in the Drainage Study for the North Vineyard Station Specific Plan (MacKay and Somps Engineers, February 1997) (see Figure 10 of this EIR). Detailed plans for the design and construction of all proposed drainage and water quality facilities, consistent with the NVSSP DMP, shall be submitted to the County Water Resources Division (WRD) for review and approval.

Construction of the NVSSP DMP improvements may be phased, subject to the approval of the County WRD, so long as the project proponent(s) provide hydrologic/hydraulic analyses which demonstrate that the phased improvements will provide adequate urban flood protection to the proposed on-site development, and will not increase flood risks in downstream areas. Such analyses shall verify that the phased improvements will result in no increase in peak 100-year flows on Elder Creek at the City/County boundary, and no significant increased 100-year out-of-bank flows in the existing improved channel downstream of the Specific Plan area.

HY-4. Future development shall comply with the County Land Grading and Erosion Control Ordinance.

HY-5. Future development shall provide stormwater quality source and treatment control measures consistent with Volume 5 of the Draft City/County Drainage Manual. The final design of such source and treatment control measures shall be subject to the approval of the County WRD.

HY-6. Implementation of the proposed NVSSP Drainage Master Plan (DMP) improvements, including construction of Detention Basin E20 and construction of a mitigating solution for the existing Gerber Creek overflow condition upstream of the Specific Plan area, shall not occur until the following items have been submitted to the Sacramento County Board of Supervisors for review and approval.

(a) A wetland delineation for the improvement area verified by the U.S. Army Corps of Engineers.

(b) A detailed mitigation plan for wetlands to be impacted by the proposed improvements which specifically describes the measures which will be implemented to achieve no net loss in wetland habitat acreage and values.

(c) Determinate surveys for the improvement area for potentially occurring special status species.

(d) A detailed mitigation plan developed in cooperation with the regulatory resource agencies (U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service and California Department of Fish and Game) which is designed to reduce impacts of the proposed improvements on any special status species identified in the determinate surveys to a less than significant level.

(e) A tree survey for the improvement area which identifies all native trees six-inches dbh (diameter at breast height) or larger.

(f) A detailed tree replacement planting plan which describes the tree plantings/relocation measures to be implemented to provide in-kind replacement plantings on an inch-for-inch basis for any native trees six-inches dbh or larger which will be impacted by the proposed improvements.

HY-7. Implementation of the proposed NVSSP DMP improvements, including construction of Detention Basin E20 and construction of a mitigating solution for the existing Gerber Creek overflow condition upstream of the Specific Plan area, shall not occur until all necessary permits and/or agreements for the proposed improvements have been obtained from the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service and California Department of Fish and Game.

Water Supply

MacKay and Somps Civil Engineers, Inc. have prepared a *Preliminary Master Water Supply and Water Distribution System Report* (May 1997) for the North Vineyard Station Specific Plan. The purpose of this report was to develop long-term, permanent water supply alternatives and to identify water facilities needed to serve the North Vineyard Station Specific Plan Area (NVSSP Area). Also, this report summarizes the various completed and ongoing master planning studies which include the Plan Area. In addition, according to MacKay and Somps, it is a venue to present additional, more project specific data, such as water demands and planned water system. MacKay and Somps state that the report is intended to be utilized so that the project will meet the water master planning requirements of General Plan Policies CO-20 and CO-21 and Ordinance 18 of the Sacramento Water Agency, as well as to satisfy the requirements of State Law SB 901.

Much of the following discussion is excerpted from the MacKay and Somps report, with minor changes in format. The report, in its original format, is available for review at the Department of Environmental Review and Assessment and the Planning and Community Development Department.

Existing Conditions.

MacKay and Somps (May 1997: 1) has characterized the physical setting and existing water usage in the Plan area, as follows:

> The North Vineyard Station Specific Plan Area is located in the south central portion of Sacramento County, approximately thirteen miles southeast of downtown Sacramento and five miles north of the commercial district of the community of Elk Grove. The 1,595 acre Plan Area is bounded on the north by Florin Road, on the south by Gerber Road, and on the east by the extension of Vineyard Road. Elder Creek roughly constitutes the west boundary of the Plan Area.
>
> Existing land uses within and surrounding the Plan Area are generally Agricultural-Residential and Agricultural with approximately ten small commercial enterprises along the periphery. The Bradshaw Golf Center occupies a twenty acre parcel on the west side of Bradshaw Road. Most all of the existing water demands in the Plan Area, both agricultural and domestic, are met with ground water supplies. Some small portion of the agricultural demand may be met by stock ponds catching local surface runoff.

Regulatory Environment:

To place the project within the context of regional water supply issues and policies, MacKay and Somps has provided a brief discussion of the regulatory setting, as follows:

Sacramento County Water Agency (SCWA) Zone 40

The Sacramento County Water Agency (SCWA) will provide major water facilities such as transmission pipelines, storage reservoirs, pump stations, wells and treatment facilities for the Specific Plan Area. The SCWA is governed by the Sacramento County Board of Supervisors acting as the Agency's Board of Directors. It may contract with the Federal Government under reclamation laws, and with the State of California and the Federal Government with respect to the purchase, sale, and acquisition of water. SCWA may also construct and operate required facilities.

SCWA is responsible for development and implementation of a Water Management Plan for Zone 40. This zone was created for the purposes of constructing facilities for the production, conservation, transmission, distribution, and sale of ground and surface water, for the present and future beneficial use of the lands or inhabitants within the Zone.

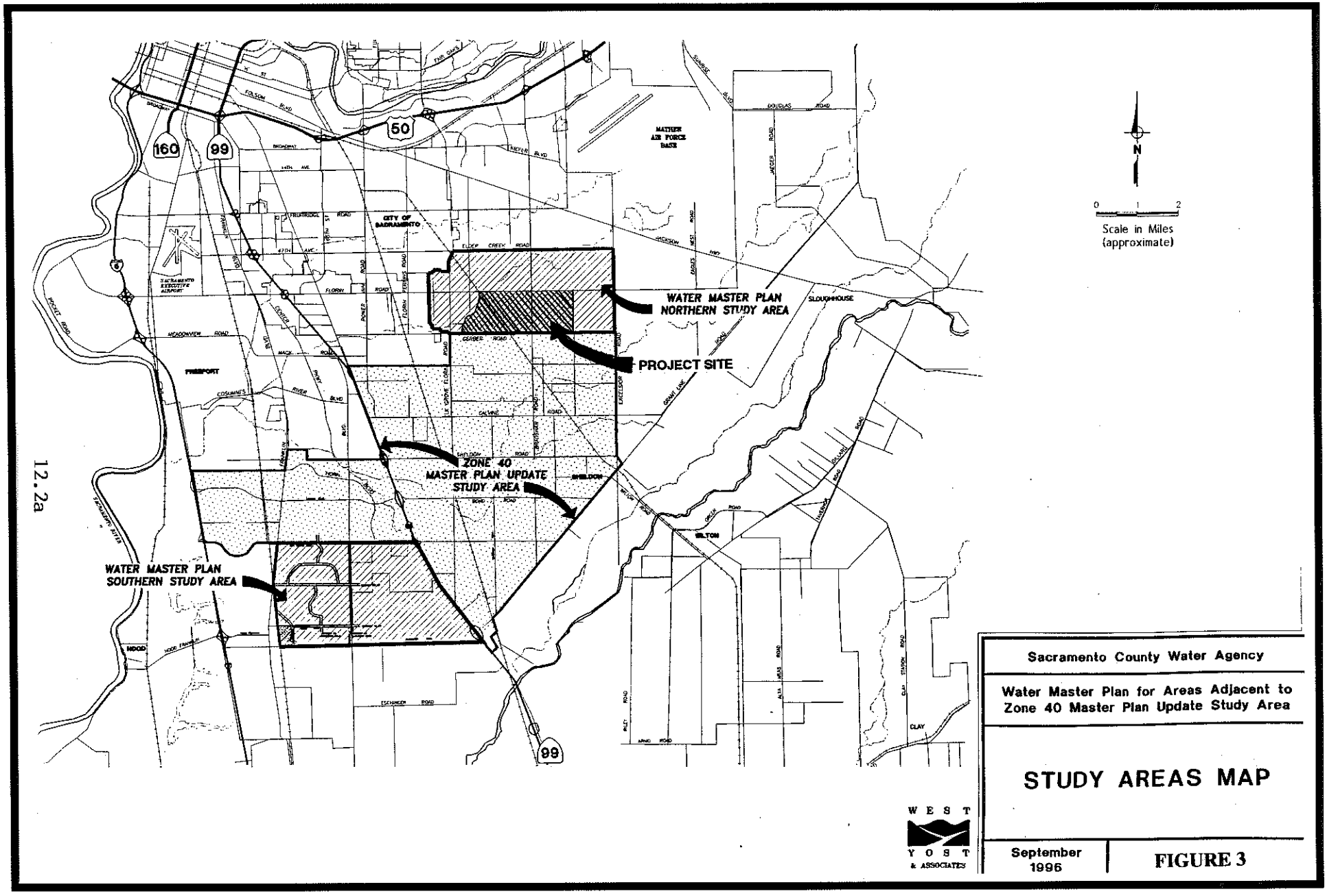
Figure 3 [Plate WS-A of this EIR] was reproduced from the Water Master Plan for Areas Adjacent to Zone 40 Master Plan Update's Report and modified to show the NVSSP project site. This exhibit shows the Study Area of the Zone 40 Master Plan Update and the potential expansion areas which encompass the Specific Plan Area.

Through Zone 40, water is currently supplied to about 9,700 service connections. SCWA provides wells, treatment and storage facilities, and transmission mains. The Specific Plan site is not currently within Zone 40 and would be required to annex to Zone 40 in order to be served by SCWA.

Sacramento County General Plan

The recently adopted County General Plan includes Policies CO-20 and CO-21, which state the following:

CO-20
"In new development areas, as identified in Figure III-1 of the Land Use


WATER MASTER PLAN NORTHERN STUDY AREA
PROJECT SITE
ZONE 40 MASTER PLAN UPDATE STUDY AREA
WATER MASTER PLAN SOUTHERN STUDY AREA
MATHER AIR FORCE BASE
CITY OF SACRAMENTO
FREEPORT
WILTON
HOOD
SLOUGHHOUSE
160
99
50
N
0 1 2
Scale in Miles (approximate)
Sacramento County Water Agency
Water Master Plan for Areas Adjacent to Zone 40 Master Plan Update Study Area
STUDY AREAS MAP
September 1996
FIGURE 3
WEST YOST & ASSOCIATES

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Element, entitlements for urban development shall not be granted until a Master Plan for water supply has been adopted by the Board of Supervisors and all agreements and financing for supplemental water supplies are in place. The land use planning process may proceed, and specific plans and rezoning may be approved."

CO-21
"The Master Water Plan shall include three planning objectives which direct the plan to consider alternate conservation measures, achieve safe yield of ground water supply in conjunction with development in new urban growth areas, and formulate a five year monitoring program to review water plan progress."

The intent of these policies is to assist the County in meeting its objective of having a regionally safe ground water yield.

SB 901, Water Supply Planning Act

The California State Legislature enacted *SB 901, Water Supply Planning Act,* in 1995. State Law SB 901 requires the responsible supplier of water to assess whether the anticipated water demands for a proposed specific plan project are included in the Urban Water Management Plan. The water supplier for the North Vineyard Station Specific Plan is the Sacramento County Water Agency.

Specific Plan

The Citizens Advisory Committee formed to provide structured public participation in the development of the Specific Plan authored twenty-four Guiding Principles. Only one of those Guiding Principles is pertinent to the scope and content of the Water Supply and Water Distribution Master Plan.

4) Provide and maintain an adequate level of public services to the project area, including water, sewer, parks, schools, police, fire, and library services.

City of Sacramento American River Place of Use

The City of Sacramento currently holds surface water rights from the American River. A geographical service area has been assigned for use of this water which extends beyond the current City limits into areas of the

unincorporated County of Sacramento. Known as the City of Sacramento American River Place of Use (POU), this geographical area's easterly boundary runs along Bradshaw Road which bisects the Plan Area. The POU extends north of Florin Road and south of Gerber Road, and includes the portion of the plan westerly of Bradshaw Road. Surface water from the City's contractual source could therefore be utilized within the westerly portions of the Plan Area, approximately 945± acres.

Regional Concerns (Forums Process)

The Sacramento Area Water Forum and the Foothill-Forum Water Group are developing a regional plan to provide safe, reliable, and environmentally sound water supply. Six major "stakeholder groups" are involved in the formulation of the Plan. More than forty-seven organizations represent business, environmental, public, and water district interests in the Sacramento Area Water Forum process which began in September 1993. In April 1995, the stakeholders agreed on a set of sixty-five Agreements-in-Principle which serve to document the progress made to date. In January 1996, a progress report was released detailing several proposals under consideration to meet regional water needs to the year 2030. A proposed draft of recommendations for the agreement dated January 1997 is available for review. A final agreement is expected to be executed in December of 1997.

Existing Water Service and Demands:

As noted by MacKay and Somps, the existing land uses within the Plan area are relatively dispersed and independent. They are served by privately owned and operated wells. MacKay and Somps further state that:

> It can be generally assumed that these wells are relatively shallow, drawing from the upper aquifer. Existing ground water depths in the area range from approximately 90 to 120 feet below ground surface (Source: County Ground Water Model, June 1993).

The Sacramento County Public Works Agency, Water Resources Division (WRD) has conducted an evaluation of groundwater impacts of the Plan area. Their report, entitled *North Vineyard Station Specific Plan, Evaluation of Groundwater Impacts* (January 31, 1997), has been included as Appendix A of the MacKay and Somps report and is incorporated herein by reference. On the basis of the WRD's evaluation, MacKay and Somps state the following:

Existing water demands cannot be precisely estimated. After reviewing black and white and infrared aerial photographs, analysis shows that current water use within the Specific Plan Area is approximately 580 acre-feet of water annually.

In their report, Water Resources Division staff has provided a table which illustrates existing water demands in the Plan area. This table is included below as Table WS-1.

According to MacKay and Somps, there are no public water distribution facilities within the Plan Area. However, the following discussion has been provided relative to the nearest existing public water facilities.

SCWA Zone 40 Facilities

Sacramento County Water Agency facilities exist to the south of the project. Currently, there are two separate systems: one east of Bradshaw Road and one west of Bradshaw Road.

The facilities east of Bradshaw Road were installed to provide service to the Country Creek Estates development along Vineyard Road. They have been expanded to provide service to development in the vicinity of Country Creek Estates. Currently, a 12-inch main exists in Vineyard Road approximately 7,000 feet south of Gerber Road. This system is supplied by three domestic wells.

The existing SCWA system west of Bradshaw Road currently serves the development east of Elk Grove-Florin Road, north of Calvine Road and west of Bradshaw Road. Currently, facilities exist along the Waterman Road extension approximately one mile west of Bradshaw Road, and approximately 4,500 feet south of Gerber Road. This system is tied to the rest of the SCWA system to the south and west. A storage facility exists to the south of the Specific Plan Area along Waterman Road, approximately 8,000 feet south of Gerber Road.

SCWA is designing a water transmission main along Elk Grove-Florin Road to be installed concurrent with the road widening project. The transmission main will extend to Gerber Road and be connected with the Vineyard water system by the end of 1998.

North Vineyard Station Specific Plan
Existing Water Demands

Land Use	Annual Demand Factors	West of Bradshaw		East of Bradshaw		Total Existing Demand (AFA)
		Acres or No. of Units	Demand (AFA)	Acres or No. of Units	Demand (AFA)	
Agricultural	3.50 ac-ft/ac	73.5	257	11.5	40	297
AR Dwelling Units	2.40 ac-ft/du	45	108	29	70	178
Light Industrial	0.00 ac-ft/ac	24.5	0	36	0	0
Active Recreational	4.28 ac-ft/ac	24.5	105	0	0	105
Total			470		110	580

City of Sacramento Facilities

City water main facilities exist to the west and northwest of the project site. The nearest existing facilities are described for background purposes.

Transmission size mains currently exist in Power Inn Road approximately 2.8 miles west of the Specific Plan Area. This consists of a 30-inch main. A 24-inch main exists at the intersection of Florin-Perkins Road and Elder Creek Road, one mile north and one and one-half miles west of the Plan Area (southeast corner of Army Depot).

Current Water Planning:

Long-range water supply planning is ongoing within the Sacramento County region. Among the long-range planning efforts is the Zone 40 Water Supply Master Plan Update, including the Vineyard Water Distribution Study and the Zone 40 Expansion Study. In addition, efforts have been made towards the acquisition of surface water supplies for the area. MacKay and Somps has provided the following discussions concerning water supply planning.

Zone 40 Master Plan Status

In 1987, the Sacramento County Water Agency developed a Zone 40 Master Water Supply Plan Report. The boundaries of that study extended to the southerly boundary of the Specific Plan Area, but did not include it. The 1987 Master Plan had as its main objective the development of a long-term plan for meeting future water needs through a program of conjunctive use of local ground water supplies and surface water supplies. The Master Plan projected surface water availability in 1992. The Master Plan Report included several scenarios for transmission mains, based upon assumptions of where the delivery point would be for future surface water supplies. The study identified the most economical treatment and conveyance method as the purchase of treatment capacity at the City of Sacramento's Fairbairn Treatment Plant on the American River. Several of the base assumptions of the 1987 Master Plan Report have changed since that time.

In 1993, the Sacramento Water Agency developed a County-wide ground water model which provided a tool to determine safe, sustainable yields from ground water sources. Negotiations currently underway as part of the Water Forums process will recommend an appropriate sustainable ground water yield

for the County ground water basin.

In 1993, the Sacramento County Water Agency began an update study for the Zone 40 Water Supply Master Plan Report. The latest technically complete Zone 40 Water Supply Master Plan Update was published in June 1995. The environmental documentation for the Master Plan will begin after completion of the Environmental Documentation for the PL 101-514 Surface Water Contract and Water Forums Agreement. It is anticipated that the Zone 40 Water Supply Master Plan Update will be adopted by the Board of Directors of the Sacramento County Water Agency in late 1998.

The Study Area for this update was basically unchanged from original boundaries and is shown in Figure 3 [Plate WS-A of this EIR]. The Master Plan Update modified the unit demand rates associated with various land uses and established seasonal variations in water use. The Master Plan Update also provided a flexible program of water supply alternatives for the Master Plan Update's Study Area. The water supply alternatives can be implemented and revised as availability and feasibility of water supply sources change in the future. To accomplish this, the Master Plan Update identifies the assumptions and recommendations from the 1987 Zone 40 Master Plan that are no longer valid; evaluates the engineering, institutional, social, financial, and environmental aspects associated with implementing each of the potential sources of water supply; and provides a foundation on which to base future decisions regarding the acquisition, construction, and operation and maintenance of facilities required for the production, conservation, transmission, and distribution of water.

Vineyard Water Distribution Study: The original 1987 Zone 40 Master Water Supply Plan required a supplemental distribution study for the Vineyard Area. In September 1993, the Sacramento County Water Agency developed the Vineyard Water Distribution Study. This report predicted local demands for the areas south of Gerber Road and developed transmission main sizing and required storage facilities for the areas to the south of Gerber Road.

Zone 40 Expansion Study: In late 1995, the Sacramento County Water Agency began a further study, this time to expand the Study Areas associated with the Zone 40 Master Plan Update in response to proposed land planning in areas immediately adjacent to the study area of the Zone 40 Water Master Plan Update. The expanded area involves two individual areas, a northern and southern study area as shown in Figure 3 [Plate WS-A of this EIR]. The Northern Study Area encompasses the North Vineyard Station Specific Plan,

as well as areas to the west, north, and east of the Specific Plan Area.

A Final Draft of this document titled "Water Master Plan for Areas Adjacent to Zone 40 Water Supply Master Plan Update's Study Area" (Adjacent Area Water Master Plan) was published in September of 1996. It includes final demand analysis, an assessment of existing water supplies and treatment facilities, and an evaluation and conceptual design of the Northern Study Area water system. The North Vineyard Station Specific Plan comprises 1,595 acres of the 5,596 acre Northern Study Area, or approximately 28.5%. Environmental documentation of the Water Master Plan for Areas Adjacent to Zone 40 Water Supply Master Plan Update's Study Area will begin after completion of the environmental documentation for the PL 101-514 Surface Water Contract and the Water Forums Agreement.

Surface Water Supply

In several reports back to the Board of Supervisors dated September 5, 1995, November 7, 1995 and July 16, 1996, SCWA outlined the progress made toward acquisition of surface water supplies:

> *Substantial progress has been made toward acquiring surface water supplies which would help to reduce ground water depletion and make possible the integrated use of ground water and surface water supplies in a conjunctive use program. Many of these efforts are a direct result of the success of the Sacramento Area Water Forum's process.*
>
> *The staff of SCWA has been negotiating with City staff as part of the Sacramento Area Water Forum process. Upon agreement to have the City wheel-treated surface water available to Zone 40 for use in areas within the City's POU, draft agreements between the City and SCWA have been developed.*
>
> *SCWA staff is working on the environmental documentation and contract negotiations necessary to allow the SCWA to enter into a long-term municipal and industrial water service contract with the United States Bureau of Reclamation as intended by Congress in Public Law 101-514. The contract will be for 22,000 acre-feet of water annually of which 7,000 acre-feet will be subcontracted to the City of Folsom. The Draft Environmental Impact Report is expected to be complete in*

April of 1997. Finalization of that environmental documentation is expected in the fall of 1997.

Additionally, the Agreement-in-Principle among the Sacramento Municipal Utility District (SMUD), City, and SCWA approved by the County Board of Supervisors on March 8, 1994, will make 15,000 acre-feet of SMUD's Bureau of Reclamation contract water available annually for use within Zone 40. The environmental documentation process being conducted by SMUD is scheduled to be completed when the PL 101-514 Water Contract's is complete or shortly thereafter.

Efforts to acquire "winter" water have also been initiated. On May 30, 1995, the Board of Supervisors approved the submittal of an application to the State Water Resources Control Board for the appropriation of water from the American and Sacramento Rivers. The water would only be available when water is in excess of that dictated by the Hodge Decision criteria, existing riparian water rights, existing appropriated water rights, federal/and state project water, and water needed for Delta outflow requirements and other environmental resource protection criteria. While not available in all years, this water could be used conjunctively with existing ground water supplies to increase long-term ground water yields. Efforts to prepare the necessary environmental documentation are planned.

Specific Plan Water Master Plan.

The Conservation Element of the Sacramento County General Plan contains a Water Resources section which addresses the County's objectives with respect to the use of ground and surface water for residential, commercial, and agricultural purposes. The section assesses how and from where the County intends to secure its future water supply and provides guidelines for the County's policies on water quality, ground and surface water use, and water conservation. Among the goals stated in this section of the General Plan are the following:

- Conjunctive use of surface and ground water to provide long-term water supply for Sacramento residents while maintaining river flows and reservoir levels which protect environmental resources and provide substantial recreational benefits.

- Adequate long-term quantity and high quality of ground water

resources for both human and natural systems.

As noted earlier under the Regulatory Environment discussion, the General Plan also states two policies relative to water supply for areas of new urban growth, CO-20 and CO-21. These policies require that a Water Supply Master Plan be prepared for areas of new urban growth and that such a plan consider alternate conservation measures, achieve safe yields of ground water supply and formulate monitoring programs to review water supply progress. In the following, MacKay and Somps presents a summary of their analysis of water supply needs, facilities, financing and phasing to achieve sufficient water supply to serve the needs of the NVSSP Area, consistent with the above noted policies.

Water Demand Forecast:

According to MacKay and Somps:

> The determination of water demands for the Specific Plan Area provides the basis for water supply and distribution capacity requirements to serve the Specific Plan Area. Annual domestic water demands for the Specific Plan Area have been calculated based upon the water demand factors listed in the Zone 40 Master Plan Update and the Zone 40 Adjacent Areas Master Plan. The demands and unit demands for North Vineyard Station Specific Plan Area appear in Table 2 [Table WS-2 of this EIR]. They are consistent with the values determined in the Zone 40 Adjacent Areas Master Plan Study Report for their portion of the Northerly Study Area.

MacKay and Somps have provided a second table, included in this EIR as Table WS-3, which includes adjustments to demands based on the implementation of conservation measures, and state the following:

> Average Day Demands at buildout are reduced by 19%, as determined in the Zone 40 Master Plan Update, to account for conservation measures.

A list of conservation measures has been provided by MacKay and Somps (see Table WS-4).

In addition to determining Average Annual Demands at buildout, Maximum Day Demands have been calculated:

> Maximum Day Demands are computed from the average annual demands that have been reduced by 19% to account for conservation measures by multiplying by a factor of 2.0. Peak Hour Demands are then calculated at two times Maximum Day Demands for transmission main sizing, or a factor of 1.8

AVERAGE ANNUAL WATER DEMANDS
(ACRE-FEET PER YEAR)

Land Use Category			Unit Water	West of Bradshaw		East of Bradshaw		Totals	
General	Specific	Specific Plan	Factors	Area	Demand	Area	Demand	Area	Demand
Residential	Rural Estates		1.65						
	Single Family, Low Density	SF Res (3-5) - SF Res (4-7)	3.57	550.7	1,966	537.5	1,919	1,088.20	3,885
	Multi Family, Medium Density	Med Res (7-14)	4.58	45.4	208	0.0	0	45.40	208
	Multi Family, High Density	Mult Fam (14-22)	5.09	22.8	116	16.9	86	39.70	202
Commercial and Office	Commercial and Office	Comm., B/P	3.40	34.6	118	4.1	14	38.70	132
Industrial	Utilized	NA	3.35		0	0.0	0	0.00	0
	Unutilized	NA	0.00		0	0.0	0	0.00	0
Public	Public, Quasi-Public, Cemeteries & Misc.	Transit Public Services	1.28	16.0	20	0.0	0	16.00	20
	Recreation - Active	Golf Course, Schools, Parks	4.28	106.8	457	45.9	196	152.70	654
	Recreation - Passive	Drain Parkways, Open Space	0.00	115.7	0	25.5	0	141.20	0
Vacant	Vacant	NA	0.00		0	0.0	0	0.00	0
Agriculture	Agriculture	NA	2.41			0.0	0	0.00	0
Other	Right-of Way	Arterial Streets	0.26	38.9	10	19.1	5	58.00	15
	Mixed Land Uses		3.10	0.0	0	0.0	0	0.00	0
	Rural		0.30	0.0	0	0.0	0	0.00	0
	Undeveloped	Railroad	0.00	14.6	0	0.0	0	14.60	0
TOTALS				946	2,895	649	2,220	1,595	5,116

* Presented in acre-feet of water per acre of land per year.

MAXIMUM DAY AND PEAK HOUR WATER DEMANDS
(MILLION GALLONS PER DAY)

	Water Demand		
	West of Bradshaw	East of Bradshaw	Totals
Actual Average Day Demand (mgd) (1)	2.09	1.60	3.69
Max Day Demand (mgd)	4.17	3.20	7.37
Peak Hour (mgd)	7.51	5.76	13.27
Storage Capacity (mg)	1.26	0.97	2.22

(1) Actual Average Day Demand is reduced by 19%, as determined in the Zone 40 Master Plan Update, to account for conservation measures which are listed in Appendix B of this report.

PHASING OF WATER CONSERVATION MEASURES

PHASE	CONSERVATION MEASURE	DESCRIPTION	START YEAR
Base (Present)	1992 Plumbing Code for New Construction	Requires Installation of water conserving plumbing devices in all new construction.	1992
	Non-Residential Landscape Code	Non-Residential Landscaping is restricted to drought-tolerant planting and efficient irrigation.	1992
	Commercial Metering	Commercial Business billed based on metered water usage.	1992
	Water Conservation Coordinator	A designated staff person to coordinate water conservation efforts.	1992
	Prohibition on Sale of Non-ULF Toilets	Replacement toilets available on the market restricted to ULF only.	1994
Phase I	School Education	Provide written and oral presentation of water conservation benefits and what can be done to support water conservation efforts.	1996
	Conservation Pricing	Tiered pricing that encourages reducing water use when billed based on metered usage.	1997
	Non-Residential Landscape and Indoor Audits	Target high non-residential uses and provide technical support in implementing water conservation.	1997
Phase II	Residential Metering	Bill residential customers on metered water usage.	2000
	Distribution System Audit and Repair	Inspect and repair leaks in the water system.	2005
Phase III	Retrofit Residential Without Meters, With Meters	Water District to install new meter on unmetered houses.	2005
	Residential Audit and Retrofit	Target high-use residential and provide plumbing devices to reduce water usage.	2007
	ULF Replacement	Mandatory replacement of Non-ULF toilets at transfer of ownership.	2007
	Financial Incentives	Provide rebate program to encourage purchasing of water devices.	2010

for storage facility sizing.

Maximum Day Demands are therefore approximately 4.2 mgd for the area west of Bradshaw Road and 3.2 mgd for the area east of Bradshaw Road.

Additional engineering analysis to refine distribution main sizing may be required prior to final design of facilities.

Peak Hour flows used to determine storage requirements are 1.8 times Maximum Day Demands. Peak Hour Demands are therefore approximately 7.51 mgd for the area west of Bradshaw Road and approximately 5.76 mgd.

Finally, an analysis of Fire Flows has also been provided:

Fire flows required are a function of land use. Single-family residential development typically requires 1,000 to 1,500 gallons per minute (gpm), while most multi-family and commercial developments require 3,000 gpm. The network of planned distribution mains can adequately provide these required fire flows. Additional engineering analysis will be necessary prior to final construction plan sizing of mains.

Water Supply:

According to MacKay and Somps, the Water Master Plan for Areas Adjacent to the Zone 40 Master Plan Update's Study Area develops and evaluates water supply facilities to serve the demands in the Northern Study Area. The North Vineyard Station Specific Plan is a portion of the Northern Study Area. The following section, provided by MacKay and Somps, summarizes the water supply information presented in the Areas Adjacent to the Zone 40 Master Plan Update's Study Area for the Northern Study Area.

Zone 40 Expansion Study Content

The Final Draft Water Master Plan for Areas Adjacent to Zone 40 Water Supply Master Plan Update's Study Area (Adjacent Areas Water Master Plan) developed ultimate water supply and distribution demands for the area encompassing the Specific Plan.

The study utilized the unit demand factors and seasonal variations developed in the 1995 Update Report. The report discussed six surface water supply sources and six ground water supply variations. Final alternatives were

narrowed to two for the Northerly Study Area.

According to MacKay and Somps, projected water demands within the Northern Study Area, which includes the North Vineyard Station Specific Plan Area, can be supplied with one of the following two alternatives: 1) all surface water; or 2) a combination of ground water and surface water. They state the following:

> The portion of the Study Area lying entirely within the City's American River POU can be supplied with a firm source of American River surface water. Therefore, it is justified to assume that development within the City's American River POU will be supplied with only surface water in both of these alternatives.
>
> In Alternative 1, surface water would supply the Maximum Day Demand of the entire Study Area, including the North Vineyard Station Specific Plan Area. In Alternative 2, surface water would supply the Maximum Day Demand of the area within the City's POU, and ground water would supply the Maximum Day Demand of the area outside the POU. Demands in excess of the Maximum Day Demand would be met from storage reservoirs in both alternatives.

Surface water and ground water supply options to meet demands in the Northern Study Area, including the Specific Plan Area, have been presented by MacKay and Somps in Table WS-5 They indicate that the demands shown in Table WS-5 have been reduced to account for water conservation of 19% and include unaccounted for water at 7.5%.

The following discussion of the proposed water supply alternatives is provided in their report, where quantities for the Northern Study Area are discussed, the quantity representing the Specific Plan's portion follows in parenthesis:

> <u>Alternative 1: All Surface Water</u>
>
> Under Alternative 1, all water demands within the Northern Study Area, including the Specific Plan Area, would ultimately be met using City's American River POU surface water or other firm source of water conveyed through a new transmission pipeline connecting a new transmission pipeline in Power Inn Road. Supply to the Northern Study Area, including the Specific Plan Area, will be provided in a staged approach. Because the initial area of development is some distance from this pipeline and initial demands would be relatively small, the initial demands would likely be met with a ground water well supply system. The initial facilities would be sized and configured to be

SUMMARY OF SURFACE WATER SUPPLY OPTIONS [1]

Element	Maximum Yield	Average Yield	Reliability	Raw Water Cost
S1. Intermittent "Winter" Water.	9,000 afa	6,750 afa	Low	$ 2.30/af to $15.50/af
S3. SMUD Surface Water Assignment.	100% of yield allocated to Zone 40 Study Area, as defined in the Master Plan Update.			
S4. CVP Water Public Law 101-514 "Fazio" Water.	100% of yield allocated to Zone 40 Study Area, as defined in the Master Plan Update.			
S2. City of Sacramento Expanded POU.	Too speculative to plan for at this time.			
S5. "Firm" Surface Water Transfers from North Sacramento River Basin.	58,000 afa	Up to 58,000 afa	Variable (High to Moderate)	$150/af to $400/af
S7. SCWA Purchase of City of Sacramento Water for Use in Portion of Study Areas with the City POU. [2]	8,700 afa	Up to 8,700 afa	High	$ 9/af to $ 22/af

1 From Table 7-1 of the Zone 40 Water Master Plan Update.

2 Yield equal to the estimated demand at buildout for the portion of the Northern Study Area that is within the City Place of Use. Includes water system loss of 7.5%. See discussion on Element S7 in Section 3, **"Assessment of Existing Water Supplies and Transmission Facilities"** of this report.

easily incorporated into the ultimate system. As the area develops, ground water facilities would be maintained for backup supply purposes after the surface water deliveries begin.

The City is planning to construct a new pipeline in Power Inn Road that will be 60 to 72 inches in diameter. SCWA plans to participate in the upsizing of this pipeline to serve the demands in the Northern Study Area. To provide sufficient capacity to serve the Maximum Day Demands of the Northern Study Area, 16,530 gpm (5,120 gpm for the NVSSP Area), this new pipeline should be about 6 inches in diameter, larger than would be needed to serve just the City demands. In addition, a 16,530 gpm (5,120 gpm for the NVSSP Area) booster pump station would be required near Florin Road at the western boundary of the Study Area to boost treated surface water supplied from the City's system into the Northern Study Area's distribution system, which includes the NVSSP Water Distribution System, to meet Maximum Day Demands.

The surface water supply facilities would be sized to deliver up the Maximum Day Demand, with water also pumped from ground level storage reservoirs as needed to meet the Peak Hour Demands. A total of 8 million gallons (MG) of storage would be required to meet the Peak Hour Demand, fire flow, and emergency storage requirements. It is proposed that two 4-MG reservoirs be provided. At each of these storage reservoirs, 8,265 gpm (2,560 gpm for the NVSSP Area) of booster pumping capacity, for a total of 16,530 gpm (5,120 gpm for the NVSSP Area), would be required to meet the Peak Hour Demand.

Alternative 2: Combination of Surface Water and Ground Water

This alternative assumes that demands in the western portion of the Northern Study Area (west of Bradshaw Road) that is within the City's American River POU are met with surface water, and the eastern portion outside the City's POU with ground water. Surface water supply facilities would be sized to meet the Maximum Day Demand in the POU, and ground water supply facilities sized to meet the Maximum Day Demand in the area outside the City's POU. Peak demands would be met by pumping from storage reservoirs. It is probable that the demands of the initial development west of Bradshaw Road would be served by ground water. At buildout, these ground water facilities would remain as part of the integrated system. The distribution system of the Northern Study Area would be interconnected east and west of Bradshaw Road.

> Six wells would be required to supply the demands in the portion of the Northern Study Area outside the POU based on an equivalent daily production of 1,275 gpm per well (one 1,700 gpm well operating eighteen hours per day). With one well out of service, the remaining five wells would be designed to produce the rated capacity of the treatment facility. It is proposed that a single treatment facility be centrally located with six wells providing water to it. The treated ground water would be discharged to storage reservoirs located on-site, and a booster pump station would deliver the stored water to the distribution system.
>
> Alternative 2 surface water supply facilities for the portion of the Study Area, including the Specific Plan Area, within the City's America River POU include an 8,890 gpm (2,900 gpm for the NVSSP Area) pump station along Florin Road at the western end of the Study Area, and an 8,890 gpm (2,900 gpm for the NVSSP Area) booster pump station at the 4.4 MG storage reservoir. In the portion of the Study Area outside the POU, 15,280 gpm (4,440 gpm for the NVSSP Area) pumping capacity is necessary at the storage tank to meet peak hour conditions. The pumping station would be drawing 7,640 gpm (2,220 gpm for the NVSSP Area) from storage, and 7,640 gpm (2,220 gpm for the NVSSP Area) from the satellite treatment facilities located at the 3.8 MG storage reservoir.

According to MacKay and Somps, the preferred water supply alternative is Alternative 2, the combination of surface water and ground water. They further state that:

> This alternative will meet water demands of initial phases of development and buildout of the Specific Plan Area while lowering ground water levels only an approximate 1.8 feet in the Specific Plan Area. There may be a slight rise in the ground water level in the area of the Elk Grove cone-of-depression as a result of this water supply alternative. Also, the feasibility of Alternative 1, surface water only, is speculative at this time because there is no current firm source of surface water for areas of the portion of the Specific Plan that are east of Bradshaw Road.
>
> The Maximum Day Demand for the area west of Bradshaw Road will be served ultimately by surface water treated at the City's Fairbairn Water Treatment Plant. This water may be a combination of City water and water developed specifically for the County, but treated at the expanded Fairbairn Water Treatment Plant. Peak Hour flows will be met by use of storage facilities located on the project site and eventually within the vicinity of the project. The currently planned point of diversion of new surface water

supplies for the County is near the mouth of the American River. This water will be pumped back to the Fairbairn American River Treatment Plant for treatment.

Phased development of the Specific Plan is expected to commence in the area west of Bradshaw Road. This area will require a first phase conjunctive use ground water supply. This ground water system can ultimately be an integral component of the ultimate system serving the area once surface water is provided. Also, this system could be supplemented by a connection to the existing Zone 40 system to the south of the Specific Plan Area as a back up or emergency source of supply.

The Maximum Day Demand for the area east of Bradshaw Road will be served by a conjunctive use system of both ground water and surface water. The current and planned Zone 40 Vineyard Area systems to the south will eventually connect this area to the rest of the Zone 40 system. Again, Peak Hour Demands will be met by storage facilities.

Ground water in the Plan Area will be extracted from the deeper aquifer and may therefore require treatment for potential excess iron, manganese, and possibly arsenic. Raw water from several wells will be delivered to centralized treatment facilities located at the storage facility sites.

As noted earlier, the Sacramento County Public Works Agency, Water Resources Division has conducted an evaluation of groundwater impacts of the Plan area. According to MacKay and Somps:

Two ground water modeling scenarios are used to determine the reliability of ground water supplies. The first scenario evaluates the incremental impacts of NVSSP water demands on ground water elevations underlying the NVSSP Area and at the Elk Grove cone-of-depression. Incremental impacts are based on the difference in demands from 1990 to buildout levels. The second scenario is a worst case cumulative impact scenario which assumes ground water is used to supply a new urban growth to buildout (2030) of the General Plan Urban Policy Area.

Incremental impacts includes a lowering of ground water elevations in the NVSSP Area by approximately 1.8 feet, and a slight rise in the Elk Grove cone-of-depression as a result of the assumption that surface water would be the only source of water supply for the NVSSP Area west of Bradshaw Road. Impacts associated with this level of decline include an increase in pumping

costs of $0.25 per acre-foot annually within the NVSSP Area.

The cumulative impact scenario shows ground water elevations stabilizing through increased recharge from the American and Sacramento Rivers, and from boundary inflows as ground water levels within the County decline. Under this scenario, the aquifer experiences an approximate 100-foot decline in ground water elevations from 1990 to 2030 stabilized ground water levels. The impacts associated with lowering ground water levels to these levels include in-migration of poor quality water from the deep aquifer system, dewatering of public and private wells, increased pumping costs, land subsidence, and increased rate of movement of ground water contamination.

The six potential surface water supply options which could be considered to meet demands in the Northern Study Area, including the Specific Plan Area, have been listed by MacKay and Somps in Table WS-5. According to MacKay and Somps, of these six supply elements, two were identified for full allocation to the study of the Zone 40 Master Plan Update at buildout, and one is too speculative to plan for at this time. The three remaining surface water supply elements which could be used to meet demands in the Northern Study Area, including the Specific Plan Area, are S1, S5, and S7. Their discussion of each of these remaining elements follows:

S1.Intermittent "Winter" Water

This element involves obtaining surface water entitlements for the diversion of intermittent water from either the Sacramento or American Rivers for use in the Water Master Plan Study Areas. Typically, this water is available during winter months in most years. Estimates of the availability of intermittent flows are being revised due to recent changes in the regulatory environment, including the Central Valley Project Improvement Act, Endangered Species Act, and the ongoing Bay-Delta hearings. For this Water Master Plan, intermittent water is defined as the flows that occur in either the Sacramento or American Rivers that are in excess of all surface water entitlements, instream flow requirements, and other required flows for environmental purposes (i.e., Delta outflow requirements).

S5."Firm" Surface Water Transfers from North Sacramento River Basin

This element involves entering to a long-term agreement for the purchase and transfer of water from other entities that currently hold surface water rights in the north Sacramento River basin. Such surface water transfer opportunities depend on a variety of hydrologic, geographic, environmental, and regulatory

conditions. Regulations pertaining to transfers are currently evolving due to recent changes in the regulatory environment, including the Central Valley Project Improvement Act, Endangered Species Act, Clean Water Act, and the ongoing Bay-Delta hearings.

S7.Agency Purchase of City of Sacramento Water

The City has entitlements to 81,800 afa of Sacramento River water and 230,000 afa of American River water. The water must be used in the currently defined Place of Use (POU) for each water source. The POU for the Sacramento River water is the current City limits, and for the American River water extends beyond the City limits to cover adjacent unincorporated portions of the County. Approximately 3,000 acres of the Northern Study Area is located within the American River POU. This water supply element involves the purchase of City surface water supplies by SCWA for use only in the portion of the Northern Study Area that is within the City's American River POU.

According to MacKay and Somps, the ground water supply elements identified in the Zone 40 Master Plan Update which could be used to meet demands for the Northern Study Area, including the Specific Plan Area, include element G1, Additional Ground Water, and elements G6/G7, Injection. They further state that:

> To be consistent with the 1993 Vineyard Water Distribution Study, published as Appendix K in the Master Plan Update, it has been assumed that all ground water supplied to this Study Area would be drawn from the deep aquifer, and would be treated for removal of iron, manganese, and possibly arsenic. Water from this aquifer frequently requires treatment for iron and manganese to meet state drinking water standards. Wells which are integrated into the supply system would thus be tied to centralized satellite treatment facilities prior to discharge of well water into the distribution system.

MacKay and Somps has provided the following discussion of the two ground water supply options, as follows:

G1. Zone 40 Additional Ground Water Pumping Capacity

This element involves the development of additional ground water production capacity within the Water Master Plan Study Areas. Presently, ground water is the sole source of long term supply to this Study Areas and to Zone 40. An average annual pumping rate of approximately 0.76 afa per acre has been

determined to be the sustainable extraction rate. Additional ground water pumping capacity within the Study Areas can be developed for:

1. the required peaking capacity needed to meet projected maximum day demands;
2. conjunctive use operations whereby the additional capacity can be used to meet future water demands in the event of shortages resulting from other water supply sources; and
3. an interim source of additional water to be used until other water supplies are made available.

G6. Injections Wells Using Intermittent Flows

This water supply element involves injecting treated surface water into the ground water basin during the winter months and recovering the water for use during periods of high demand in the summer months. The water resource for injection would be intermittent flows from either the Sacramento or American Rivers.

The intermittent water would be treated and injected into the aquifer system through wells located within the Study Areas and recovered later through municipal pumping. As reported in the Master Plan Update, it is anticipated that except for minor treatment and conveyance losses, all of the injected water can later be recovered.

Ground water levels within the Study Areas have fallen to about 100 feet below land surface with seasonal fluctuations of approximately 10 feet. The lowered water levels provide significant aquifer storage capability for the recharged water. The potential also exists for the use of dual purpose wells for recharge and recovery. This would require that the wells be used for extraction in summer months, then re-operated for use as injection wells when excess surface water is available during the winter and spring months.

Injection of surface water through wells is subject to California Department of Health Services (DHS) approval, and would require treatment prior to injection. Treatment of the surface water would also be required prior to injection to prevent clogging or binding in the well casing (which can severely impede the injection rate). The surface water needs to be treated for the removal of suspended solids, dissolved oxygen, and organic material. Treatment process requirements are similar to that for conventional surface water treatment which include filtration/sedimentation and disinfection, and

this water supply element would thus need to be combined with treated surface water element.

G7. Injection Wells Using Transfer Water

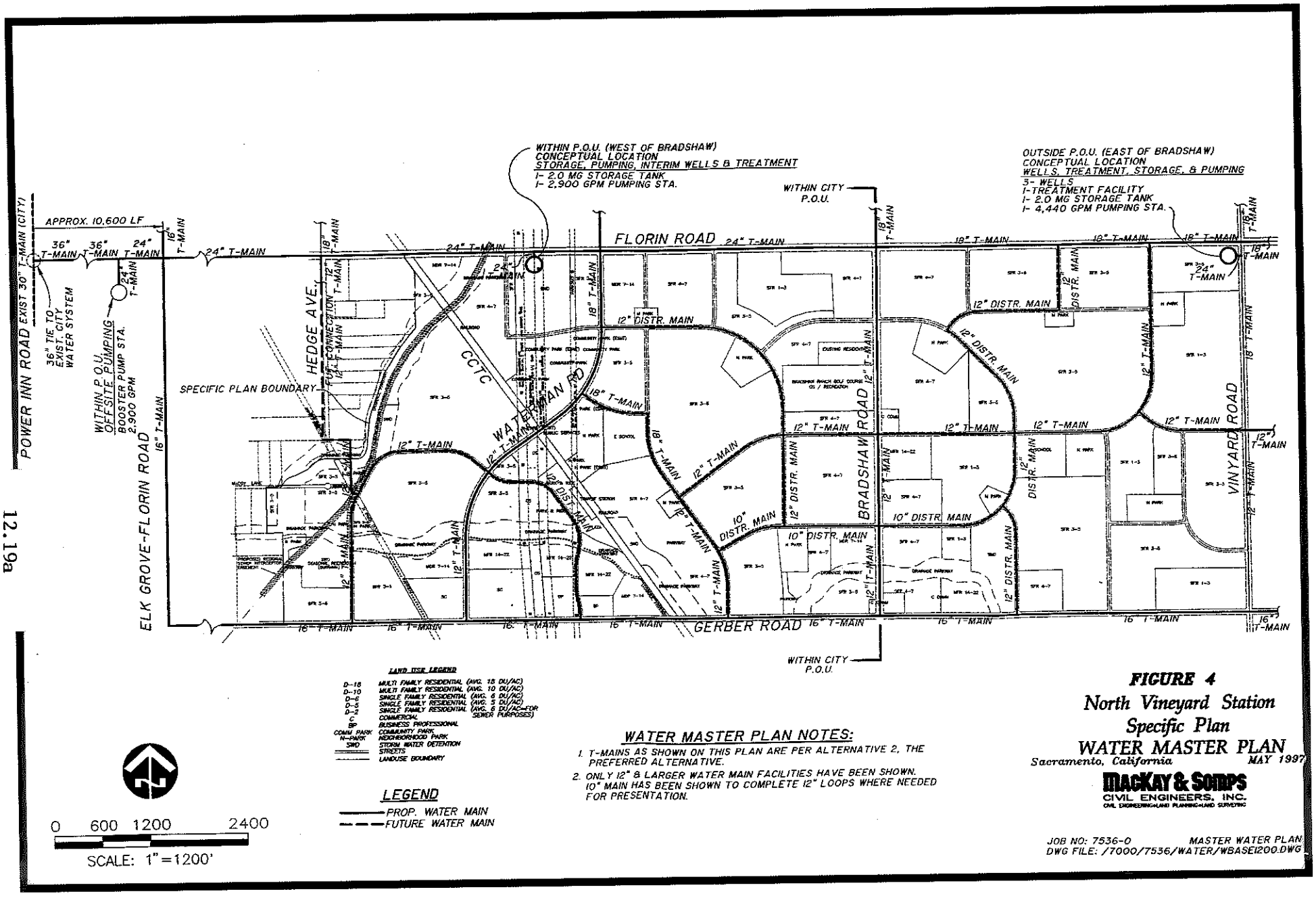
This water supply element involves recharging the ground water basin with surface water during the winter months, and recovering the water for use during periods of high demand in the summer months. The source of the surface water will be from transfers from either the Sacramento or American Rivers. The surface water will be recharged into the aquifer system through injection wells located within the Study Areas and later recovered through municipal pumping. As reported in the Master Plan Update, it is anticipated that except for minor treatment and conveyance losses, all of the injected water can later be recovered.

Ground water levels within the Study Areas are as much as 100 feet below land surface with seasonal fluctuations of approximately 10 feet, thus providing adequate aquifer storage capability for the recharged water. In addition, the potential exists for the use of dual purpose wells for recharge and recovery. The wells would be used for extraction in summer months, then re-operated for use as injection wells when excess surface water is available during the winter months.

Well injection of surface water is subject to DHS approval which normally requires treatment prior to injection. To prevent clogging or binding in the well casing (which can severely impede the injection rate), treatment of the surface water is also required prior to injection. Specifically, the surface water needs to be treated for the removal of suspended solids, dissolved oxygen, and organic material. Treatment process requirements are similar to conventional surface water treatment, including filtration/sedimentation and disinfection, and this water supply element would thus need to be combined with a treated surface water element.

Water Distribution:

According to MacKay and Somps, delivery, storage and treatment systems for the area were planned and tentatively sized as part of the Zone 40 Adjacent Areas Water Master Plan report. These facilities are illustrated in Plate WS-B. The following description of the facilities has been provided by MacKay and Somps:


WITHIN P.O.U. (WEST OF BRADSHAW)
CONCEPTUAL LOCATION
STORAGE, PUMPING, INTERIM WELLS & TREATMENT
1- 2.0 MG STORAGE TANK
1- 2,900 GPM PUMPING STA.
OUTSIDE P.O.U. (EAST OF BRADSHAW)
CONCEPTUAL LOCATION
WELLS, TREATMENT, STORAGE, & PUMPING
3- WELLS
1-TREATMENT FACILITY
1- 2.0 MG STORAGE TANK
1- 4,440 GPM PUMPING STA.
WITHIN CITY P.O.U.
APPROX. 10,600 LF
POWER INN ROAD
EXIST 30" T-MAIN (CITY)
36" T-MAIN
36" T-MAIN
24" T-MAIN
36" TIE TO EXIST. CITY WATER SYSTEM
WITHIN P.O.U. OFFSITE PUMPING BOOSTER PUMP STA. 2,900 GPM
ELK GROVE-FLORIN ROAD
HEDGE AVE.
FUT. CONNECTION
SPECIFIC PLAN BOUNDARY
FLORIN ROAD
CCTC
WATERMAN RD
BRADSHAW ROAD
VINYARD ROAD
GERBER ROAD
12" DISTR. MAIN
10" DISTR. MAIN
12" T-MAIN
18" T-MAIN
16" T-MAIN
24" T-MAIN
LAND USE LEGEND
D-18 MULTI FAMILY RESIDENTIAL (AVG. 18 DU/AC)
D-10 MULTI FAMILY RESIDENTIAL (AVG. 10 DU/AC)
D-6 SINGLE FAMILY RESIDENTIAL (AVG. 6 DU/AC)
D-5 SINGLE FAMILY RESIDENTIAL (AVG. 5 DU/AC)
D-3 SINGLE FAMILY RESIDENTIAL (AVG. 6 DU/AC-FOR SEWER PURPOSES)
C COMMERCIAL
BP BUSINESS PROFESSIONAL
COMU PARK COMMUNITY PARK
N-PARK NEIGHBORHOOD PARK
SWD STORM WATER DETENTION
STREETS
LANDUSE BOUNDARY
LEGEND
PROP. WATER MAIN
FUTURE WATER MAIN
0 600 1200 2400
SCALE: 1"=1200'
WATER MASTER PLAN NOTES:
1. T-MAINS AS SHOWN ON THIS PLAN ARE PER ALTERNATIVE 2, THE PREFERRED ALTERNATIVE.
2. ONLY 12" & LARGER WATER MAIN FACILITIES HAVE BEEN SHOWN. 10" MAIN HAS BEEN SHOWN TO COMPLETE 12" LOOPS WHERE NEEDED FOR PRESENTATION.
FIGURE 4
North Vineyard Station Specific Plan
WATER MASTER PLAN
Sacramento, California
MAY 1997
MACKAY & SOMPS
CIVIL ENGINEERS, INC.
JOB NO: 7536-0
MASTER WATER PLAN
DWG FILE: /7000/7536/WATER/WBASEI200.DWG

12.19a

Storage and Treatment Facilities

Storage facilities consisting of 2.0 million gallon reservoirs are proposed which will provide for Peak Hour and Fire Flow Demands. A total of eight million gallons of storage is necessary for the Northern Study Area. The North Vineyard Station Specific Plan requires a total of 2.2 million gallons of storage. Each tank site will include booster pumps to provide adequate pressures to the system. These storage facilities are planned for two locations within the Northern Study Area: one west of Bradshaw Road, and one east of Bradshaw Road. Locations for these facilities would be near the northern boundary of the Specific Plan.

Treatment facilities are proposed at the site of the storage facilities. As previously described, each will be served by a remote water well field of three to six wells located within approximately 1,000 feet the treatment facility. Raw water will be fed directly to the treatment facility from these wells. The treatment facility, providing primarily oxidation and filtration, will feed the storage tanks.

Transmission Mains and Supplemental Booster Pumps

Transmission mains are normally 12-inch diameter and larger. The transmission mains shown on the Master Water Plan provide for a major east/west main along Florin Road, a lesser main in Gerber Road, and north/south mains along Elk Grove-Florin Road, Waterman Road, Bradshaw Road, and Vineyard Road. Lesser transmission mains generally grid the site in the proposed collector roadways. Distribution mains are also shown on the plan to complete the grid. Master planned transmission mains are funded by Zone 40, while distribution mains are not.

The master planned system proposes installation of booster pumps. One large booster pump is proposed along the transmission main along Florin Road at the edge of the service area. This station will have an ultimate capacity of approximately 8,890 gpm (2,900 gpm for NVSSP). Also, booster pumps with ultimate capacities of 15,280 gpm and 8,890 gpm (4,440 gpm and 2,900 gpm for NVSSP) will be provided at the east and west storage sites, respectively. The North Vineyard Station Specific Plan demands are shown in Table WS-3. The North Vineyard Station Specific Plan requires a total of 10,240 gpm of booster pumping capacity.

Raw Water Facilities

Ground water extracted from municipal wells will provide conjunctive use supplies. Wells are anticipated to be installed in clusters surrounding the proposed storage and treatment facilities. It is expected that up to six wells will feed each treatment facility. Raw water from the wells will be piped directly to the treatment facility. The expected size of these lines is approximately 12-inch diameter. These raw water lines will be funded by standard Zone 40 fees.

Possible Connections to Existing Systems

Zone 40 Vineyard System

The Adjacent Areas Water Master Plan addresses connections southward to the existing Zone 40 system. During initial phases of construction, it is probable that connections to this system would enhance service to both the North Vineyard Station Specific Plan and the exiting Zone 40 system to the south. No sizing has been proposed, but the nearest north/south mains are 12-inches in diameter. It is expected that these mains would be extended at that same size. SCWA is designing a 12-inch diameter main along Elk Grove-Florin Road to Gerber Road. SCWA plans to have this main in place by the Fall of 1998.

City of Sacramento System

The City's existing 30-inch pipeline at Power Inn Road has some available capacity to serve initial development in the Northern Study Area. The City plans to construct a new pipe line in Power Inn Road which could be up-sized to provide ultimate capacity to the Northern Study Area. This new main would be approximately 60-inches to 72-inches in diameter. Extension of a main along Florin Road from Power Inn Road to the boundaries of the North Vineyard Station Specific Plan would be necessary to provide surface water supplies.

Phasing Considerations.

The phasing of proposed development within the Specific Plan Area will dictate the feasibility of implementing the Water Supply Master Plan. According to MacKay and Somps:

Development within the Plan Area may begin in the construction year

> immediately following adoption of the Specific Plan document. Because of the physical layout of many of the other infrastructure services, such as sewer and drainage, it is anticipated that development may commence in the westerly portions of the Plan Area. This Area is within the City American River POU which is ultimately planned to be supplied with 100% surface water. Because of the estimated costs of providing surface water to the Northern Study Area, an initial, possibly interim, alternative is necessary to allow any approved development to proceed.

As such, MacKay and Somps suggests that a more feasible alternative approach is to develop a more localized supply and distribution system which is an increment or component of the larger master planned system:

> This system could consist of the planned storage facility, including booster pump, a ground water treatment plant, and a field of wells to initially feed the storage reservoir and system. This system could be supplemented by a connection to the existing Zone 40 systems to the south of the Plan Area as a back-up or emergency measure. It is possible that additional phases of development could extend smaller diameter lines to the existing City system as a supplement to the ground water supply.

The timing of construction of regional facilities is also pertinent. According to MacKay and Somps:

> Additions to the capacity of the City treatment plant, extension of the ultimate transmission main system connecting to the City transmission system, potential enhancements to that existing City transmission main system, installation of a phased booster pump station, and potential installation of storage facilities are significant capital improvements which will require significant time and effort to design and construct. The estimated cost of those facilities could exceed $30 million. These costs in time and money are too great to be feasible for initial development. Initial development in the Specific Plan should rely on ground water facilities which will become an integral part of the ultimate system.

Capital Facilities Plan.

As provided by MacKay and Somps, this section describes the planned SCWA Zone 40 Facilities, as well as surface water delivery needs for buildout of the Specific Plan Area. MacKay and Somps has identified the project specific system requirements, based on the

water demand forecasts. The SCWA Zone 40 Capital Facilities to meet the specific system requirements are also identified. According to MacKay and Somps, the system facilities described in this section are based on either the ultimate SCWA Zone 40 system facilities or a logical phased portion of the system as presented as Alternative 2, the Preferred Water Supply Alternative.

Specific System Requirements:

MacKay and Somps has provided Table WS-6, which identifies SCWA Zone 40 system requirements and which they used as the basis for determination of the facilities required to supply the buildout of the Specific Plan Area. The total SCWA Zone 40 North Expansion Area system requirements are also identified to provide a comparison. According to MacKay and Somps, the basis for determination of specific system requirements on Table WS-6 are as follows:

1. Average Day Demand: Based on Table WS-3 (includes conservation)
2. Maximum Day Demand: Two times Average Day Demand
   Supply source are sized to serve this demand.
3. Peak Hour Demand for Storage: 1.8 times Maximum Day Demand
   Peak Hour for Transmission Mains: 2.0 times Maximum Day Demand
4. Storage Requirement: Equal to the sum of: four hours of the Peak Hour Demand minus the Maximum Day Demand, a fire flow of 3,000 gpm for three hours, and an emergency storage volume equal to 1/3 of the Average Day Demand.
5. Number of Wells: Determined by Maximum Day Demand divided by 1,275 gpm.
6. Booster Pump Requirements:
   a. Surface Water Delivery: Use Maximum Day Demand
   b. Storage: <u>Within POU</u>: Use Maximum Day Demand. This equals one-half of the Peak Hour Demand; the other one-half is provided by the surface water booster pump in a. above.
      <u>Outside POU</u>: Use Peak Hour at two times Maximum Day Demand.
7. Transmission Main Requirements: Per Alternative 2 of Areas Adjacent to Zone 40 Study and staff comments. (See Plate WS-B.)
8. City of Sacramento System Requirements:
   a. Purchase of Capacity at City WTP: Maximum Day Demand
   b. City Transmission Main Upgrade: Unknown at this Time

SCWA ZONE 40 SYSTEM REQUIREMENTS

Item	Within POU, West of Bradshaw Surface Water Delivery			Outside POU, East of Bradshaw Groundwater Delivery		
	N. Vinyard Portion	Z40 North Expansion Area Total	N. Vinyard % of Total Exp. Area	N. Vinyard Portion	Z40 North Expansion Area Total	N. Vinyard % of Total Exp. Area
1A. Average Day Demand (mgd)	2.09	6.38	33%	1.6	5.5	29%
1B. Average Day Demand (gpm)	1,450	4,445	33%	1,110	3,820	29%
2A. Max Day Demand (mgd)	4.18	12.76	33%	3.2	11	29%
2B. Max Day Demand (gpm)	2,900	8,890	33%	2,220	7,640	29%
3. Storage Requirement (mg)	1.26	4.4	29%	0.97	4.00	24%
4. Wells at 1275 gpm	---	---	---	1.74	6	29%
5. Booster pump Requirements						
A. Surface Water Delivery (gpm)	2,900	8,890	33%	---	---	---
B. Storage (gpm)	2,900	8,890	33%	4,440	15,280	29%
5. Zone 40 Transmission Main Reqm'ts		See Figure 4			See Figure 4	
6. City of Sacto. System Reqm'ts						
A. Purchase of Capacity at City WTP (mg)	4.18	12.8	33%	---	---	---
B. City Transmission Main Upgrade	Unknown at this time			---	---	---

Zone 40 Capital Facilities:

According to MacKay and Somps:

> The required Capital Facilities are based on specific system requirements. These facilities will support buildout of the Specific Plan Area. The Capital Facilities must be sized in standard increments, as well as represent a logical phased component of the ultimate system.

The Capital Facilities are described below and are identified by MacKay and Somps on the Water Master Plan (Plate WS-B).

Facilities Within the City POU (West of Bradshaw Road)

Proposed facilities within the City POU are described below and are summarized on Table WS-7.

1. Construction of a 2 mg storage reservoir with a 2,900 gpm booster pump station. The ultimate Northern Study Area storage requirement is 4.4 mg with an 8,890 gpm booster pump station.

2. 36"/24" off-site T-main construction east along Florin Road from Power Inn Road to the Specific Plan. (See Plate WS-B)

3. 12" to 24" on-site T-mains per the Zone 40 Expansion Study and as indicated by SCWA staff. (See Plate WS-B)

4. On-site distribution mains required to complete the transmission grid. (See Plate WS-B)

5. Purchase of treatment capacity at the City water treatment plant of approximately 4.2 mgd. The ultimate Northern Study Area requirement is 12.8 mgd.

According to MacKay and Somps, it is not known at this time whether the incremental increase to the City of Sacramento T-main system is required to deliver 4.2 mg of surface water to the Specific Plan Area. They further state that:

> This will be determined through future coordination and analysis of the Water Master Plans between the City of Sacramento and SCWA.

The City of Sacramento has recently completed a Water Distribution Master Plan. Included in this analysis is the transmission main upgrade(s) to deliver surface water from the Fairbairn Treatment Plant to southern City areas, as well as the SCWA Zone 40 system.

Facilities Outside the City POU (East of Bradshaw Road)

Facilities outside the City POU are described below and are summarized on Table WS-7.

1. Construction of a 2 MG storage reservoir with a 4,440 gpm booster pump station to provide peak hour and fire flow. The Northern Study Area ultimate requirement is 4 mg of storage and a 15,280 gpm booster pump station.

2. Phase I construction of three wells at approximately 1,275 gpm each: two wells will provide the Maximum Day Demands, and one well will provide back up. The Northern Study Area ultimate capacity is six wells.

3. Phase I construction of a treatment facility capable of treating 3.2 mgd with back-up, as determined by the County of Sacramento Water Resources Division staff.

4. 12-inch to 24-inch on-site T-mains per the Areas Adjacent to Zone 40 Study and as indicated by SCWA staff. (See Plate WS-B)

5. On-site distribution mains required to complete the transmission grid. (See Plate WS-B)

Facilities to Support Initial Phases of Development within the City POU (West of Bradshaw Road)

According to MacKay and Somps:

> It is important to note that the Zone 40 Capital Facilities will be phased as development progresses within the Specific Plan Area.
>
> As referenced in the Areas Adjacent to Zone 40 Water Master Plan Report, "It is probable that the demands of initial development in the western half of the Study Area would be served by ground water". This is based on the fact that the construction of ultimate Capital Facilities to deliver surface water to support initial development would be cost prohibitive, either as a developer funded and reimbursed project, or as a capital improvement by Zone 40.

ZONE 40
CAPITAL FACILITIES

Item	Within POU, West of Bradshaw Surface Water Delivery			Outside POU, East of Bradshaw Groundwater Delivery		
	N. Vinyard Portion	Z40 North Expansion Area Total	N. Vinyard % of Total Exp. Area	N. Vinyard Portion	Z40 North Expansion Area Total	N. Vinyard % of Total Exp. Area
1. Storage Reservoir (mg)	2	4.4	45%	2	4	50%
5. Booster pump Requirements				---	---	---
A. Surface Water Delivery (gpm)	2,900	8,890	34%	4,440	15,280	29%
B. Storage (gpm)	2,900	8,890	34%			
3. Wells at 1275 gpm	---	---	---	3	6	50%
4.Groundwater Treatment Facility (mgd)	---	---	---	3.20	11	29%
5. Zone 40 T- Main, D-Main Reqm'ts	See Figure 4			See Figure 4		
6. City of Sacto. System Reqm'ts				---	---	---
A. Purchase of Capacity at City WTP (mg)	4.2	12.8	33%			
B. City Transmission Main Upgrade	Unknown at this time			---	---	---

> Ground water facilities to serve initial development of the Specific Plan Area within the City POU would be dependent upon development size and timing of permanent surface water improvements. At minimum, wells, treatment facilities, storage, and booster pumping would be required. Transmission mains would be constructed as currently identified in this Water Master Plan Report.
>
> It is expected that the initial construction of ground water supply and treatment for the western portion of the Specific Plan Area would, if located and sized appropriately, be a reimbursable facility under Zone 40 and ultimately reduce the capital ground water facilities required outside the City POU (East of Bradshaw Road).

The Capital Facilities Plan to provide water service to the Specific Plan Area is identified in detail as part of the Capital Improvement Program (CIP) and Financing Plan for the NVSSP. The project facility costs, timing, and initial phasing of capital facility development is described in detail as part of the CIP for the Specific Plan Area.

Regulatory Requirements.

Annexation to SCWA Zone 40 and SCWMD:

According to MacKay and Somps, the Plan Area will need to be annexed into the existing Zone 40 of the SCWA in order for Zone 40 to provide major water facilities described in their report. They further state that the Specific Plan Area should also be annexed to the Sacramento County Water Maintenance District which will allow the District to purvey water to developments within the Specific Plan Area.

Water Supply Agreements:

MacKay and Somps provide the following discussion concerning water supply agreements:

> While permanent surface water supplies have not yet been finalized, interim surface water supplies have been obtained to address declining ground water levels. On November 16, 1993, the Board approved an Agreement with the City of Sacramento for the City to treat and wheel interim surface water obtained by the Agency (S7).
>
> On June 21, 1994, the Board approved a Water Transfer Agreement with Browns Valley Irrigation District (BVID) for the release of surface water from

the Yuba River and delivery to Zone 40, via diversion and treatment at the City's Sacramento River Water Treatment Plant. Approximately 1,500 acre-feet of surface water was used in Zone 40 during the term of the first BVID water transfer agreement from October 1, 1994 to September 30, 1995. On June 6, 1995, the Board approved a second agreement with BVID for the transfer of 2,000 acre-feet of water for use in Zone 40 during the October 1, 1995 to September 30, 1996 time period. It is expected that the entire 2,000 acre-feet of surface water will be utilized, which will supply the water needs for over 3,000 homes within the Laguna and Vineyard water distribution systems. County staff believe that short-term water transfers on the order of 2,000 acre-feet per year can be consistently acquired.

The initial physical facilities needed for SCWA to receive the surface water from the City's water distribution system were completed in February of 1995 with completion of the Franklin Boulevard Booster Pump Station project. Additional facilities and modifications to the Franklin Booster Pump Station are planned which will more than double the capacity to receive water from the City's distribution system to approximately 6,000 acre-feet annually for the Laguna and Vineyard water systems in the Zone 40 Area. These improvements are planned to be operational by the summer of 1997.

Water Master Planning Efforts.

As noted above, a component of General Plan Policy CO-20 is a requirement that there be an approved Water Master Plan for new development areas. According to MacKay and Somps:

> A Water Master Plan for Zone 40 was completed in February of 1987. The 1987 Master Plan recommended conjunctive use with surface water supplies from a proposed Bureau of Reclamation contract or an expansion of the City's American River POU. Facilities have been designed and financing structured to implement conjunctive use of surface water and ground water supplies within Zone 40.
>
> The Draft Zone 40 Water Supply Master Plan Update evaluated water conservation, ground water, surface water, and reclaimed water as measures to meet future water needs in the Study Area. The recommended alternative included water conservation (including the sixteen Best Management Practices identified in the Memorandum of Understanding Regarding Urban Water Conservation in California), a long-term sustainable ground water yield, surface water for conjunctive use, and utilization of reclaimed water from the

Sacramento Regional County Sanitation District's 5 million gallon a day wastewater reclamation facility, currently under design. Surface water sources included PL 101-514 water, SMUD assignment water, "winter" water, City water within the existing POU, and other unidentified surface water transfers as needed.

SCWA staff recommends that the Master Plan Update be forwarded to the County Department of Environmental Review and Assessment (DERA) to commence preparation of CEQA documentation once the Water Forum Agreement is completed. It is SCWA staff's intent that the recommended alternative of the Master Plan Update be adjusted accordingly as the Water Forum's Solution Agreement becomes more clarified and that the environmental documentation of the Master Plan Update be closely coordinated with CEQA documentation for the Forums' Solution Agreement.

The regional Water Forum recently published a Working Group Draft Agreement. A DEIR on this project is expected in Fall of 1997, a final Agreement in December of 1997, and a final EIR in the winter. Once this is complete, the SCWA's Zone 40 Master Plan Update Draft EIR can be completed and the Master Plan Update adopted in summer of 1998.

SCWA staff have initiated master planning efforts for the Areas Adjacent to the Zone 40 Master Plan Area, which include the East Franklin, Laguna Ridge, and Lent Ranch Specific Plans and Poppy Ridge Comprehensive Plan in the Laguna Area; and the North vineyard Station Specific Plan and Florin Station Comprehensive Plan in the Vineyard Area. These master plans will be combined with the Zone 40 Master Plan Update and will build on the water supply sources.

Summary of Impacts and Recommendations.

MacKay and Somps Civil Engineers, Inc. have prepared a *Preliminary Master Water Supply and Water Distribution System Report* (May 1997) for the North Vineyard Station Specific Plan. The purpose of this report was to develop long-term, permanent water supply alternatives and to identify water facilities needed to serve the North Vineyard Station Specific Plan Area (NVSSP Area). Their report is based on several other studies. The Sacramento County Public Works Agency, Water Resources Division (WRD) has conducted an evaluation of groundwater impacts of the Specific Plan area. Their report, entitled *North Vineyard Station Specific Plan, Evaulation of Groundwater Impacts* (January 31, 1997), has been included as Appendix A of the MacKay and Somps report. Other sources include the Zone 40 Master Water Supply Plan Report (1987), the Vineyard Water Distribution Study

(1993), the Zone 40 Expansion Study (1995) and the outcome, to date, of the Sacramento Area Water Forum process.

The Conservation Element of the Sacramento County General Plan contains a Water Resources section which includes two policies relative to water supply for areas of new urban growth, CO-20 and CO-21. These policies require that a Water Supply Master Plan be prepared for areas of new urban growth and that such a plan consider alternate conservation measures, achieve safe yields of ground water supply and formulate monitoring programs to review water supply progress. MacKay and Somps have provided an analysis of water supply needs, facilities, financing and phasing to achieve sufficent water supply to serve the needs of the NVSSP Area, consistent with the above noted policies.

As noted by MacKay and Somps, the existing land uses within the Plan area are relatively dispersed and independent. They are served by privately owned and operated wells. On the basis of the WRD's evaluation, MacKay and Somps have indicated that existing water demands in the Plan Area cannot be precisely estimated. However, analysis shows that current water use within the Specific Plan Area is approximately 580 acre-feet of water annually.

According to MacKay and Somps, there are no existing public water distribution facilities within the Plan Area. However, Sacramento County Water Agency Zone 40 facilities exist to the south of the project. Currently, there are two separate systems: one east of Bradshaw Road and one west of Bradshaw Road. In addition, City of Sacramento facilities exist to the west and northwest of the project site.

The City of Sacramento currently holds surface water rights from the American River. A geographical service area has been assigned for use of this water which extends beyond the current City limits into areas of the unincorporated County of Sacramento. Known as the City of Sacramento American River Place of Use (POU), this geographical area's easterly boundary runs along Bradshaw Road which bisects the Plan Area. The POU extends north of Florin Road and south of Gerber Road, and includes the portion of the plan westerly of Bradshaw Road. Surface water from the City's contractual source could therefore be utilized within the westerly portions of the Plan Area, approximately 945± acres.

In 1987, the Sacramento County Water Agency developed a Zone 40 Master Water Supply Plan Report. The boundaries of that study extended to the southerly boundary of the Specific Plan Area, but did not include it. In late 1995, the Sacramento County Water Agency began a further study, this time to expand the Study Areas associated with the Zone 40 Master Plan Update in response to proposed land planning in areas immediately adjacent to the study area of the Zone 40 Water Master Plan Update. The expanded area involves two individual areas, a northern and southern study area. The Northern Study Area encompasses the North

Vineyard Station Specific Plan, as well as areas to the west, north, and east of the Specific Plan Area.

The determination of water demands for the Specific Plan Area provides the basis for water supply and distribution capacity requirements to serve the Specific Plan Area. Annual domestic water demands for the Specific Plan Area have been calculated by MacKay and Somps based upon the water demand factors listed in the Zone 40 Master Plan Update and the Zone 40 Adjacent Areas Master Plan. In addition to determining Average Annual Demands at buildout, Maximum Day Demands and an analysis of Fire Flows have also been provided.

According to MacKay and Somps, the Water Master Plan for Areas Adjacent to the Zone 40 Master Plan Update's Study Area develops and evaluates water supply facilities to serve the demands in the Northern Study Area. Delivery, storage and treatment systems for the area were planned and tentatively sized. Projected water demands within the Northern Study Area, which includes the North Vineyard Station Specific Plan Area, can be supplied with one of the following two alternatives: 1) all surface water; or 2) a combination of ground water and surface water.

MacKay and Somps state that the portion of the Study Area lying entirely within the City's American River POU can be supplied with a firm source of American River surface water. Therefore, they assume that development within the City's American River POU will be supplied with only surface water in both of these alternatives.

In Alternative 1, surface water would supply the Maximum Day Demand of the entire Study Area, including the North Vineyard Station Specific Plan Area. In Alternative 2, surface water would supply the Maximum Day Demand of the area within the City's POU, and ground water would supply the Maximum Day Demand of the area outside the POU. Demands in excess of the Maximum Day Demand would be met from storage reservoirs in both alternatives.

According to MacKay and Somps, the preferred water supply alternative is Alternative 2, the combination of surface water and ground water. They further state that:

> This alternative will meet water demands of initial phases of development and buildout of the Specific Plan Area while lowering ground water levels only an approximate 1.8 feet in the Specific Plan Area. There may be a slight rise in the ground water level in the area of the Elk Grove cone-of-depression as a result of this water supply alternative. Also, the feasibility of Alternative 1, surface water only, is speculative at this time because there is no current firm source of surface water for areas of the portion of the Specific Plan that are

east of Bradshaw Road.

Six potential surface water supply options could be considered to meet demands in the Zone 40 Master Plan Update Northern Study Area, including the Specific Plan Area. According to MacKay and Somps, of these six supply elements, two were identified for full allocation in the study of the Zone 40 Master Plan Update at buildout, and one is too speculative to plan for at this time. The three remaining surface water supply elements which could be used to meet demands in the Northern Study Area, including the Specific Plan Area, are S1-Intermittent "Winter Water", S5- "Firm" Surface Water Transfers from North Sacramento River Basin, and S7-Agency Purchase of Sacramento Water.

According to MacKay and Somps, the ground water supply elements identified in the Zone 40 Master Plan Update which could be used to meet demands for the Northern Study Area, including the Specific Plan Area, include element G1-Additional Ground Water, and elements G6/G7-Injection.

The phasing of proposed development within the Specific Plan Area will dictate the feasibility of implementing the Water Supply Master Plan. According to MacKay and Somps:

> Development within the Plan Area may begin in the construction year immediately following adoption of the Specific Plan document. Because of the physical layout of many of the other infrastructure services, such as sewer and drainage, it is anticipated that development may commence in the westerly portions of the Plan Area. This Area is within the City American River POU which is ultimately planned to be supplied with 100% surface water. Because of the estimated costs of providing surface water to the Northern Study Area, an initial, possibly interim, alternative is necessary to allow any approved development to proceed.

To implement the Water Master Plan, the Plan Area will need to be annexed into the existing Zone 40 of the SCWA in order for Zone 40 to provide major water facilities described in their report. MacKay and Somps further indicate that the Specific Plan Area should also be annexed to the Sacramento County Water Maintenance District which will allow the District to purvey water to developments within the Specific Plan Area.

The following summary has been provided by MacKay and Somps:

> Conjunctive use water supply for the County of Sacramento and surrounding regions is a very complex and multi-faceted matter that has received intense attention in the last few years from all of the areas water purveyors,

environmental interests and governments. Solutions should not be pursued on a project-by-project level. They should be achieved on a regional scale. This effort takes time, and is now demonstrating a high probability of success in the foreseeable future.

Many interim solutions enhancing water supply have been implemented. Temporary surface water supplies are now being provided to areas which were entirely dependent upon ground water. Agreements are being completed which will provide significant long-term surface water supplies. This PL 101-514 water supply of 15,000 acre-feet of surface water is approaching reality with a DEIR due out prior to the approval of the North Vineyard Specific Plan, and scheduled final EIS/EIR for fall of 1997, prior to expected implementation of the Public Facilities Financing Plan for this project. It is therefore probable that long-term surface water contracts providing a more than adequate surface water supply will be in place prior to any possible start of development within the Specific Plan Area.

Initial water supply may be dependent upon ground water for the first few developments. This initial supply will likely come from ground water facilities which are constructed to become an integral part of the ultimate system, enhancing and supplementing the assurance of long-term reliable water supply for this comprehensively planned community.

Implementation of the North Vineyard Station Specific Plan Water Master Plan, as outlined by MacKay and Somps, would result in less than significant water supply impacts. However, the implementation of the NVSSP Water Master Plan is contingent on the implementation of the Water Master Plan for Areas Adjacent to the Zone 40 Water Supply Master Plan Update's Study Area, as well as fulfillment of the City of Sacramento American River Place of Use (POU). Until all agreements are in place to wheel "firm" surface water supplies to the Specific Plan area, the project will contribute to the incremental decline in ground water levels. This incremental decline and the dewatering of private wells is a regional issue, beyond the scope of this current project. However, the project will add to the ***significant adverse cumulative impacts*** that regional development has on ground water supplies.

Mitigation:

None required.

Sewer Service

Setting.

Currently, there are no public sewer facilities within the North Vineyard Station Specific Plan (NVSSP) area. Existing development within the project site is served by private septic systems. Public sewer service will be required to serve the proposed urban land uses. The NVSSP area lies within the Spheres of Influence of the Sacramento Regional County Sanitation District (SRCSD) and County Sanitation District No. 1 (CSD-1), which provide public sewer service within Sacramento County. CSD-1 provides local sewage collection and transport from its facilities to the regional sewage transmission, treatment and disposal facilities operated by SRCSD. Treated effluent from the Sacramento urban area is ultimately discharged to the Sacramento River at SRCSD's Regional Wastewater Treatment Plant, located approximately six miles southwest of the Specific Plan area near Freeport. SRCSD and CSD-1 are administered by the Water Quality Division of the Sacramento County Public Works Agency, which provides engineering and planning services to these sewer districts and operates and maintains district facilities. In order to receive public sewer service, the NVSSP area must be annexed to SRCSD and CSD-1.

CSD-1 and SRCSD classify sewer pipelines carrying 10 million gallons per day (mgd) or more as "interceptors". Sewer pipes carrying between 1 mgd and 10 mgd are known as "trunks". Sewer pipes carrying less than 1 mgd are referred to as "laterals". The cost of interceptor and trunk facilities are reimbursable or creditable against sewer fees.

There is an existing 108-inch sewer interceptor located in Elk Grove-Florin Road, approximately ½ mile west of the Specific Plan area. However, this interceptor is nearing capacity. In November of 1996, the SRCSD and CSD-1 Board of Directors approved the Sacramento Sewerage Expansion Master Plan project (Control No: 93-PWE-0834), which identifies the interceptor and trunk sewer projects which will be needed to remedy deficiencies in the existing system and to accommodate planned growth within the General Plan Urban Service Boundary through the year 2014 (see Plate SS-A). The EIR for the Master Plan provides a policy/program level analysis for the overall Master Plan improvements, and a project specific construction level analysis for several near term interceptor projects including the Bradshaw, Sunrise and Folsom East Interceptors.

The NVSSP area will be served by the Bradshaw Interceptor, which will generally follow the alignment of Elder Creek through the project area as shown on Plate SS-B. The Bradshaw Interceptor is needed to relieve the existing interceptor in Elk Grove-Florin Road, and to serve planned future growth in the northeast portion of the County. According to the EIR prepared for the Sacramento Sewerage Expansion Master Plan, the Bradshaw Interceptor project will be constructed in phases, with construction of the

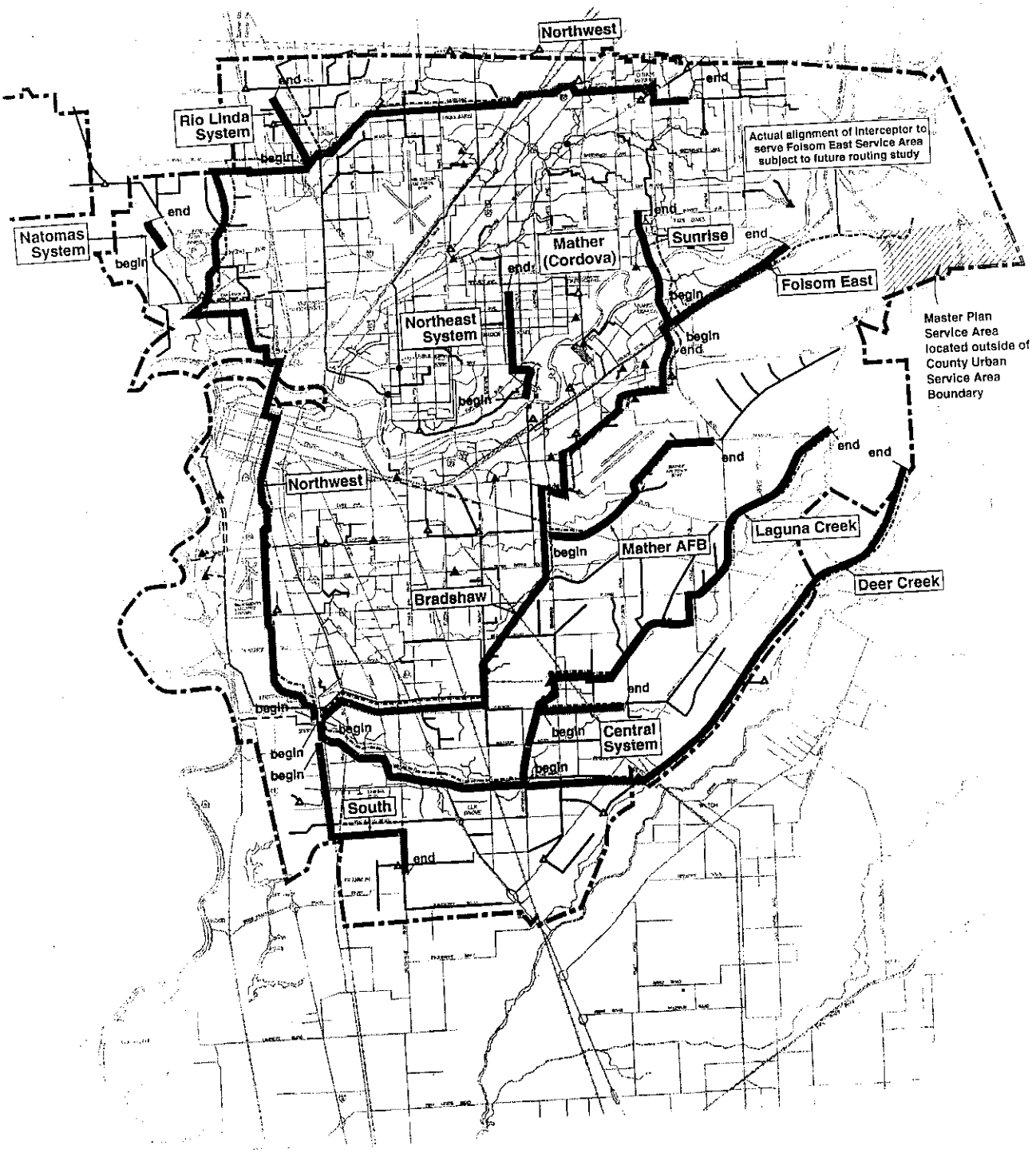


PLATE SS-A

Sacramento Sewerage Expansion Master Plan (Approved November 1996)

LEGEND

- Recommended interceptors
- Existing pump station
- Proposed pump station or existing pump station that would be upgraded as part of Master Plan
- Master Plan Service Area boundary
- Flow diversion
- Proposed trunk sewer
- Existing sewer
- Existing force main
- Large existing force main

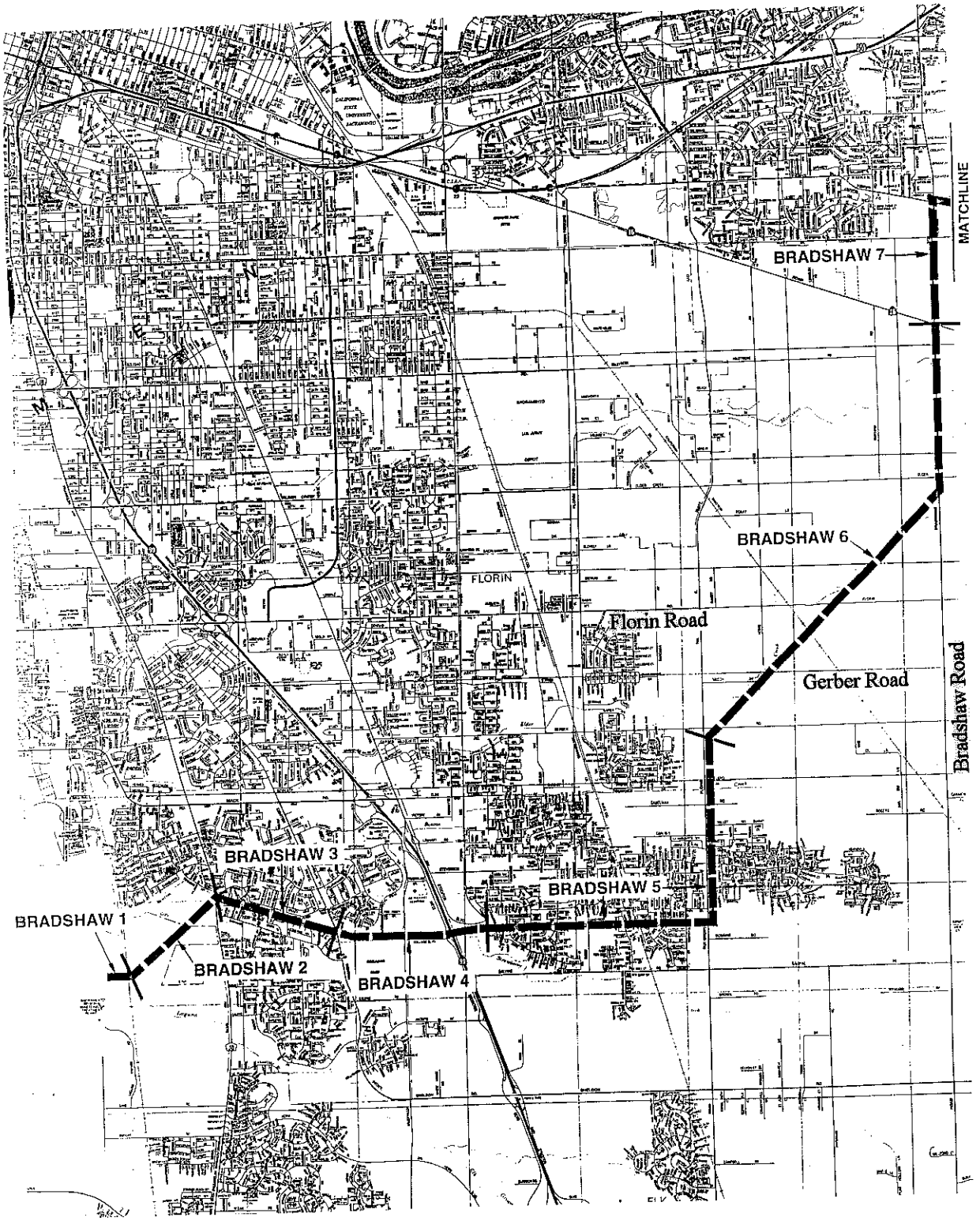


PLATE SS-B

LEGEND

Bradshaw Interceptor

Location of Bradshaw Interceptor Project (Approved November 1996) in the Vicinity of the North Vineyard Station Specific Plan Area

segment which will provide service to the NVSSP area (identified as Bradshaw 6) scheduled to be completed by early 1999. Conditions of approval of the Sacramento Sewerage Expansion Master Plan project require the SRCSD and CSD-1 to implement measures to mitigate for the Bradshaw Interceptor construction impacts upon vegetation, wildlife and wetland resources.

Proposed North Vineyard Station Sewer Master Plan.

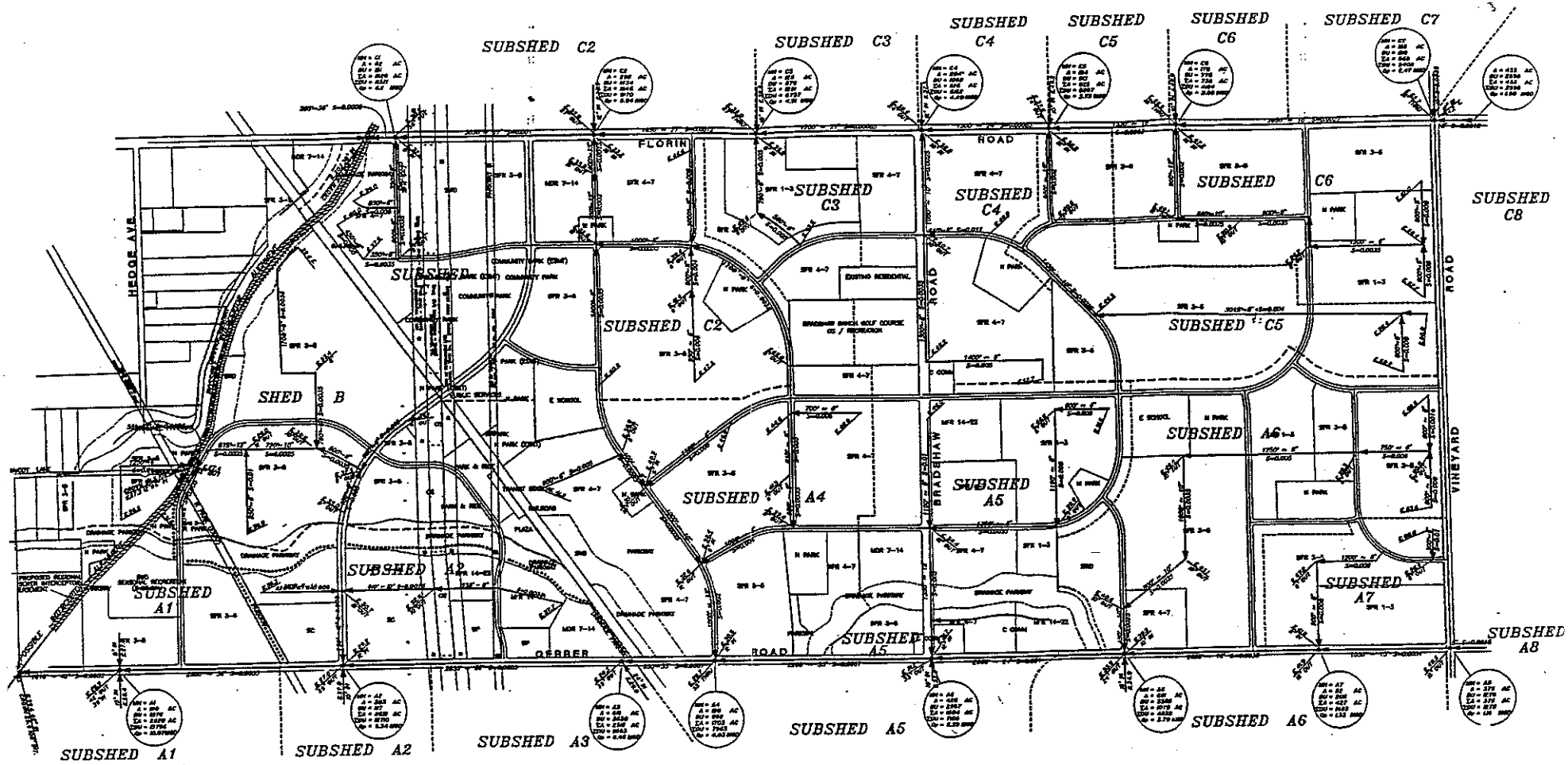
In December of 1995, MacKay & Somps Engineering prepared the Sanitary Sewer Study for the North Vineyard Station Specific Plan, which describes a proposed master plan for sewer facilities within and upstream of the NVSSP area. Evolution of the planning process subsequently led to changes in land use and in the locations of certain internal roadways proposed within the NVSSP area, and corresponding modifications were made to the proposed NVSSP sewer master plan to reflect these minor changes and refinements. The currently proposed sewer master plan for the NVSSP area is shown on Plate SS-C. The proposed sewer master plan will provide gravity sewer service to the Specific Plan area with three points of connection to the planned Bradshaw Interceptor. The County Water Quality Division has reviewed the proposed NVSSP master plan shown on Plate SS-C, and has determined that it is adequate to serve the proposed uses (Lilly, May 1997). The following information has been excerpted from the Sanitary Sewer Study for the North Vineyard Station Specific Plan to provide a more complete description of the proposed NVSSP sewer master plan.

Service Area Limits.

The area to be served by the NVSSP sewer facilities extends off-site to the north, east, and south of the NVSSP area. The sewer study area has been divided into three major service sheds which are labeled as Shed Areas A, B, and C on Plate SS-C. These shed designations correspond to connection points on the planned Bradshaw Interceptor. The boundaries of the major sheds were established by the Water Quality Division based on several factors, including the previous Sacramento Sewerage Expansion Study, analysis of topography, and the ability to sewer by gravity.

The direction to accommodate sewage flows from off-site areas is consistent with County General Plan Policy PF-9, which states: *"Design trunk and interceptor systems to accommodate flows generated by full urban development at urban densities within the ultimate service area. This could include phased construction where deferred capital costs are appropriate"*.

The NVSSP and lands to the south are within the County General Plan Urban Policy boundary which defines the expected areas of urbanization during the planned twenty-year



LANDUSE LEGEND

D-18	MULTI FAMILY RESIDENTIAL (AVG. 18 DU/AC)
D-10	MULTI FAMILY RESIDENTIAL (AVG. 10 DU/AC)
D-6	SINGLE FAMILY RESIDENTIAL (AVG. 6 DU/AC)
D-5	SINGLE FAMILY RESIDENTIAL (AVG. 5 DU/AC)
D-2	SINGLE FAMILY RESIDENTIAL (AVG. 6 DU/AC=FOR SEWER PURPOSES)
C	COMMERCIAL
BP	BUSINESS PROFESSIONAL
COMM PARK	COMMUNITY PARK
N-PARK	NEIGHBORHOOD PARK
SWD	STORM WATER DETENTION
	STREETS
	LANDUSE BOUNDARY

SEWER LEGEND

	MAJOR-SHED LINE
	SUB-SHED LINE
E.32.5	FLOWLINE ELEVATION
10" S=0.0075	SANITARY SEWER PIPE
MH = M1	MANHOLE/JUNCTION POINT NUMBER
A = 42.0 AC	CONTRIBUTING AREA
DU = 16.4	CONTRIBUTING EQUIVALENT SINGLE FAMILY DWELLING UNITS
ΣA = 42.0 AC	TOTAL CONTRIBUTING AREA
ΣDU = 16.4	TOTAL CONTRIBUTING DWELLING UNITS
Qp = 0.23 MGD	PEAK WET WEATHER FLOW

0 500 1000 2000
SCALE: 1"=1000'

Sewer Master Plan for the North Vineyard Station Specific Plan Area

NOTE: LARGE SCALE DRAWINGS ARE ON FILE AT THE COUNTY PLANNING DEPARTMENT.

PLATE SS-C

buildout of the General Plan. Areas to the north and east of the Specific Plan are not within the Urban Policy boundary. However, the General Plan acknowledges that development in Sacramento County will ultimately extend beyond its Urban Policy boundary. This acknowledgment is made in part through inclusion of an Urban Services boundary. This line establishes the area for which infrastructure improvements are to be sized. The General Plan Urban Services boundary in this portion of Sacramento County is along the west side of the Deer Creek/Cosumnes River floodplain, roughly six miles east of the NVSSP. Therefore, oversizing to accommodate future development of the service area included on Plate SS-D is consistent with the General Plan.

Analysis Procedures.

The development of the NVSSP sewer master plan included the following steps:

1. Major sewer sheds were defined.

2. A schematic backbone collection system was established.

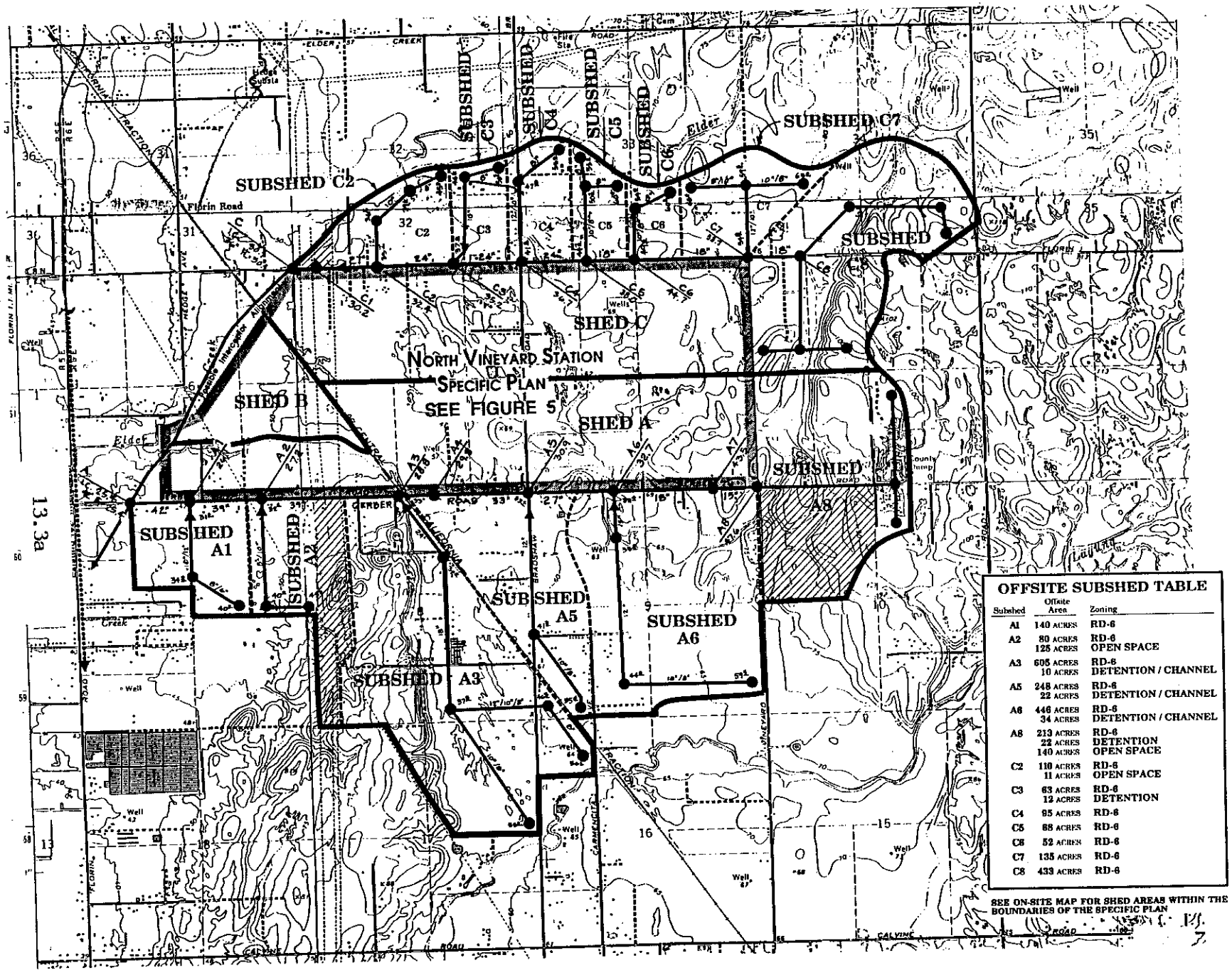
3. Major sheds were divided into sub-sheds in order to define the areas which contribute flows to certain points (nodes) on the collection system.

4. To estimate sewage flows, land use boundaries were overlaid on the sub-sheds creating sub-areas of single land use within each sub-shed. The acreages of these sub-areas were determined and multiplied by the average number of Equivalent Single-Family Dwellings (ESD's) per acre for their particular land use in order to determine the total number of ESD's entering each pipe system.

5. Pipes were sized and inverts calculated using an iterative process. The starting invert elevations of the trunks in Gerber and Florin Roads were set to match the crown elevations of the Bradshaw Interceptor. Other lateral pipelines were typically designed to be approximately ten feet deep at the upstream end. Because information was not available about the layouts of subdivisions internal to the NVSSP, the depth of ten feet at the upstream end was chosen conservatively to allow for the potential of longer routes to the extremities of the system.

Estimation of Sewage Generation.

The methodology used to estimate sewage flows in trunk and interceptor systems is defined in the Sacramento Sewerage Expansion Study (SSES) (April 1993). The basic formula used is PWWF = PDWF + I&I where:



NORTH VINEYARD STATION SPECIFIC PLAN

SANITARY SEWER STUDY

OFFSITE SEWER FIGURE 3

August 9, 1995

REVISED 10-3-95

OFFSITE SUBSHED TABLE

Subshed	Offsite Area	Zoning
A1	140 ACRES	RD-6
A2	80 ACRES 125 ACRES	RD-6 OPEN SPACE
A3	605 ACRES 10 ACRES	RD-6 DETENTION / CHANNEL
A5	248 ACRES 22 ACRES	RD-6 DETENTION / CHANNEL
A6	446 ACRES 34 ACRES	RD-6 DETENTION / CHANNEL
A8	213 ACRES 22 ACRES 140 ACRES	RD-6 DETENTION OPEN SPACE
C2	110 ACRES 11 ACRES	RD-6 OPEN SPACE
C3	63 ACRES 12 ACRES	RD-6 DETENTION
C4	95 ACRES	RD-6
C5	68 ACRES	RD-6
C6	52 ACRES	RD-6
C7	135 ACRES	RD-6
C8	433 ACRES	RD-6

SEE ON-SITE MAP FOR SHED AREAS WITHIN THE BOUNDARIES OF THE SPECIFIC PLAN

LEGEND

- SPECIFIC PLAN BOUNDARY
- SHED BOUNDARY
- SUB-SHED BOUNDARY
- CONCEPTUAL SEWER PIPE ALIGNMENT / PIPE SIZE
- NODE ELEV. — FLOWLINE OUT ELEVATION
- 11 Ac. — OFFSITE SUBSHED ACREAGE
- NON-SEWER GENERATING AREAS
- I.C. — INTERCEPTOR CROWN ELEVATION
- 92.4 — INVERT ELEVATION

PLATE SS-D

PWWF is Peak Wet Weather Flow;
PDWF is Peak Dry Weather Flow; and
I&I is Infiltration and Inflow.

Table SS-1, taken from the SSES, shows the design flow criteria and peaking factor formula used in the SSES methodology.

****

Table SS-1
Design Flow Criteria

Item	Value/Criteria
1. ESD Flow Factor	310 gpd/ESD
2. Land Use Unit Flow Rates	
Low Density Residential	6 ESDs/acre
Medium Density Residential	15 ESDs/acre
Commercial/Industrial	6 ESDs/acre
Transit-Oriented Development	11 ESDs/acre
3. Dry Weather Peaking Factor	Curve (see Figure 3-1)[a]
4. Rainfall Dependent I/I (10-year storm)	
Existing Areas	1,400 gpd/acre
Future Areas	1,000 gpd/acre
5. Groundwater Infiltration	200 gpd/acre

[a] For average flow $\geq$ 0.1 mgd, use equation:

$$PF = 3.5 - 1.8Q^{0.05}$$

Where

PF = dry weather peaking factor (minimum = 1.2)

Q = average flow (mgd)

****

PDWF has been computed based on 310 gpd per ESD entering each trunk pipe system. ESD values used in this analysis are as follows:

Land Use	ESD Value
Single-Family Residential	1 Per Dwelling Unit
Multi-Family Residential	0.75 Per Dwelling Unit
Commercial	6 Per Acre
Employment	6 Per Acre
School	5 Per Acre
Parks	0
Open Space/Constrained Areas (Detention, drainage channels, powerline corridor, golf course)	0
Off-Site/Non-Constrained Areas	6 Per Acre

At the direction of the Water Quality Division, the analysis assumes that areas within the Specific Plan which are planned for less than five dwelling units to the acre may eventually be rezoned to a higher density (six dwelling units per acre on the average). This assumption is consistent with standard Sacramento County sewer infrastructure planning procedures.

Because land plans for the off-site areas have not been formally adopted, this analysis assumes that development outside the boundaries of the Specific Plan will occur at an average of six ESD's per acre.

Currently, the practice within Sacramento County is to design laterals using the "old" criteria of 400 gpd per ESD. This NVSSP sewer analysis approximates lateral sizes based on historical experience. Actual lateral sizes and slopes will be determined later in the development process using then current design criteria.

A total of 16.92 million gallons per day (mgd) of PWWF are expected to be generated by development within Sheds A, B and C.

Design Criteria.

Pipe sizes were based on Sacramento County standards which call for a maximum depth of flow of seven-tenths of the pipe diameter in all pipes 10 inches or less. Pipes 12 inches and larger were designed to flow seven-tenths full assuming they may have direct connections.

Proposed trunk and lateral grades were designed to yield a minimum two-feet per second velocity when flowing full using Mannings 'n' = 0.013. These minimum slopes are as follows:

	Minimum Slope	
Size	Fixed Alignment	Schematic Alignment
6" ~	0.0050	0.0100
8" ~	0.0035	0.0060
10" ~	0.0025	0.0035
12" ~	0.0020	0.0024
15" ~	0.0015	0.0018
18" ~	0.0012	0.004
21" ~	0.00095	N/A
24" ~	0.00075	N/A
27" ~	0.00065	N/A
30" ~	0.00055	N/A
≥33" ~	0.00050	N/A

Fixed alignment slopes were generally used within the Specific Plan Area where collector roadway systems have been established. Schematic alignment slopes were typically used outside the boundaries of the Specific Plan where development planning concepts are less certain. The purpose of using steeper pipe grades in this analysis for "unplanned" areas is to allow for the potential that pipe lengths may turn out to be longer than anticipated at this time.

System Layout.

Plates SS-C and SS-D show the sewer infrastructure master plans to serve development of the proposed NVSSP and upstream areas. The sewer lines have been laid out after consideration of topography and other physical constraints. Within the Specific Plan area, the pipelines are generally located within existing or proposed roads. The location of proposed sewers in areas outside the boundaries of the Specific Plan are more schematic in nature and are expected to be modified with the submittal of development proposals for those areas.

A total of 16.92 million gallons per day (mgd) of PWWF are expected to be generated by development within Sheds A, B and C. Sewage flows from Shed A (PWWF of 10.03 mgd) will connect to the Bradshaw Interceptor at Gerber Road. Sewage flows from Shed B (PWWF of 0.57 mgd) will connect to the Bradshaw Interceptor approximately midway

between Gerber and Florin Roads. Sewage flows from Shed C (PWWF of 6.32 mgd) will connect to the Bradshaw Interceptor at Florin Road. The pipelines in Gerber and Florin Roads are estimated to carry in excess of 1 million gallons per day (mgd), and therefore are classified as "trunk" facilities subject to CSD-1 policies for reimbursement of construction costs. Portions of other parts of the system are also expected to reach trunk classification. The analysis indicates that the entire service area can be served by gravity without the need for a lift station.

Construction Phasing.

The Bradshaw Interceptor must be constructed prior to any development within the Specific Plan area. Construction of the interceptor is currently anticipated in 1997-1998. Construction phasing of trunk and lateral sewer facilities will be driven by the timing of individually proposed development projects within the Specific Plan area. Phasing for construction of sewer improvements will consist of trunk and lateral installation beginning at downstream outfall points and progressing upstream to serve proposed developments. The first proposed development project will require the extension of trunk and lateral facilities necessary to serve it and proposed upstream developments. Current County development standards require the extension of these facilities to the upstream boundary of the project phase constructing them.

Financing/Funding.

SRCSD will be responsible for construction of the Bradshaw Interceptor. The proposed sewer trunk facilities will be funded by the CSD-1 fee program. Advance construction of trunk facilities may be funded by development with an existing system of credits against future trunk connection fees and reimbursement for additional amounts beyond those credits. All lateral sewer facilities are the responsibility of the developer.

Water Quality Division Comments.

The Sacramento County Water Quality Division has provided the following comments on the project on behalf of SRCSD and CSD-1:

> "The subject project is within the Sphere of Influence for SRCSD and CSD-1. Annexation to these districts will be required prior to the approval of improvement plans or recordation of final maps, whichever occurs first. The applicant is responsible for submitting the annexation request to the Local Agency Formation Commission (LAFCo).
>
> Sewer service for this region of Sacramento County will be provided by

construction of the Bradshaw Interceptor sewer, anticipated in 1997-1998. Extension of sewer lines on Gerber Road, Florin Road and Passallis Lane from the Bradshaw Interceptor sewer will collect flow from the subject Specific Plan.

The size of the trunk sewer lines does not vary significantly with whichever planning alternative is chosen (i.e., proposed Specific Plan, reduced density alternatives or core relocation alternatives). The trunk sewer will be sized to accommodate 6 units per acre in order to accommodate the ultimate flow from this area. This will provide sufficient sewer capacity for any of the alternatives" (Lilly, April 1996 and May 1997).

Project Impacts and Mitigation Measures.

Specific Plan development will be required to annex to SRCSD and CSD-1 in order to receive public sewer service. Development of the proposed NVSSP project and upstream areas will contribute an estimated 16.92 million gallons per day of peak wet weather sewage flows to the regional sewer system. Although the existing regional sewer system in the project vicinity is nearing capacity, the Bradshaw Interceptor is planned for construction in 1997-1998 through the western portion of the Specific Plan area which will provide sufficient capacity to accommodate the proposed project's sewage flows. Specific Plan development will be required to construct the trunk and lateral facilities needed to convey project sewage flows to the Bradshaw Interceptor. Because planned facilities will be sufficient to accommodate sewage flows from the proposed land uses, the project's impacts upon sewer service are considered to be **less than significant** and **no mitigation measures are required.**

Biological Resources

Biotic inventories were conducted by Sugnet and Associates in accordance with County General Plan Policies and the methods outlined in the County "Specific Plan Wetland Mitigation Plan Process Guidelines" (March 1994). Per these policies and guidelines wetland delineations are required to include a description of habitat types and associated plant and animal species, special-status species determination, and habitat quality evaluation. The County recommends gathering information on wetland resources through the combined use of aerial or satellite imagery, historical data, and field verification.

In accordance with these guidelines, two technical studies have been prepared: *North Vineyard Station Specific Plan Technical Appendix: Biotic Resources* (May 3, 1996); and *North Vineyard Station Off-Site Basin E-20 Wetland Delineation/Species Survey* (January 6, 1997). These reports have been incorporated into this biological resource discussion which follows and can be reviewed at the Sacramento County Department of Environmental Review and Assessment (DERA), and/or the Planning and Community Development Department. Bibliographic references from these reports have also been incorporated into the bibliography for this EIR.

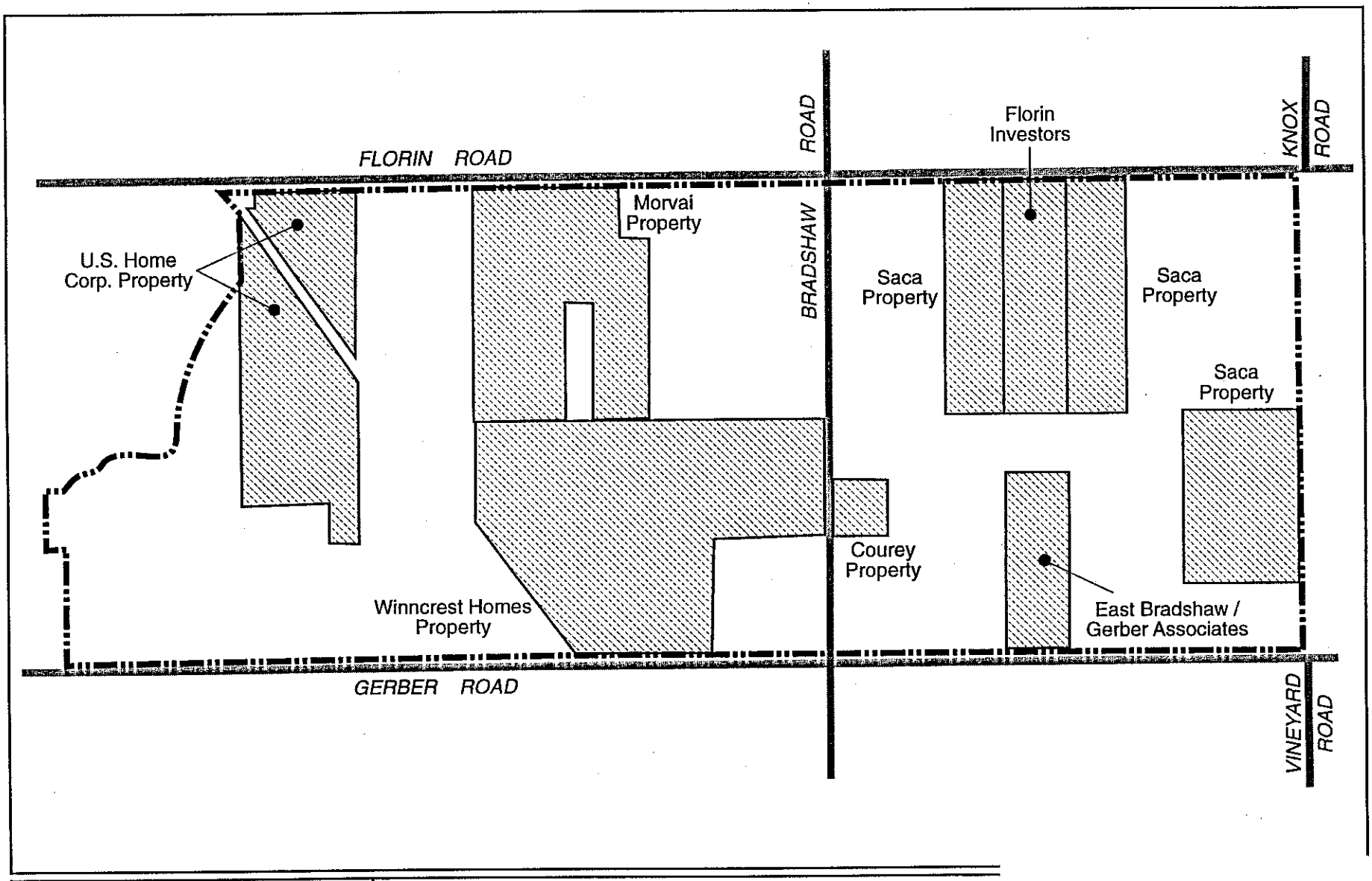
Setting.

The project area is located on the flat bottom of the Sacramento Valley. Dominated by grasslands, the Plan Area supports few woody species and very little overall woody biomass. The exception is riparian zones, which have deeper soils and more available water. However, well developed riparian zones are not present in the plan area. Habitats identified within the plan area, on both non-proponent properties and proponent properties, are characterized below.

Terrestrial Habitats

Non-native Annual Grassland.

The dominant habitat type in the specific plan area is non-native annual grassland. These areas are typically not irrigated and occur in several forms including historically disturbed fallow ground, dry pasture (primarily used for cattle and horses), and "buffer" areas along roads and near houses. Plant species most common throughout the area include soft chess, ripgut brome, wild oat, barley, filaree, tarweed, yellow star thistle, wild radish, and toad rush.



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NORTH VINEYARD STATION SPECIFIC PLAN
PARTICIPATING PROPERTIES

IN

PLATE BR-A

Not To Scale

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14.1a

Irrigated Pasture.

Flood irrigation of pastures occurs during the dry months in many parts of the plan area. Plant species (forage) consists of a mixture of typical dryland species, as well as many species that occupy the margins of wetlands, and include fescue, birdsfoot trefoil, chicory, curly dock, english plantain, tall flatsedge, thistle, spiny-fruit butter-cup, and white clover.

Residences — Exotic Landscaping.

Most of the vegetation around the residences are ornamental species. These areas support most of the trees and shrubs.

Trees.

Numerous trees are scattered throughout the plan area, typically associated with homesites or situated along fence lines. Observed species include eucalyptus (Eucalyptus spp.), Chinese pistachio (*Pistacia chinensis*), black walnut (*Juglans californica*), camphor (*Cinamomum camphora*), persimmon (*Diospyros viraginaia*), and fruitless mulberry (*Morus alba*). A few large Gooding's (black) willows occur along Elder and Gerber Creeks.

A tree survey of the participating properties was conducted by Tree Care Inc. While the survey did not address all parcels within the Plan area, it accurately characterizes the general nature of the tree cover of the entire Plan area. The survey revealed a total of 48 trees with a combined diameter of 1,470 inches. Dominant species were eucalyptus (814 inches total combined diameter), black walnut (121 inches), and fruitless mulberry (168 total inches). Other species include Italian stone pine, catalpa, Modesto ash, box elder, Japanese black pine, silver maple, London plane, weeping willow, and Monterey pine. All trees surveyed were in fair to poor condition.

Aquatic Habitats.

Elder Creek and Gerber Creek (perennial creeks).

Reaches of Elder and Gerber creeks occur within the Plan Area. Elder Creek, the larger of the two, crosses the northwestern corner. Gerber Creek is located along the southern boundary, near Gerber Road. Both creeks are shallow and carry relatively low flows relatively low volume. Irrigation and urban water runoff has extended the flow regimes of these creeks (particularly Elder Creek) into the dry season. Within each channel, isolated pools persist throughout the year.

Elder Creek supports fairly dense areas of blackberry and several willows. The channel bottom is flat with exposed hardpan. Gerber Creek flows supports very little woody vegetation along course through the project site.

Vernal Pools.

Vernal pools are depressions within the grassland landscape that pond during the wet winter months and dry out during spring. They are generally small, but can exist in a wide range of depths (several inches to several feet) and sizes (several square feet to several thousand square feet). Vernal pools can occur as isolated basins or as depressions within swales. Vegetation is dominated by native non-grass species such as coyote thistle, popcorn flower, Fremont's goldfields, white-head navarretia, dwarf wooly-heads, and American pillwort. These wetlands occur throughout the grassland areas, but are most abundant in the eastern half of the Plan Area.

Approximately 18 acres of vernal pools have been identified within the Plan area.

Seasonal Wetlands.

Seasonal wetlands are typically shallow and do not pond as deep as vernal pools although their effective saturation period is about the same. Depending on the duration and depth of inundation, the species composition of seasonal wetlands may be similar to vernal pools. Conversely, drier seasonal wetlands, or those that have been disturbed by grazing may support a predominantly non-native flora such as ryegrass, lythrum, Mediterranean barley and toad rush. Seasonal wetlands are typically shallow and do not pond as deep as vernal pools, although their effective saturation period is about the same. Approximately 18 acres of seasonal wetlands have been identified within the Plan area. Seasonal wetlands are generally more variable than vernal pools with regard to hydrology in that they can occur in basins or on slopes. Vegetation is typically non-native grasses and forbs.

Drainage Swale.

Drainage swales are sloped seasonal wetlands that convey water from local water sheds. They remain saturated for slightly lesser periods of time than seasonal wetlands but tend to support a similar flora. The Plan Area supports few of these features because of its overall flat topography.

Freshwater Marsh.

The freshwater marsh community occurs where soils are water-saturated throughout most of the year. This community develops best in areas of slow moving or stagnant water. Dominant species within the freshwater marsh community include cattail, species of bulrush, willow herb and polygonum.

Stock Ponds.

Several man-made stock ponds occur in the plan area. These features occur in several forms including impoundments of drainage swales, excavations within drainages, or excavation on uplands. Water level in the stock ponds fluctuates widely through the year, typically filling in winter and drying out or declining to lowest levels in fall. Vegetation within these ponds also varies widely depending on water regime and level of disturbance.

Wetlands and Other Waters of the U.S.

Delineation Methods. Waters of the U.S. (including wetlands) within participating properties (see Plate BR-A) were delineated according to methods outlined the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory 1987). These methods include field investigation and characterization of waters, including wetlands, using hydrologic, soils, and vegetative criteria.

Due to access limitations, waters of the U.S. on non-participating properties were tentatively identified using aerial photographic analysis, review of available soils data (U.S. Department of Agriculture, Soil Conservation Service 1993), and observations made from off-site.

Additional resources utilized for the delineation included: aerial photography (black and white, photo date: 29 March 1995, 1"=200'); special-flight aerial photography (color, photo date: 4 March 1995; unspecified scale); aerial photography (black and white, photo date: 06 April 1993, 1"=200'); aerial photography (color infrared, photo date: 22 May 1989, 1"=1000'); *Munsell Soil Color Chart* (Munsell Color 1988); *The National List of Plants that Occur in Wetlands: California (Region 0)* (Reed 1988); and *Sacramento County Soil Survey* (U.S.D.A. 1993).

Survey Results. With the exception of the stock ponds, the aquatic habitats discussed above are potentially jurisdictional wetlands and waters of the United States. Combined, these habitats cover approximately 51 acres of the Plan Area. The acreages of each of habitat are presented on Table BR-1.

The distribution of wetlands within the Plan Area is presented on Plate BR-B. Table BR-

2 provides a breakdown of wetland acreages within the participating and non-participating properties.

In addition to wetlands within the Specific Plan area, 7.53 acres of wetlands exist off-site. The types of wetlands offsite are shown on Table BR-3. These off site areas would be subject to impact from the required drainage modifications necessary to integrate the project into the surrounding drainage system.

Table BR-1
Potential Jurisdictional "Waters of the U.S." in the Plan Area

Water of the U.S. Category	Acreage
Perennial Creek	6.0
Freshwater Marsh	2.0
Seasonal Wetland	18.0
Vernal Pool	18.0
Drainage Swale	7.0
Stock Pond	0.09*
Total:	51.0

* Only 0.09 acres of stock ponds have been verified by the Corps. Eleven (ll) other stockponds are assumed to be non-jurisdictional waters of the U.S.

Table BR-2
Wetland Acreage Within Participant and Non-Participant Properties

Waters of the U.S. Category	Participant Property Acreage	Non-Participant Property* Acreage
Vernal Pool	9.93	8
Seasonal Wetland	3.72	14
Drainage Swale	1.44	6
Perennial Creek	1.60	4
Stock Pond	0.09	0
Freshwater Marsh	0.00	2
Total	**16.78**	**34**

*This acreage has been interpreted from aerial photography and has not been verified by the Corps.

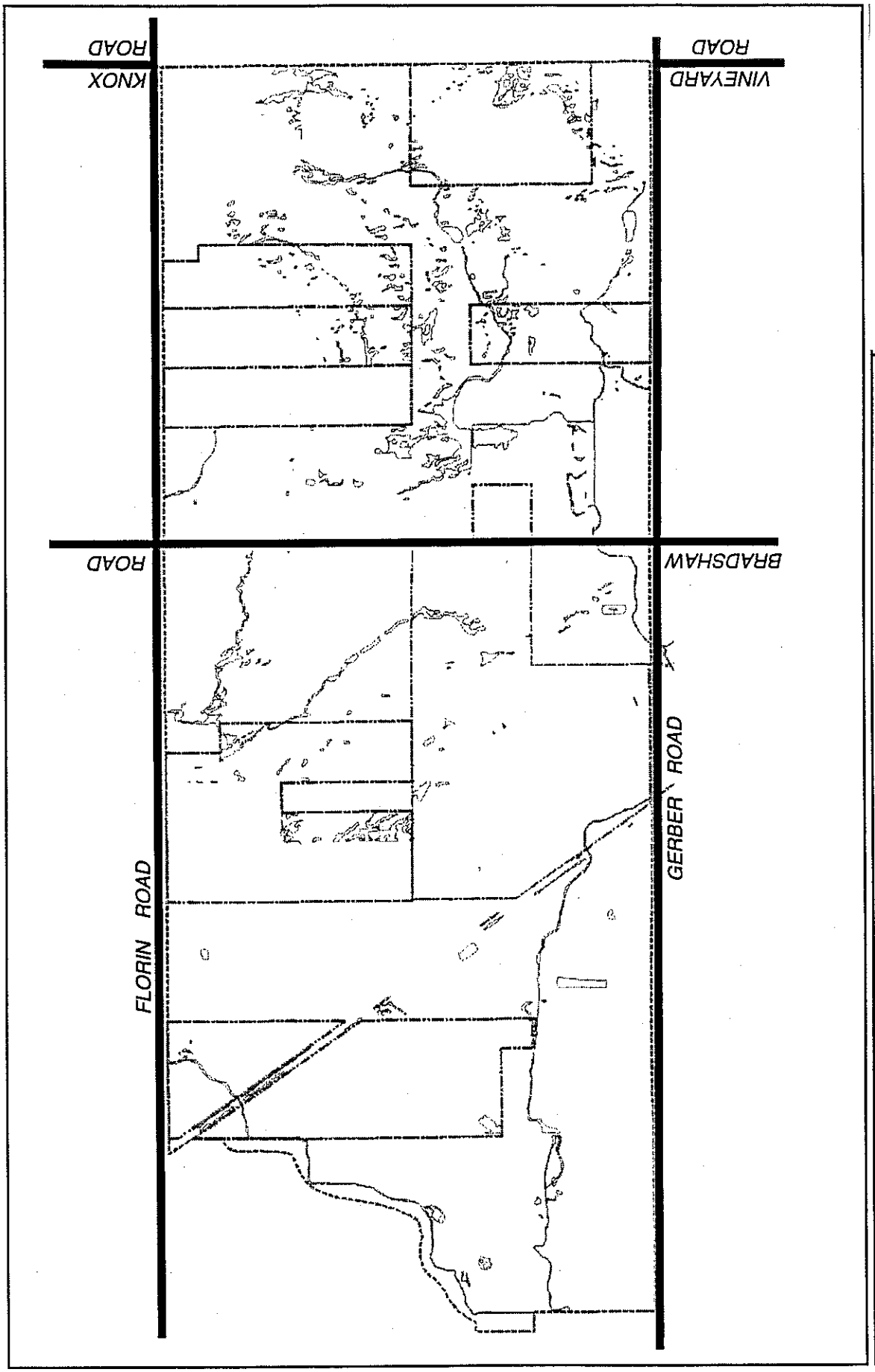

PLATE BR-B

Not To Scale

WETLAND DISTRIBUTION

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Table BR-3

Off-Site Wetlands within Elder and Gerber Creeks and Basin E-20

Wetland Type	Channel	Basin E-20	Total
Vernal Pool	1.30	1.40	2.70
Seasonal Wetland	1.10	0.05	1.15
Drainage Swale	0.10	-	0.10
Perennial Creek	3.10	0.48	3.58
Total	**5.6**	**1.93**	**7.53**

Special Status Species.

For the purposes of this document, the term special-status is defined to include those species which are:

- listed (or formally proposed for, or candidates for listing) as threatened or endangered under the federal Endangered Species Act;
- listed (or candidates for listing) as threatened or endangered under the California Endangered Species Act;
- designated as endangered or rare, pursuant to California Fish and Game Code (§1901);
- designated as fully-protected, pursuant to California Fish and Game Code (§3511, §4700, or §5050); or
- designated by the California Department of Fish and Game as species of special concern.

Special-Status Species Determination.

Special-status species determinations were based on a review of pertinent literature and field surveys. The following data sources were reviewed prior to the special-status species surveys:

- *The Natural Diversity Data Base* (NDDB) (California Department of Fish & Game 1993).
- *Inventory of Rare and Endangered Vascular Plants of California*, 4th edition (California Native Plant Society 1988).
- Aerial photography (see above).
- "Elk Grove, California" topographic quadrangle, scale: 1:24,000, (U.S. Geological Survey 1968, photo-revised 1979).

- *California's Wildlife, Volume 1 (Amphibians and Reptiles), Volume 2 (Birds), and Volume 3 (Mammals)* (CDFG 1988, 1990a, 1990b).
- *Soil Survey of Sacramento County* (U.S. Department of Agriculture, Soil Conservation Service 1993).
- Wetland delineation for proponent parcels.

Field surveys were conducted by qualified biologists during appropriate survey seasons. Plant surveys were conducted by walking meandering transects throughout the property focussing on areas with the highest potential of supporting special-status species. Aquatic invertebrate surveys were conducted with a "D-ring" dip net (20 x 24 mesh/inch). Amphibians were sampled using both "D-ring" dip nets and a two-person seine. Surveys for other vertebrate species (i.e., reptiles and birds) were based upon visual observation.

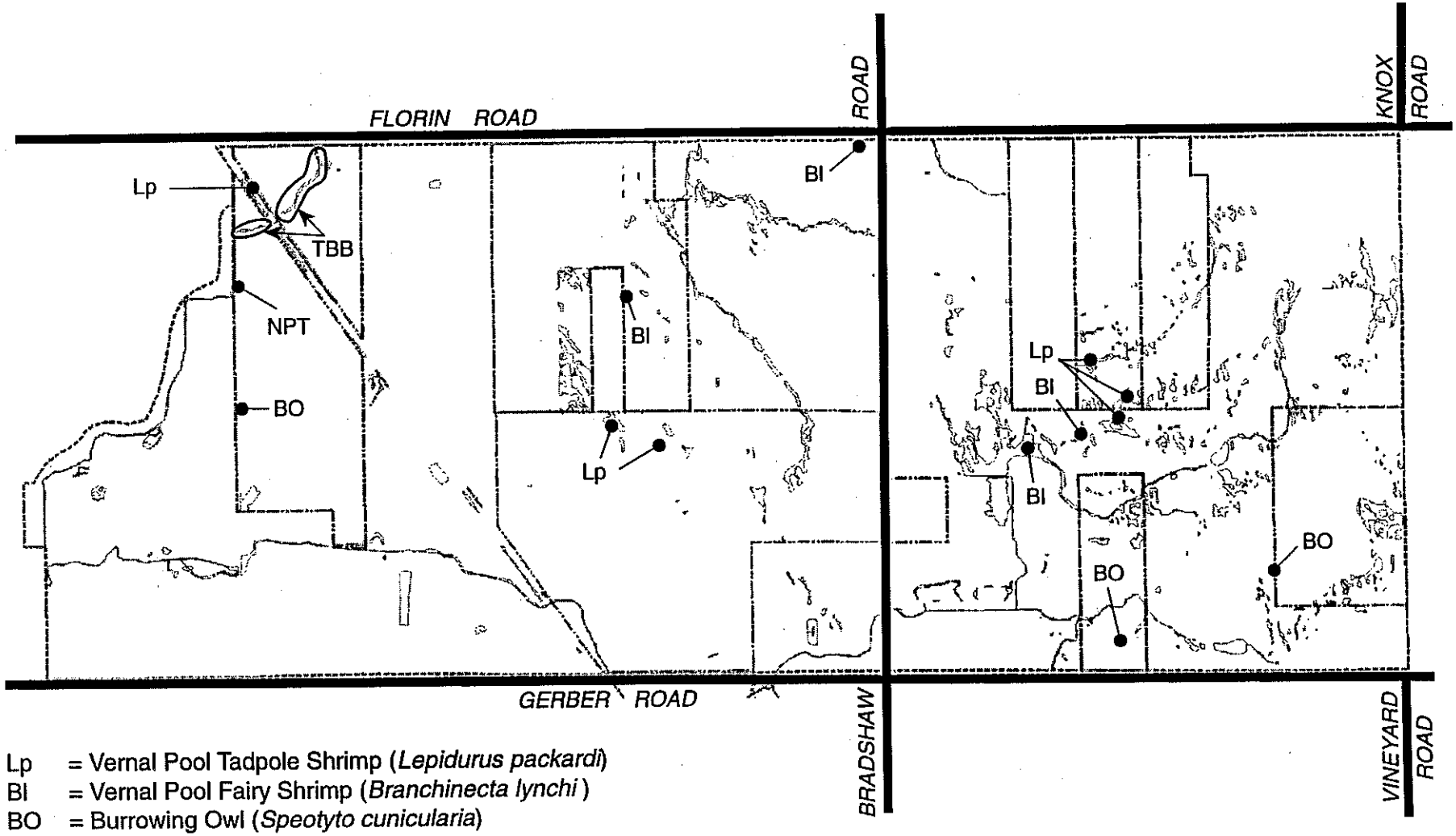
With the exception of surveys for federally-listed aquatic invertebrates, determinate surveys for certain special-status species were conducted within the U.S. Home Corporation Property, Saca Properties, Morvai Property, East Bradshaw/Gerber Associates Property, and Winncrest Homes Property. Aquatic invertebrate surveys, conducted on two or three sampling occasions on these properties were not conducted with adequate frequency (biweekly) or duration (two wet seasons) to constitute determinate surveys under U.S. Fish and Wildlife Service survey guidelines.

No determinate special-status species surveys were conducted on the Courey and Florin Investors Property. Due to access limitations, determinate special-status species surveys were not conducted on non-participating properties.

Survey Results.

Based on the habitat characterization compiled for the plan area, and consideration of specific habitat requirements and geographic ranges, a list of potentially-occurring special-status plant and animal species was compiled (Table BR-4). An inventory of the plant and animals species observed on each surveyed property is included as Table BR-5. Plant and animal species lists are not available for the Florin Investors Property. The locations of special-status species actually observed during field surveys are shown in Plate BR-C.

Plants. Six special status plants, all associated with wetlands, may potentially occur within the Plan Area. These species are Boggs Lake hedge-hyssop (*Gratiola hetersepala*), Ahart's dwarf rush (*Juncus leispermus var. ahartii*), Greene's legenere (*Legenere limosa*), slender Orcutt grass (*Orcuttia tenuis*), Sacramento Orcutt grass (*Orcuttia viscida*) and Sanford's arrowhead (*Sagittaria sanfordii*). None of these species were observed during surveys. As noted previously, the Florin Investors property was not surveyed.



Lp = Vernal Pool Tadpole Shrimp (*Lepidurus packardi*)
Bl = Vernal Pool Fairy Shrimp (*Branchinecta lynchi*)
BO = Burrowing Owl (*Speotyto cunicularia*)
TBB = Tricolored Blackbird (*Agelaius tricolor*)
NPT = Northwestern Pond Turtle (*Clemmys marmorata marmorata*)

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SPECIAL-STATUS SPECIES OBSERVED

N

PLATE BR-C

Not To Scale

TABLE BR-4 North Vineyard Station Specific Plan - Potentially Occurring Special-Status Species

Common Name	Scientific Name	Federal Status	State Status	Habitat Description
Plants				
Boggs Lake hedge-hyssop	*Gratiola heterosepala*	*	CE	vernal pool
†Ahart's dwarf rush	*Juncus leiospermus var. ahartii*	*	-	vernal pool
†Greene's legenere	*Legenere limosa*	*	-	vernal pool
Slender Orcutt grass	*Orcuttia tenuis*	FPT	CE	vernal pool
Sacramento Orcutt grass	*Orcuttia viscida*	FPE	CE	vernal pool
†Sanford's arrowhead	*Sagittaria sanfordii*	*	-	creeks, ditches
Invertebrates				
Vernal pool fairy shrimp	*Branchinecta lynchi*	FT	-	vernal pool, seasonal wetland
Vernal pool tadpole shrimp	*Lepidurus packardi*	FE	-	vernal pool, seasonal wetland
Valley elderberry longhorn beetle	*Desmocerus californicus dimorphus*	FT	-	elderberry shrubs
Amphibians				
California tiger salamander	*Ambystoma californiense*	FC	CSC	seasonal pools & adjacent grassland
Western spadefoot toad	*Scaphiopus hammondi*	*	CSC	seasonal pools & adjacent grassland
Reptiles				
Northwestern pond turtle	*Clemmys marmorata marmorata*	*	CSC	perennial creeks, ponds
Giant garter snake	*Thamnophis gigas*	FT	CT	ditches, sloughs, marshes
Birds				
White-tailed kite	*Elanus leucurus*	-	CFP	woodland, grassland
Northern harrier	*Circus syaneus*	-	CSC	marsh, grassland
Sharp-shinned hawk	*Accipiter striatus*	-	CSC	woodland
Cooper's hawk	*Accipiter cooperii*	-	CSC	woodland
Swainson's hawk	*Buteo swainsoni*	-	CT	grassland, riparian
Ferruginous hawk	*Buteo regalis*	*	CSC	grassland
Golden eagle	*Aquila chrysaetos*	-	CFP, CSC	grassland
Merlin	*Falco columbarius*	-	CSC	woodland, grassland
Prairie falcon	*Falco mexicanus*	-	CSC	grassland

TABLE BR-4 (C0NT)

North Vineyard Station Specific Plan - Potentially Occurring Special-Status Species (continued)

Common Name	Scientific Name	Federal Status	State Status	Habitat Description
Mountain plover	*Charadrius montanus*	FC	CSC	grassland, pasture
Long-billed curlew	*Numenius americanus*	*	CSC	grassland, pasture
Burrowing owl	*Speotyto cunicularia*	-	CSC	grassland
Short-eared owl	*Asio flammeus*	-	CSC	marsh, grassland
Loggerhead shrike	*Lanius ludovicianus*	*	CSC	grassland, woodland
Tricolored blackbird	*Agelaius tricolor*	*	CSC	marsh, grassland

Status Codes:

FE - Federally listed, Endangered.

FT - Federally listed, Threatened.

FPE - Formally Proposed for federal listing as Endangered.

FPT - Formally Proposed for federal listing as Threatened.

FC - "Taxa for which the Service has on file enough substantial information on biological vulnerability and threat(s) to support proposals to list them as endangered or threatened species."

CE - California listed, Endangered.

CT - California listed, Threatened.

CFP - California Department of Fish and Game Fully Protected Species (§3511-birds, §4700-mammals, §5050-reptiles/amphibians).

CSC - California Department of Fish and Game Species of Special Concern.

* - No longer considered a federal candiate species for lisitng as threatenend or endangered (U.S. 1996)

† - No longer considered a special-status, but has been retained on this list because the species was targetted during previous surveys.

PLATE BR-5 North Vineyard Station Specific Plan - Special-Status Species Survey Results (Participant Properties)

	Plants	Invertebrates	Amphibians	Reptiles	Birds
U.S. Home Corporatin	none observed	none observed	none observed	Northwestern Pond Turtle	Tricolored Blackbird (nest) Burrowing Owl (nest) Loggerhead Shrike (forage)
Morvai	none observed	Vernal Pool Fairy Shrimp	none observed	no suitable habitat present	none observed
Winncrest Homes	none observed	Vernal Pool Tadpole Shrimp	none observed	none observed	none observed
East Bradshaw/ Gerber Associates	none observed	none observed	none observed	no suitable habitat present	Burrowing Owl (nest)
Saca	none observed	none observed (West & East) not surveyed (South)	none observed	no suitable habitat present	Burrowing Owl (nest) Northern Harrier (forage) Tricolored Blackbird (forage)
Florin Investors	has not been surveyed	Vernal Pool Tadpole Shrimp	has not been surveyed	no suitable habitat present	has not been surveyed
Courey	no suitable habitat present	no suitable habitat present	no suitable habitat present	no suitable habitat present	none observed during one visit

Invertebrates. Of the three special-status invertebrate species that may occur within the Plan area, vernal pool fairy shrimp (*Branchinecta lynchi*) and vernal pool tadpole shrimp (*Lepidurus packardi*) were observed within the participating properties. No elderberry shrubs, primary host plant of the valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) were observed within the Plan Area. Among the participating properties, vernal pool fairy shrimp and vernal pool tadpole shrimp were found on the Morvai, Winncrest Homes and Florin Investors properties. The wetlands of the Saca property have not been surveyed. No special status invertebrates were found on the U.S. Homes property.

Amphibians. Two special status amphibians, the California tiger salamander (*Ambyostoma californiense*) and the western spade foot toad (*Scaphiopus hammondi*), have the potential to occur within the project site. Both species prefer seasonal wetlands adjacent to grasslands.

Reptiles. Two special-status reptiles may occur within the Plan Area. These are the northwestern pond turtle (*Clemmys marmorata marmorata*) and the giant garter snake (*Thamnophis gigas*). Habitat for northwestern pond turtle is found in Elder and Gerber creeks, which flow through the western and southern portions of the Plan Area, respectively. During surveys, a northwestern pond turtle was observed at the U.S. Homes Corporation property (Elder Creek). The reach of Gerber Creek within the Winncrest Homes property also provides potential habitat for this species.

Both reaches of the creeks also support potential habitat for giant garter snake. No giant garter snakes were observed during surveys of the Plan Area.

Birds. Of the 15 special-status birds that may occur within the Plan Area, nesting or foraging habitat for seven species occurs on the site. This information is presented on Table BR-6. Suitable nesting and foraging habitat is also present within the non-participant properties of the Plan area; however, no determinate surveys were conducted within those parcels.

Table BR-6
Potential Habitats for Special Status Bird Species Within the Plan Area

	Northern Harrier	Burrowing Owl	Loggerhead Shrike	Swainson's Hawk	Cooper's Hawk	White Tail Kite	Tricolored Blackbird
U.S. Home Corporation	nesting and foraging	nesting * and foraging	nesting and foraging	foraging	foraging	foraging	nesting and foraging* (1992,93)
Morvai	nesting and foraging	nesting and foraging	foraging	foraging	foraging	foraging	foraging
Winncrest Homes	nesting and foraging	nesting and foraging	nesting and foraging	foraging	foraging	foraging	
E. Bradshaw/ Gerber Assoc.	nesting and foraging	nesting and foraging* (1993)	foraging	foraging	foraging	foraging	foraging
Saca	nesting and foraging	nesting* (south parcel, 1993) and foraging	nesting and foraging	foraging	foraging	foraging	foraging * (east parcel, 1995)
Courey		nesting and foraging	nesting and foraging				
Florin Investors	not surveyed	not surveyed	not surveyed	not surveyed	not surveyed	not surveyed	not surveyed

* species observed (date, if appicable)

Mammals. Due to current and historic land-use practices (i.e., agricultural, rural residential, etc.), no special-status mammals are expected to occur within the Plan Area.

The survey methods and survey dates for each participating parcel are presented on Table BR-7.

Regulatory Framework.

Sacramento General Plan

All specific plans, including North Vineyard Station, are required to be consistent with policies in the Sacramento County General Plan. The General Plan sets forth several policies

TABLE BR-7

North Vineyard Station - Special Status Species Surveys Protocols and Dates within Participating Properties

	Survey Protocol	U.S. Home Corporation	Morvai	East Bradshaw/ Gerber Associates	Saca	Winncrest Homes	Courey	Florin Investors
Plants	Observation	05/02/95 06/15/95 4/95	05/11/95 0 6/15/95 4/93	05/11/95 06/15/95 04/27/93	05/08/95 06/15/95 4/93	05/21/93 05/06/93 04/15/92	not surveyed no habitat	not surveyed
Invertebrates	Dip Net or Seine	02/16/93 04/15/92	02/12/93 04/15/92	02/12/93 04/15/92	02/16/93 04/17/92	02/16/93 04/15/92 04/17/92	not surveyed no habitat	02/16/93
Reptiles	Observation	04/21/95	n/a	n/a	n/a	04/15/92 04/17/92	not surveyed no habitat	no habitat
Amphibians	Dip Net or Seine	04/17/92	04/11/95 04/15/92	04/11/95 04/15/92	04/11/95 04/17/92	04/12/93 04/15/93 04/17/93	not surveyed no habitat	not surveyed
Birds	Observation	4/11/95 5/2/95 6/15/95 5/14/93 6/18/92	4/11/95 5/11/95 6/15/95	4/11/95 5/11/95 6/15/95 5/14/93 6/18/92	4/11/95 5/8/95 6/15/95	5/6/93 5/21/93 4/15/92 6/18/92	3/20/96	not surveyed

relating to the preservation of wetlands, including requirements to ensure no net loss of marsh or vernal pool acreage, values or functions (Policy CO-83), and requirements to preserve vernal pools on-site (CO-84). The replacement and management of vernal pools through mitigation banking is also addressed in the General Plan (Policies CO-86 through CO-101).

The Open Space Section of the Specific Plan proposes the following wetlands policies:

1. Except where off-site mitigation is allowed, all wetlands to be retained shall be contained within designated open space areas shown in the Specific Plan.

2. All activities within jurisdictional wetlands shall be in accordance with the applicable Section 404 U.S. Army Corps of Engineers permit.

3. Development shall be planned and carried out in a manner that to the extent possible preserves wetlands and their functional value. Preservation of small wetlands isolated by development greatly diminishes their functional value and is therefore undesirable.

4. Natural area buffers will be provided around the periphery of constructed wetlands in order to maintain their value to wildlife. While the precise dimensions of these buffers will vary depending on the type of habitat buffered and adjoining land uses, the goal is that the buffers will average a minimum of 50 feet in width. These buffers shall be maintained in their natural state and landscaping activities such as watering, mowing, or planting ornamental species shall not be allowed. It is further intended that the construction of structures or roads within buffers be restricted. Construction of low-impact passive recreation facilities such as nature trails, waterfowl viewing areas, etc is considered compatible within these buffers.

5. Temporary fencing shall be installed along the boundary of the wetland preserve areas prior to construction, grading, movement of material or machinery onto the site, or issuance of any construction permits for abutting properties. The fencing shall not be removed until construction when necessary.

6. Passive recreation facilities, such as hiking or bicycle trails, shall be designed to avoid impacts to wetlands and shall be approved by appropriate state and federal agencies prior to construction when necessary.

7. No grading, planting of non-native vegetation, vegetation removal, structures, fences, dams, fills, ponds, or excavations shall occur within wetland preserve areas, except for specifically approved activities.

8. Where impacts to wetlands cannot be avoided or where preserved wetlands would be relatively small and isolated by development, compensation shall occur as required by the U.S. Army Corps of Engineers.

9. Where wetland habitat must be compensated, a mitigation plan will be prepared that setsforth the goals, objectives and procedures for accomplishing the mitigation. Each plan must establish criteria for judging the relative success of the mitigation effort, set forth a monitoring plan and provide a mechanism for the long-term management of the created habitat.

10. Detailed wetland delineations shall be completed and verified by the U.S. Army Corps of Engineers for each property prior to its development.

Clean Water Act Section 404 Permit Guidelines.

Development of private property and County drainage improvement projects that impact wetlands and waters of the U.S. within the Specific Plan area will be subject to Clean Water Act (CWA) Section 404 permits as authorized by the U.S. Army Corps of Engineers (Corps).

The CWA protects "wetlands" and other "waters of the United States" by forbidding the discharge of fill material into them without a permit issued by the Corps (33 U.S.C. §1311, CWA §301(a)). In a broad sense, the permitting program is designed to prevent the placement of fill or other materials into and excavation of wetlands or other waters, including swales and drainages, and to define mitigation requirements in the event that fill and related impacts to wetlands cannot be avoided. The specific plan area will be developed over the long term. All projects, public and private, are required to comply with CWA permitting requirements in effect at the time the actual impacts occur and a permit is required.

Two types of permits are used to authorize fill in wetlands, General Permits (e.g., Nationwide Permits) and Individual Permits. General permits are pre-authorized permits for specific categories of activities that have minimal impacts on aquatic resources. In those circumstances where an activity cannot be authorized using a general permit, an individual permit would be required. Processing this type of permit is usually more involved than with a general permit. This process provides opportunities for public review, requires preparation of an alternatives analysis per EPA Section 404 (b)(1) Guidelines, and compliance with the National Environmental Policy Act (NEPA).

All development (both public and private) within the Specific Plan Area affecting wetlands will require a Section 404 permit. Depending on the degree of impact, the Corps could authorize these projects through general or individual permits as explained above.

U.S. Fish and Wildlife Service Guidelines.

When a project impacts waterways or wetlands the U.S. Fish and Wildlife Service recommends full mitigation for impacts. In order of preference, the Service requires adherence to the following mitigation sequence: 1) Avoiding the impact; 2) Minimizing the impact; 3) Rectifying the impact; 4) Reducing or Eliminating the impact over time; and 5) Compensating for the impacts. This mitigation sequence is consistent with the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA).

Wetlands determined to be fairy shrimp habitat (i.e., vernal pools and seasonal wetlands) are required to be mitigated by creating new fairy shrimp habitat at a 1:1 ratio, and acquiring fairy shrimp habitat at a ratio of 2:1. The type of mitigation and the ratios may change when the Service makes the final determination on which wetland represents fairy shrimp habitat. Actual mitigation acreages may change based on regulations in effect at the time the wetlands are impacted and will be subject to agency review and approval. The U.S. Fish and Wildlife Service mitigation guidelines for fairy shrimp are discussed further in the Impacts to Special Status Species "sub-section.

California Department of Fish and Game Policies and Guidelines.

Under Section 1600 of the California Fish and Game Code, the California Department of Fish and Game (CDFG) must authorize any development projects that divert, obstruct or change the natural flow, bed, channel, or bank of any river, stream or lake that CDFG finds to support or benefit fish or wildlife resources.

Section 1600 of the Fish and Game Code is designed to protect and conserve fish and wildlife resources of the state. For any development that may adversely affect any river, stream or lake, a Streambed Alteration Agreement must be submitted to CDFG pursuant to Section 1603 of the California Fish and Game Code. Construction activities for such development projects cannot begin until CDFG finds that the project will not substantially adversely affect an existing fish or wildlife resource or until CDFG's proposals for fish and wildlife protection measures, or the decisions of a panel of arbitrators, have been incorporated into the development projects.

Applicants are required to enter into a Streambed Alteration Agreement with the California Department of Fish and Game prior to any activities that divert, obstruct or change the natural flow, bed, channel, or bank of any river, stream or lake within its jurisdiction. For the project plan area, modifications to Elder and Gerber Creeks and any drainage swales that have a defined bed and bank would require a Streambed Alteration Agreement.

Wetland Impacts and Mitigation Options.

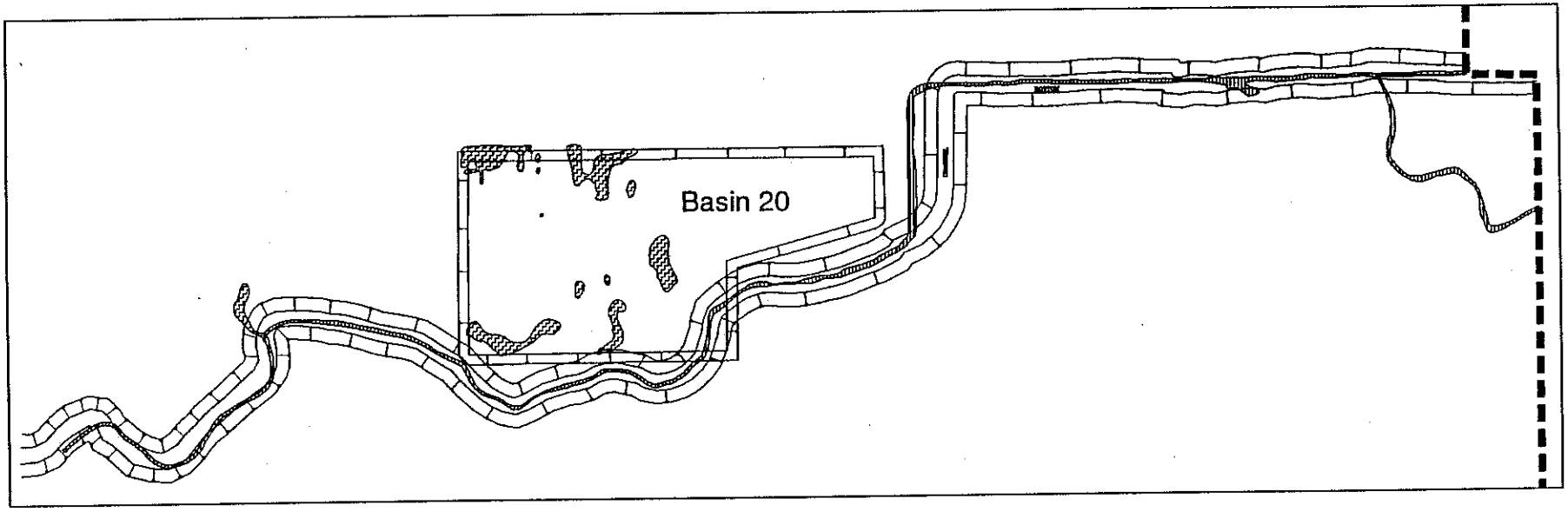
Two components of the project will impact wetlands: the development of the proposed land uses and the channel modifications to Elder and Gerber creeks. As shown Tables BR-8 and BR-9 , the Specific Plan development would impact 51.0 acres of wetlands on-site and 7.53 off -site acres (58.53 total acres).

Elder Creek and Gerber Creek will be directly and indirectly impacted by channel excavation and the construction of paths and landscaping within the creek corridor. Those portions of the creek outside of the creek corridor would be indirectly impacted due to the elimination of their water source. Adjoining vernal pools and seasonal wetlands within the corridor would also be removed. Off-site wetlands are depicted on Plates BR-D, BR-E and BR-F.

The vernal pools, seasonal wetlands, drainage swales and freshwater marsh will displaced by residential development and the installation of roadways and public infrastructure.

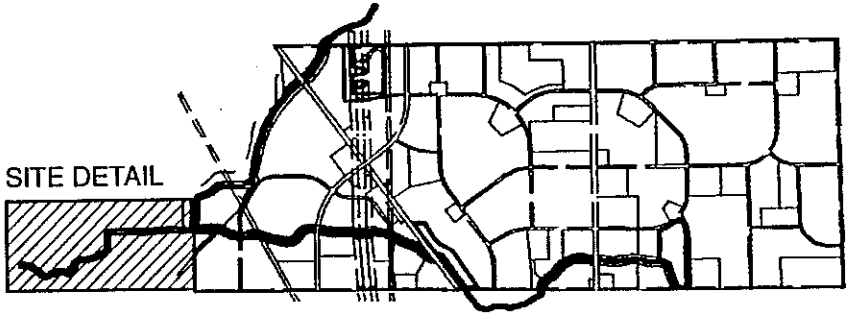
Table BR-8
Wetland Impact Acreages within the Specific Plan Area

Wetland Type	Existing Wetlands	Drainage Master Plan	Specific Plan	Total Impacts
Vernal Pool	18.0	0.1	7.9	8.0
Seasonal Wetland	18.0	2.3	15.7	18.0
Freshwater Marsh	2.0	0.0	2.0	2.0
Drainage Swale	7.0	0.0	7.0	7.0
Perennial Creek	6.0	5.0	1.0	6.0
Total	**51.0**	**7.4**	**43.6**	**51.0**



Wetlands to be Impacted by County Project

- Vernal Pool - 1.28 Ac.
- Elder Creek - 0.06 Ac.
- Gerber Creek - 1.63 Ac.



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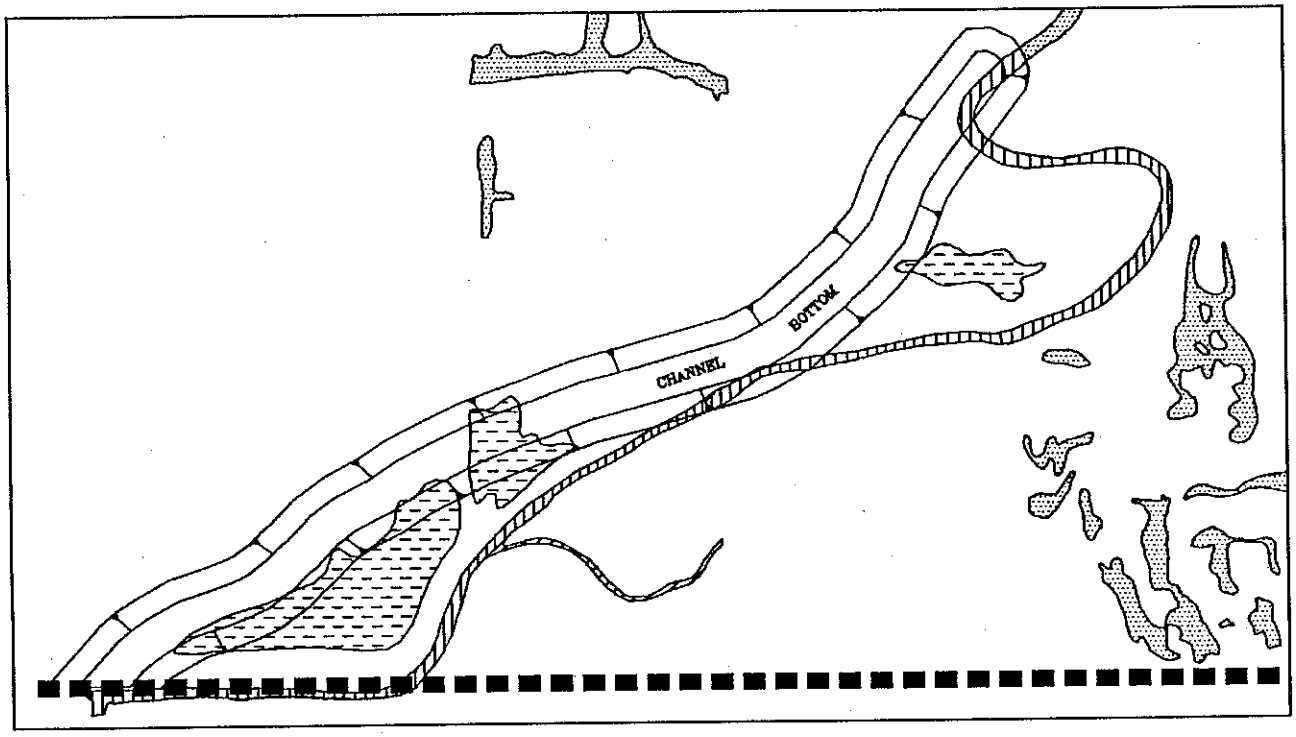
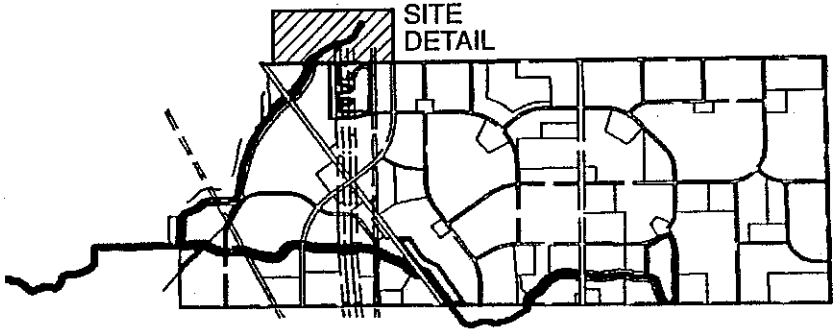
NORTH VINEYARD STATION
OFF-SITE WETLAND IMPACTS - DOWNSTREAM

N

PLATE BR-D

SCALE IN FEET
0 250 500





Wetlands to be Impacted by County Project

- Seasonal Wetland - 1.13 Ac.
- Elder Creek - 0.67 Ac.
- Drainage Swale - 0.05 Ac.

Wetlands Not Impacted by County Project

- Wetland

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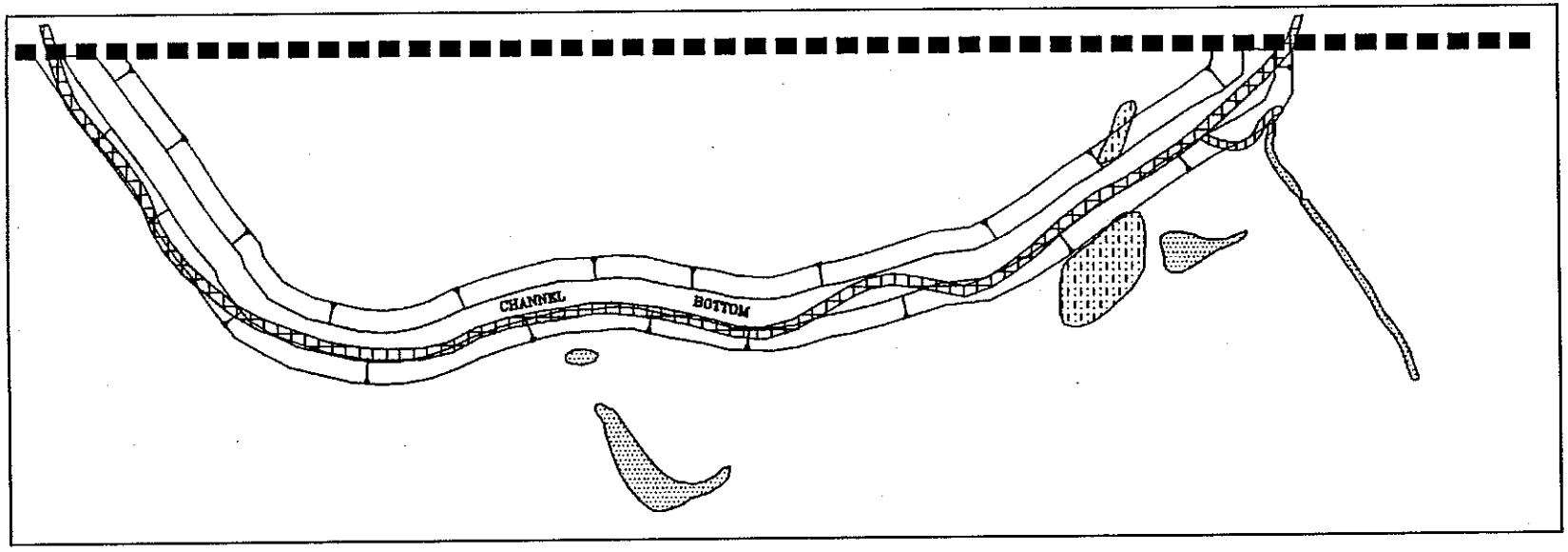
NORTH VINEYARD STATION
OFF-SITE WETLAND IMPACTS - NORTH OF FLORIN ROAD

N

PLATE BR-E

SCALE IN FEET 0 125 250



Stock Pond

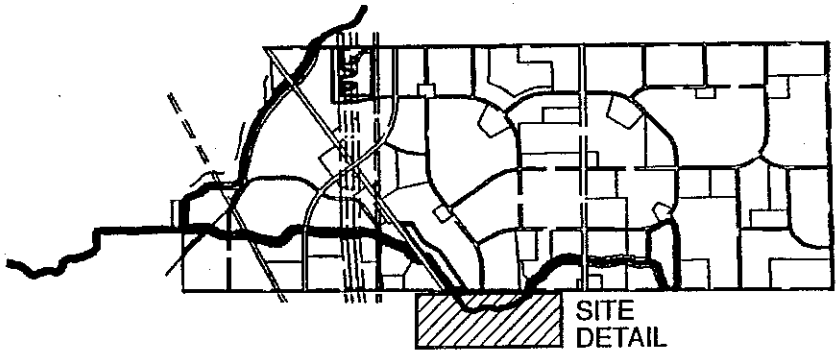
Wetlands to be Impacted by County Project

Drainage Swale - 0.03 Ac.

Gerber Creek - 0.72 Ac.

Wetlands Not Impacted by County Project

Wetland



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NORTH VINEYARD STATION
OFF-SITE WETLAND IMPACTS - SOUTH OF GERBER ROAD

N

PLATE BR-F

SCALE IN FEET
0 125 250

Table BR-9
Off-Site Wetland Impacts (Drainage Project)

Wetland Type	Channel	Basin E-20	Total
Vernal Pool	1.30	1.40	2.70
Seasonal Wetland	1.10	0.05	1.15
Drainage Swale	0.10	-	0.10
Perennial Creek	3.10	0.48	3.58
Total	**5.6**	**1.93**	**7.53**

Vernal Pool and Seasonal Wetland Impacts

As shown on Tables BR-8 and BR-9, the project would impact 36 acres of vernal pools and seasonal wetlands on-site and off-site 3.85 acres (39.85 acres total). Because determinate surveys have not been performed, all vernal pools and seasonal wetlands are assumed to represent fairy shrimp habitat.

The project proposes to compensate for wetland impacts rather than avoid, minimize, rectify or reduce/eliminate impacts as required by CEQA and U.S. Fish and Wildlife Service policy. All wetlands are proposed to be mitigated (compensated for) off site. Off site mitigation usually occurs under two scenarios: participation in an agency approved mitigation bank or construction of wetlands on purchased land. Although off-site mitigation of the project site's vernal pools and seasonal wetlands is not a preferred mitigation strategy under CEQA or Service Guidelines, fully mitigating wetlands off site may be acceptable to the decision makers and the permitting agencies. Further, this approach could satisfy the "no net loss of wetlands" policy required by Sacramento County.

Consistent with U.S. Fish and Wildlife Service Guidelines, these wetlands are required to be mitigated by creating fairy shrimp habitat BR-9 at a 1:1 ratio, acquiring fairy shrimp habitat at a USFWS approved habitat mitigation bank at a ratio of 2:1. As shown on Tables BR-8 and BR-9 acres of in-kind wetlands creation and acquisition of an additional 79.7 acres would be required to mitigate the loss of wetlands from the site.

Impacts to vernal pools and seasonal wetlands will occur as individual projects are developed. If off-site mitigation is adopted by the Board of Supervisors, an Off-site

Mitigation Plan for each development will be required. The following describes the content of these plans.

Off-site Mitigation Plan. In consultation within the U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service, an Off-site Wetland Mitigation Plan shall be prepared for each project. All vernal pools and seasonal wetlands shall be mitigated off-site at an agency approved mitigation bank or other property approved by the regulatory agencies. The Plan shall incorporate the following components.

- A detailed wetland delineation verified by the U.S. Army Corps of Engineers;
- The location of the wetland creation site(s) and the acquisition site(s);
- A detailed map of the wetland creation site(s) showing the acreage, distribution and type of wetlands to be created;
- Vernal pool and seasonal wetlands compensation at ratios sufficient to ensure no net loss of vernal pool and seasonal wetlands acreage, values, and functions. The mitigation ratio for each wetland type shall be specified. Compensation vernal pools and seasonal wetlands shall:
- be supported primarily by direct rainfall, and shall be designed to
- meet or exceed the hydrophytic conditions and operating functions of the existing vernal pools and seasonal wetlands proposed for impact.
- mitigate the loss of special-status species 'habitat, including fairy shrimp, as required by the U.S. Fish and Wildlife Service. For every acre of fairy shrimp habitat impacted, the applicant shall construct one acre of new habitat and purchase two acres of fairy shrimp habitat preservation credits at an agency approved mitigation bank.
- A wetland monitoring and maintenance program prepared according to the requirements of the U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service.

Monitoring: Monitoring shall be designed to determine that sufficient water is available to produce the required periods of inundation and subsequent soil saturation to support a desired biological community. In addition, the monitoring shall determine the need for remedial action in the form of pool modification, including excavation, fill, and/or modification of hydrologic connections, required to improve the pool water balance. Specific performance standards for determining success of the created wetlands shall be

proposed. Monitoring shall occur for at least 5 years, or as required by the U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service.

Short-term monitoring requirements will be established by the Corps Section 404 permit authorization. If the Corps, in consultation with the USFWS, the U. S. Environmental Protection Agency, and the CDFG, determines that wetland development is successful at the end of the prescribed monitoring period (normally 5 years), no further monitoring will be required. Should short-term monitoring indicate that performance standards are not met, plan modifications will be submitted to the Corps for approval. Approved modifications shall be implemented and monitoring will continue until success criteria are met.

Maintenance: A mechanism satisfactory to the Corps shall be formed to fund long-term maintenance of compensation areas to assure that the wetlands are maintained in a natural state. Long-term maintenance shall include restricted recreational use, erosion control, and maintenance trails, or other similar structures.

At the time the applicant obtains a permit to impact wetlands, alternative strategies may have been adopted to mitigate for wetland impacts. The above measures do not preclude the implementation of these new alternatives. The final acreage of offsite mitigation will be determined by the U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service when specific development projects are permitted by those agencies.

According to Sugnet and Associates, the compensation vernal pools and seasonal wetlands would be of higher habitat quality and value than existing vernal pool and seasonal wetland habitats. This is because wetland preserves are protected from agricultural use and other human disturbances and are located in larger preserves.

Implementation of the Off-site Mitigation Plans, or alternative off-site strategies required by the U.S. Army Corps of Engineers or the U.S. Fish and Wildlife Service would reduce wetland impacts to less than significant levels.

Avoidance /On-site Preservation Alternative.

The Specific Plan's proposal to compensate for all vernal pools and seasonal wetlands off-site deviates from the mitigation sequence (avoid, minimize, rectify, or reduce/eliminate impacts before compensating) and conflicts Specific Plan's policy to plan and carry out development in a manner that, to the extent possible, preserves wetlands and their functional values.

On-site preservation of wetlands (i.e., avoiding wetland impacts) is the preferred mitigation

strategy. General Plan Policy CO-84 addresses on-site preservation of wetlands as follows:

> *Policy CO-84. Evaluate feasible on-site alternatives in the environmental review process that reduce impacts on vernal pools and provide effective on-site preservation in terms of minimum management requirements, effective size, and evaluation criteria identified in the report "Sacramento County Vernal Pools" (1990).*

According to Section 6.0 (Open Space) of the Specific Plan, "after evaluating the quality of the vernal pools within the Plan area and analyzing the requirements for on-site restoration, it was determined that sufficient space for viable compensation is not available in the Plan area." The Plan further states that off-site compensation for the loss of seasonal wetlands habitat in areas beyond the Urban Services Boundary will result in vernal pool habitat that is superior to that currently existing on the site.

While preservation of all vernal pools and seasonal wetlands within the Specific Plan area would not be compatible with its urban designation, opportunities for preservation do exist. The most logical areas for preservation are the lands east of Bradshaw Road. Encompassing approximately one square mile (640 acres), this area supports the highest concentration of wetlands and is contiguous with other vernal pool complexes to the east. The wetlands of this area are dispersed across the central and eastern portions of the sector. Only the northwestern and southwestern portions are devoid of significant wetlands. It is noted that drainage swales and an area of freshwater marsh exist in this area. Depending on the ultimate configuration of the wetland preserve, these communities may be preserved as well.

The report *Sacramento County Vernal Pools* states that vernal pool preserves should be 200-acres minimum in size, although smaller preserves may be viable, depending on the species targeted. Based on the wetland configuration of the site, 200 acres would be the minimum acceptable preserve size.

Using this criteria, an On-site Wetland Preservation Plan shall be prepared that preserves at least 200 contiguous acres as a wetland preserve. Preservation shall focus on those wetlands with the highest habitat values. A map showing the wetland preserve boundaries shall be prepared, including the rationale for the boundaries. The plan shall address all aspects of wetland preservation including buffering of incompatible land uses, access, maintenance, monitoring, and mitigation banking. All vernal pools and seasonal wetlands outside the preserve shall be mitigated off site at an agency approved mitigation bank or other site.

The On-site Wetland Preservation Plan will be subject to the approval of the Sacramento County Board of Supervisors, the California Department of Fish and Game, the U.S. Army Corps of Engineers, and the U.S. Fish and Wildlife Service.

Incorporating the vernal pool preserve into the Plan Area would require modification of the Specific Plan land use plan and its related text. This modification would shift the distribution of dwelling units. Through clustering and increased development densities, this alternative could allow densities approaching the 6, 339 dwelling units proposed.

The on-site wetland preservation alternative detailed above is a component of the Environmentally Superior Alternative.

On-site Mitigation Alternative: Powerline Easement Open Space Only.

In addition to off-site mitigation and the on-site preservation alternative above, Sugnet and Associates have developed wetland mitigation strategies based upon the proposed land use plan. These strategies analyze on-site preservation in the proposed open space areas and off-site mitigation. The applicants' land use plan identifies two open space parcels totalling 8 acres within the specific plan area which are available for vernal pool and seasonal wetland mitigation. Wetland mitigation could be located within these open space areas subject to land owner and regulatory agency approvals.

The open space areas are generally located under and adjacent to overhead power lines and are all located on rights-of-way for either the U.S. Department of Energy which is operated by the Western Area Power Administration (WAPA) or the Sacramento Municipal Utility District (SMUD). Almost half of these areas are located on lands which have easements by the U.S. Department of Energy. WAPA has adopted a policy which no longer permits the creation of vernal pool or vernal swales within its rights-of-way. If wetlands were to be constructed at 15% density, less than 0.8 acres of vernal pools or seasonal wetlands could be constructed within these open space areas. As such, this alternative is not considered feasible.

Freshwater Marsh, Drainage Swale and Perennial Creek Impacts

As shown on Table BR-8 and BR-9, freshwater marsh, drainage swales and perennial creeks would be impacted by development of the proposed land uses and the modifications to Elder and Gerber Creeks. The majority of these wetlands are proposed to be mitigated in the widened channels of Elder and Gerber Creeks. Adoption and implementation of the Environmentally Superior Alternative, which includes preservation of at least 200 acres of property containing wetlands, would preserve an undetermined quantity of drainage swales and freshwater marsh that would otherwise be mitigated within the channel.

On-site Mitigation (Proposed Project).

The Specific Plan's preferred channel alternative is an improved naturalized channel with

detention basins. The naturalized channel would have an average depth of eight feet below the existing channel elevation and bottom widths ranging from 12 to 50 feet. The channel would meander through the creek corridor, which would be 150 to 240 feet wide through most of the Specific Plan area. All low water and storm flows would be conveyed in the proposed channel.

According to County Water Resources staff (T. Wegener), construction of the channels and detention basins would be sequential, proceeding downstream to upstream. Future subdivisions or other development would be required to construct channel modifications from their property to the nearest downstream improvements. Given the distribution of property and the foreseeable development schedule, channel modifications to Elder Creek (offsite and within the Plan Area) would likely occur as a single project over one season. Likewise, most of Gerber Creek (CCTR tracks to the Elder Creek confluence) would be modified as a single project. Future modifications to the remainder of Gerber Creek would depend on the development of upstream properties.

The preferred drainage plan would deepen and widen Gerber and Elder Creeks in essentially the same location, allowing the continued existence of the creek corridors. As noted above, modifications to the creek would be phased. Each phase would remove wetlands from the creek and mitigate those impacts within the newly constructed channel. If a channel project creates wetlands in excess of its impact, wetland "credits" may be established. Phasing of wetland mitigation would be subject to regulatory agency approval at the time of impacts.

The new vegetation within the creeks would be emergent marsh (either seasonal or perennial). The emergent marsh within the new channel could be used to mitigate impacts to perennial creek wetlands, freshwater marsh, drainage swales. Seasonal wetlands that do not support fairy shrimp may also be mitigated in the channels. Mitigation is proposed for these wetlands at a 1.3:1 ratio. Vernal pools and seasonal wetlands inhabited by fairy shrimp habitat cannot be mitigated in the channel.

According to Sugnet and Associates, the proposed channel bottoms, at completion of all work within the creeks, would ultimately provide approximately 23 acres of emergent marsh (seasonal and perennial) wetlands. The on-site (15-acres) and off-site (3.68 acres) components of the project would cumulatively impact 18.68 acres of wetlands. Using the 1.3:1 mitigation ratio, 24.3 acres of emergent marsh would be required to mitigate the total wetland impacts of the Specific Plan development. The required mitigation acreage exceeds that proposed by 1.3 acres. Given the scale of the channel improvements within the channels, creating this additional acreage is considered feasible.

At maturity, this quantity of wetlands would adequately mitigate the loss of the in-channel wetlands and may provide for additional mitigation credits for other wetland impacts.

It is important to note that the establishment of wetland vegetation within the channel would be successional. Initially, when water flows are lower (i.e., before build-out of upstream development), the wetland vegetation would be seasonal. As flows increase with development, the wetland areas would remain saturated longer, favoring perennial marsh vegetation. This succession would gradually occur over time, depending on flows, disturbance, variations of the channels and other factors.

Sugnet and Associates states that the emergent marsh in the channel bottom would provide greater habitat diversity than those wetlands being impacted. Volunteer riparian vegetation can be expected to establish along the drainage corridors. The combination of emergent marsh and riparian vegetation would provide diverse habitat for a wide variety of plant and animal species, and, in the long-term, would mitigate for any species impacted during project implementation.

While sufficient wetland acreage would be provided in the modified channel , a period of time would accrue between the wetland impact and replacement wetlands becoming functional. Federal regulatory agencies typically require such temporal losses to be replaced. The 1.3:1 mitigation ratio addresses this impact spacially, but does not address the time vegetation is unavailable as habitat. Channel modifications are expected to occur over a relatively short time (less than one construction season) and are not anticipated to impact any listed species.

A Wetland Mitigation Plan for Elder and Gerber Creeks shall be prepared and incorporated into the Specific Plan. The plan shall include no less than 24.3 acres of emergent marsh, an increase of approximately 1.3 acres over that proposed. This Plan shall address phasing of channel modifications, establishment of wetlands (i.e., passive, active, combination), species composition, maintenance and monitoring. The plan shall require channel bottom and bank materials to be substantially the same as comparable natural streams. Natural arrays of riffles, runs and pools shall be incorporated into the design of the creek channels. Channel topography shall be variable, with slopes of 3:1 to 5:1. The required Plan shall be submitted to the Sacramento County Board of Supervisors, U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service and California Department of Fish and Game for approval prior to its implementation.

Implementation of the channel modifications, with the required additional wetland acreage, would adequately mitigate the loss of all wetlands (18.68 acres) that do not support, or potentially support, fairy shrimp.

In addition to the proposed plan, channel avoidance and off-site mitigation was considered.

Channel Avoidance Alternative.

Avoiding the channels would avoid the removal of approximately six acres of perennial creek wetland. Achieving this reduction would require construction of a bypass channel on one side of the creek to carry the additional flows generated by the proposed development of the Specific Plan. Provided the bypass channel was constructed within upland areas and configured to maintain the hydrology of the existing habitats, wetland impacts within the channels could be largely avoided. According to the Hydrology Report for the project (McKay and Somps, 1995), this alternative was determined infeasible because the existing creek would be too shallow to accommodate the outfall flowlines from the Specific Plan development (see Drainage section). Also, reliance on upstream flows to maintain flows within the creek was not considered feasible since development within the upper portions of the shed would have the same difficulty in achieving gravity drainage into the creek (i.e., deepening of the upstream channel would be required upstream).

Off-site Mitigation Alternative.

As described above, the modified creek channels (proposed design) would create 23 acres of emergent marsh. If this, or another drainage plan with less mitigation acreage is adopted, the modified channels would not support wetland acreage sufficient to mitigate wetland losses from the site. In this circumstance off site mitigation for the excess wetland acreage would be required. As with the vernal pools and seasonal wetlands, mitigation credits could be purchased from an agency approved mitigation bank, or the applicant could purchase land at an off-site location and construct the mitigation wetlands themselves. If the applicant desires to mitigate wetlands off-site, the Off-site Wetland Mitigation Plan (required above) shall be amended to include the off-site wetland acreage. A statement of the need for off-site mitigation shall be prepared and submitted as part of this plan. As stated previously the Off-site Wetland Mitigation Plan would be subject to the review of the Sacramento County Board of Supervisors and applicable regulatory agencies prior to any construction that would impact wetlands.

Table BR-10 reiterates the wetland impacts within the Specific Plan area and shows the off-site mitigation necessary to reduce wetland impacts to less than significant levels.

Table BR-11 shows the off site wetland impacts and the mitigation required. for off site wetland impacts focuses on those wetlands that cannot be mitigated within the creek channels.

Table BR-10
Wetland Mitigation Acreages within the Specific Plan Area

Wetland Type	Existing Wetlands	Drainage Master Plan	Specific Plan	Total Impacts
Vernal Pool	18.0	0.1	17.9	18.0
Seasonal Wetland	18.0	2.3	15.7	18.0
Freshwater Marsh	2.0	0.0	2.0	2.0
Drainage Swale	7.0	0.0	7.0	7.0
Perennial Creek	6.0	5.0	1.0	6.0
Emergent Marsh	0.0	0.0	0.0	0.0
Total	**51.0**	**7.4**	**43.6**	**51.0**

Wetland Type	**Wetland Creation (1:1/1:3)**			**Wetland Acquisition (2:1)**		
	Drainage Master Plan	**Specific Plan**	**Total Mitigation**	**Drainage Master Plan**	**Specific Plan**	**Total Mitigation**
Vernal Pool	0.1	17.9	18.0	0.2	35.8	36.0
Seasonal Wetland	2.3	15.7	18.0	4.6	31.4	36.0
Freshwater Marsh	0.0	0.0	0.0	0.0	0.0	0.0
Drainage Swale	0.0	0.0	0.0	0.0	0.0	0.0
Perennial Creek	0.0	0.0	0.0	0.0	0.0	0.0
Emergent Marsh	6.5	13.0	19.5*	0.0	0.0	0.0
Total	**8.9**	**46.6**	**55.5**	**4.8**	**67.2**	**72.0**

* This acreage will be mitigated on site within the creek channels. It is based on impacts to freshwater marsh (2.0 acres), drainage swale (7.0 acres) and perennial creek (6.0 acres), a total of 15 acres, mitigated at a 1.3:1 ratio.

Table BR-11
Mitigation Acreages for Off-Site Wetland Impacts (Channel Modifications and Basin E-20)

Wetland Type	Wetland Impact Impact	Wetland Creation Creation (1:1/1:3)	Wetland Acquisition (2:1)
Vernal Pool	2.70	2.70	5.4
Seasonal Wetland	1.15	1.15	2.3
Drainage Swale	0.10	0.00	0.0
Perennial Creek	3.58	0.00	0.0
Emergent Marsh	0.00	4.80	0.0
Total	**7.53**	**8.65**	**7.7**
Off site mitigation		**3.85**	**7.7**
On-site mitigation (creeks)		**4.80***	**0.0**

* This acreage is based on impacts to drainage swale (0.10 acres) and perennial creek (3.58 acres), a total of 3.68 acres, mitigated at a 1.3:1 ratio.

Impacts to Special Status Species

Federal Endangered Species Act.

The federal Endangered Species Act's stated purpose is to provide programs to conserve endangered and threatened species and the ecosystems upon which these species depend. To achieve this purpose, the Secretary of Interior, acting through the U.S. Fish and Wildlife Service, has been given a number of duties, including: the listing of species which are determined to be Endangered or Threatened; the designation of critical habitat for those species; the development of Recovery Plans for those species; the consultation with federal agencies whose federal activities, including permitting, may jeopardize the continued existence of the species; the development of Habitat Conservation Plans for those species; and the assurance that no destruction or adverse modification of critical habitat occurs through either private or federal activity.

For those projects requiring federal permits (e.g., Section 404 permit), consultation between the permitting agency and the U.S. Fish and Wildlife Service, pursuant to Section 7 of the Act would be required. If a project would not likely jeopardize the continued existence of a listed species, mitigation would be required that which satisfies reasonable and prudent measures developed by the U.S. Fish and Wildlife Service in consultation with federal agencies. These mitigation measures may include, but are not necessarily limited to:

- the acquisition of replacement habitat at a ratio which assures that no net loss of endangered species habitat occurs,

- the creation or restoration of such habitat and the establishment of conservation easements or other restrictions to assure that the habitat is preserved in perpetuity,

- or the placement of adequate buffers around habitat that may be preserved as part of project implementation.

For those projects not requiring a federal permit to proceed, but whose activities may nevertheless impact a listed species, its habitat, or result in an incidental taking. The project applicant shall comply with applicable endangered species act rules and regulations in effect at the time of the activity including but not limited to Section 10a. Under Section 10a a Habitat Conservation Plan and an implementation agreement is used to establish "an operating program for the conservation, protection, enhancement, mitigation and monitoring of the listed candidate species within the plan area."

Each property shall satisfy the requirements of the federal Endangered Species Act either through the consultation process under Section 7 of the ESA for activities which require a federal permit, or through the development of a Habitat Conservation Plan ("HCP") for potential impacts to endangered species caused by activities not requiring a federal permit.

California Endangered Species Act.

Under the California Endangered Species Act ("CESA") the California Department of Fish and Game ("CDFG") is required to provide protection to threatened and endangered species in California. Under CESA, CDFG is required to add species to and remove species from the CESA list, has the authority to comment on projects being reviewed under CEQA, and coordinates state agency consultation and issuance of take permits and "management authorizations."

In the event that proposed site development requires state agency approval and that would result in the "take" of a threatened, endangered or candidate state species, the CDFG would be required to conduct formal consultation to determine if the proposed activity may jeopardize a listed species continued existence, result in destruction or adverse modification of habitat or result in the incidental taking of listed species. In the case where the CDFG determines that an incidental taking will occur from the proposed activity, the CDFG must provide "reasonable and prudent measures" to minimize the adverse effects of the taking. In the case where no state agency approval is required, the CDFG may issue a "management authorization" to allow the project proponent to take threatened, endangered or candidate species as part of the proposed activity. The management authorization may require

mitigation as the project proponent's responsibility for CESA compliance. These mitigation measures may include acquiring mitigation lands, or contributing funds for the management of habitat.

Vernal Pool Invertebrates

The vernal pool fairy shrimp (*Branchinecta lynchi*) and vernal pool tadpole shrimp (*Lepidurus packardi*) listed under the federal Endangered Species Act as threatened and endangered, respectively, have been identified in several isolated wetlands within the plan area. A project applicant may perform determinate level surveys (based on Service requirements) to identify if any vernal pool fairy shrimp or vernal pool tadpole shrimp occur on the property. Alternatively, a project applicant may assume all vernal pools and seasonal wetlands are habitat for the vernal pool fairy shrimp and vernal pool tadpole shrimp and proceed with Section 7 consultation. For planning purposes it is assumed that all vernal pools and seasonal wetlands are habitat for the vernal pool fairy shrimp and vernal pool tadpole shrimp.

The Service has a programmatic Biological Opinion which it uses to permit projects with relatively small effects on fairy shrimp habitat. Projects that are appended to the Biological Opinion would be mitigated using a combination of habitat preservation and creation as follows:

Preservation component. For every acre of habitat directly or indirectly impacted, at least two vernal pool credits will be dedicated within a Service-approved ecosystem preservation bank, or, based on Service evaluation of site-specific conservation values, three acres of vernal pool habitat may be preserved on the project site. Indirect impacts may include hydrology changes or inadequate buffering of adjacent development.

Creation component. For every acre of habitat directly impacted, at least one vernal pool creation credit will be dedicated within a Service-approved habitat mitigation bank, or, based on Service evaluation of site-specific conservation values, two acres of vernal pool habitat will be created and monitored on the project site as approved by the Service.

Vernal pool habitat and associated upland habitat utilized as on-site mitigation will be protected from adverse impacts and managed in perpetuity or until the Corps, the applicant, and the Service agree on a process to exchange such areas for credits within a Service-approved mitigation banking system.

The Wetland Impacts analysis reflects the above mitigation ratios and, for planning purposes, assumes that all 39.85 acres of vernal pools and seasonal wetlands support vernal pool fairy

shrimp and vernal pool tadpole shrimp.

Preservation of a minimum 200-acre on-site wetland preserve, which is an element of the Environmentally Superior Alternative, would not entirely avoid impacts to shrimp, however, the magnitude of impacts would be substantially reduced. Any remaining mitigation would occur at an agency approved mitigation bank or on land purchased by the applicant. The combined mitigation measures ***will reduce the impacts*** to fairy shrimp ***to a less than significant level.***

Swainson's hawk

The majority of the 1,608 acre Plan Area provides potential foraging habitat for the Swainson's hawk (*Buteo swainsoni*). Only the developed areas and the creek corridors do not are not considered potential foraging habitat. The nearest active Swainson's hawk nest is approximately 6 miles away along Cosumnes River/Deer Creek corridor.

Development of the proposed land uses under all proposed alternatives would eliminate foraging habitat. Habitat losses would be incremental as individual projects were constructed. Each of these developments would eliminate the foraging habitat within its boundaries. Habitat fragmentation due to individual projects may render adjoining areas unsuitable for foraging, depending on the configuration of the project. Preservation of the wetland preserve area would reduce foraging habitat losses by at least 200 acres.

Current California Department of Fish and Game (CDFG) guidelines (1994) require mitigation for losses of Swainson's hawk's foraging habitat within 10 miles of an active nest. For projects within 10 miles of an active nest tree, but greater than five miles from an active nest tree, the guidelines require 0.5 acres of habitat management (HM) land (i.e., foraging habitat) for each acre developed. The project applicant is required to provide for long-term management of habitat management lands at a rate of $400.00 acre. All habitat management lands should be located in areas with a multiple species habitat conservation focus. According to the guidelines, project sponsors who are willing to establish a significant mitigation bank (>900 acres) may be granted special consideration, such as 1.1 acres of mitigation credit for each acre preserved.

Development of the site would be incremental, possibly over a long period of time. Despite this logistical factor, mitigation for Swainson's hawk foraging habitat losses would be best accomplished through establishment or participation in a mitigation bank. Absent this comprehensive approach, individual projects will be required to mitigate for the specific acreage of foraging habitat removed. All mitigation for impacts to Swainson's hawk must

be approved by the California Department of Fish and Game (CDFG).

Other Special-Status Species.

As shown on Table BR-4 , numerous special status species potentially occur within the Specific Plan area.

Using protocol acceptable to the regulatory agencies with authority over these species, determinate surveys for potentially-occurring special-status species or their habitat shall be conducted prior to development and permitting within the Specific Plan area. If any of the species or their habitat are indicated, project/plan-specific mitigation measures shall be developed in consultation with Sacramento County, the California Department of Fish and Game, and/or the U.S. Fish and Wildlife Service to mitigate those impacts to less than significant levels, if possible. The mitigation plan(s) developed for species or habitat preservation shall emphasize a multi-species approach, to the maximum extent possible.

- Where impacts include taking of a federally-listed species, a Section 10, Incidental Take permit, or a Biological Opinion resulting from Section 7 Consultation with another federal agency shall be obtained, and permit conditions implemented.

- Where impacts include taking of a California-listed species, a Section 2081 Management Agreement shall be negotiated with the California Department of Fish and Game, and conditions of that management agreement implemented.

The Specific Plan's preferred land use plan does not incorporate habitat for any of the special status species identified. If surveys reveal the presence of these species, mitigation could not occur on site without major modifications to the Plan. Off site mitigation, if feasible, would be the only alternative capable of reducing impacts to less than significant levels. In the absence of determinate surveys for special status species and the Plan's lack of habitat, developing the Specific Plan would result in potentially significant and unavoidable impacts on special status species. Adoption of the On-site Wetland Preservation Plan (Environmentally Superior Alternative) could reduce impacts on certain species (e.g., western burrowing owls, wetland dependent species) to less than significant levels. This cannot be known with certainty until individual projects are surveyed.

Impacts to Non-listed Species and Habitats.

Development of the proposed Specific Plan would result in the loss of nearly 1,600 acres of habitats used by a variety of more common (non-listed) wildlife species. Given the magnitude of this change, the loss is considered a ***cumulatively significant and unavoidable*** impact of the project. Preservation of wetland/wildlife habitat on site as required by the

Wetland Preservation Plan (Environmentally Superior Alternative) would reduce this impact by at least 200 acres, however, the impact ***would remain cumulatively significant and unavoidable.***

Trees.

As described above in the "Setting" subsection, 48 trees exist within the participating properties. Except for the black walnut trees on the Saca properties and a few large black willows along creek banks all the trees are non-native. The remainder of the Specific Plan area has not been surveyed. Native oaks and other significant trees may occur in these areas and could be potentially impacted by future development. The Specific Plan text (Open Space section) requires numerous measures to protect and preserve native oaks during individual development projects. These measures are as follows:

1. A circle with a radius measurement from the trunk of the tree to the tip of its longest limb shall constitute the dripline protection area of each tree. The longest limb may not be cut back in order to change the dripline. The area beneath the dripline is a critical portion of the root zone and defines the minimum protected area of each tree. Removing limbs that make up the driplines does not change the protected areas.

2. Chain-link fencing or a similar protective barrier shall be installed at least one foot outside the driplines of the oak trees prior to initiating construction, in order to avoid damage to the tree canopies and the root systems.

3. No signs, ropes, cables (except those installed by a certified arborist to provide limb support) or any other items shall be attached to the native oak trees. Small metallic numbering tags for the purpose of preparing tree reports and inventories shall be allowed.

4. No vehicles, construction equipment, mobile home/office, supplies, materials or facilities shall be driven, parked, stockpiled or located within the driplines of oak trees.

5. No grading (grade cuts or fills) shall occur within the driplines of the oak trees.

6. Drainage patterns on the site shall not be modified so that water collects or stands within, or is diverted across, the dripline of any oak tree.

7. No mechanized trenching shall be allowed within the dripline of oak trees. If it is absolutely necessary to install underground utilities within the dripline of an

oak tree, the utility line shall be bored and jacked under the supervision of a certified arborist.

8. The construction of impervious surfaces within the driplines of oak trees shall be stringently minimized. When it is absolutely necessary, porous materials shall be used and/or a piped aeration system shall be installed under the supervision of a certified arborist.

9. No sprinkler or irrigation system shall be installed in such a manner that it sprays water or requires trenching within the driplines of oak trees. An above-ground drip irrigation system is recommended.

10. Landscaping beneath oak trees may include non-plant materials such as bark mulch, wood chips, boulders, etc. The only plant species which shall be planted within the driplines of oak trees are those which are tolerant of the natural semi-arid environs of the trees. A list of such drought-tolerant plant species is available from the Sacramento County Department of Environmental Review and Assessment (DERA). Limited drip irrigation approximately twice per summer is recommended for the understory plants.

The Specific Plan proposes to further protect trees through the following policy:

- *Make every effort to protect and preserve non-oak native (excluding cottonwoods), including heritage trees (trees with a diameter at breast height (dbh), of 19 inches of greater) and/or landmark trees (as defined by the County Tree Ordinance). Native trees other than oaks, which cannot be saved or are removed shall be replaced with in-kind species in accordance with established tree planting specifications and the established replacement/compensation ratio of one 15-gallon tree for every inch dbh of tree removed.*

Implementation of the above mitigation measures would reduce potential impacts to native oak and non-oak native trees to ***less than significant*** levels.

Alternative Drainage Corridor Policies:

During development of the Specific Plan, representatives of the environmental community (Environmental Council of Sacramento (ECOS), Urban Creeks Council, Audubon Society, Sacramento Open Space and California Native Plant Society), formulated 16 alternative drainage corridor policies for Elder and Gerber creeks, 14 of those policies address biological resources and are discussed below. These proposed policies were developed during a series of meetings with the project applicants and County staff (Planning and Community

Development Department and Water Resources Division).

As described previously, the proposed project includes a 150 to 240-foot wide drainage parkway intended to serve the dual purpose of conveying stormwater drainage and providing linear open space for recreational use. The following elements are proposed within the corridor:

- A channel bottom area with a width of 12 to 50 feet, including a meandering low-flow channel.

- A buffer area, with an average width of 50 feet on each side of the channel bottom. This area would include sloped (3:1 to 4.5:1) channel sides, a 10- foot wide paved maintenance road/pedestrian and path on one side, and drought tolerant trees, shrubs, and annual grassland.

Of the four drainage parkway policies proposed by the Specific Plan, one addresses the biological function and appearance of the parkway.

- The Drainage Parkways (i.e., Elder Creek and Gerber Creek) shall be designed as natural-appearing corridors, serving to enhance wetlands and riparian habitats, act as natural flood water detention areas, and function as water quality enhancement features. The Drainage Parkways shall be designed to permit the growth of vegetation that does not impede the design flow characteristics. Periodic clearing is allowed to maintain channel function.

The Specific Plan's conceptual plan for the creek corridors would provide limited opportunities to establish wetland and riparian vegetation with functional wildlife values. This deficiency is related to the narrow corridor width (maximum 240 feet overall) and the recreational uses proposed within the corridor. After accounting for the creek channel, the average buffer width would average approximately 50 feet. This buffer, would contain the creeks' side slopes (banks), a 10-foot wide pedestrian/bicycle/maintenance path, and drought tolerant landscaping (unspecified species). At this width, the corridor would function more as a park, than a functional habitat area. Notwithstanding this limitation, the proposed channel would adequately mitigate the loss of wetlands from the creeks(in terms of acreage).

The alternative policies propose to expand the physical dimensions of the proposed creek corridors and include recommendations to enhance and manage the open space. Alternative policies 2 through 15 pertain directly to the biological resources of Elder and Gerber Creeks.

ALTERNATIVE DRAINAGE CORRIDOR POLICIES

1. *Provide flood control along Elder and Gerber Creek to accommodate peak flow conditions and normal drainage requirements; giving consideration to the overall watershed requirements for any proposed flood control measures. A multi-objective approach to planning channel modifications for flood damage reduction will consider hydrologic, geomorphic, and biological factors that influence stream hydraulics.*

2. *Maintain streamside resource values along Elder and Gerber Creeks, considering resource protection, recreation, education, flood damage reduction requirements and public safety.*

3. *Carry out an integrated design that provides an open space corridor along Elder and Gerber Creeks of sufficient size to enhance biodiversity, accommodate wildlife movement, sustain healthy ecosystems, and provide mitigation for loss of habitat and open space. Urban runoff from residential/commercial development has been shown to be toxic to aquatic organisms. State and federal water quality regulations increasingly require communities to prevent toxic urban runoff from impacting aquatic habitats at potentially tremendous public expense. Designing developments with pollution prevention in mind is the most economical and effective approach in urban creek settings. Wide vegetation buffers, an average of 600 feet, will increase the options available to water quality managers to remove harmful sediment, nutrients, pesticides, metals and other chemicals from non-point source runoff before they reach the streams.*

4. *The drainage parkways of Elder and Gerber Creeks shall be designed and maintained as a natural appearing corridor, serving to enhance wetlands and riparian habitats, act as natural flood water detention areas, function as water quality enhancement features, and provide wildlife habitat and wildlife corridors. The channel design should take into account the benefits of more natural channel morphology. The parkway's channel and banks should be designed with appropriate roughness factors and width to permit mature growth of native riparian and native hydrophytic (wetland) vegetation yet still convey regular flood flows. The use of native plant species and locally native materials is encouraged both inside and in the corridor outside the channel.*

5. *To the maximum extent practical, retain and create topographic diversity and variation when channels are realigned or modified, including maintaining meandering characteristics, varied berm width, naturalized and varied side slopes (i.e., 3:1 to 5:1), and a varied channel bottom elevation. Channel width should be*

sufficient to provide room for natural stream movement over time. The materials comprising steam bottoms and banks shall be the same or similar to those found in comparable natural streams (particularly reference streams selected by the California Department of Fish and Game for the purposes of biological assessment). Likewise, a natural array of riffles, runs and pools shall be preserved or created to provide habitats which support a diverse aquatic community.

6. *Avoid direct discharge of sediment laden storm runoff to stream waters. Excess sediment deposition in streams destroys the natural assemblage of aquatic organisms that would otherwise inhabit a healthy ecosystem. To avoid physical aquatic habitat degradation, sediment control shall be an element of stream corridor design standards and runoff management. Detention basins or other catchment systems which settle out sediment shall be accessible for routine sediment removal to ensure the long-term viability of these systems.*

7. *Provide for monitoring of the ecological health of the streams. Baseline water quality monitoring shall be conducted at least quarterly in the year prior to commencement of stream modifications, land grading or building construction. Biological assessment techniques shall be a component of this initial monitoring, as well as subsequent monitoring, to measure the suitability of water quality and habitat for benthic (bottom dwelling) invertebrates, algae and fish. Quarterly monitoring shall continue for a minimum of five years, or until 75% of the development in the watershed is completed, whichever is longer. Throughout this period, incidence of perturbations in stream quality shall be investigated using appropriate biological, chemical or toxicity testing to identify and remediate the source(s) of the problem(s).*

13. *Establish a permanent open space corridor with a width of 600 feet along Elder and Gerber Creek extending from the City Limits northeastward to the upstream watershed boundaries (if and when development occurs upstream). The width of the open space corridor may vary depending on:*

    **unavoidable physical or man-made constraints occurring in the immediate area;*
    **quality and quantity of existing and planned habitat;*
    **presence of species, as well as their sensitivity to human interaction;*
    **areas required for vegetation regeneration;*
    **desire for community greenways;*
    **nature of planned uses adjacent to corridor;*
    **corridor for wildlife habitat linkage.*

However, the absolute minimum width for the open space corridor shall be 150 feet on each side of the drainage canal outside of easements and detention basins and between

detention basins and roads. The width of the open space corridor shall be made sufficient to accommodate broad and architecturally diverse native vegetation capable of: (1) trapping sediment and detoxifying pollutants from non-point sources such as neighboring yards; (2) providing habitat for native fauna; (3) competing against non-native invasive plant species; and (4) shading at least 75% of the surface at all times of the day, to maintain cooler water temperatures and associated, higher dissolved oxygen levels for aquatic organisms. To ensure adequate area for trails and other open space uses, the corridor widths and delineation will be determined after mitigation requirements from the various regulatory agencies (Army Corps of Engineers, Fish and wildlife, Fish and Game) have been decided. If regulatory requirements take up the entire corridor, the width will need to be increased to allow for these planned open space uses.

15. *The corridor shall have a meandering appearance, and shall offer a variety of environments including: natural areas, revegetated/woodland areas, open grass fields/glades and passive recreation park land. The corridor shall also be designed to accommodate interpretive areas, bike/pedestrian pathways, an equestrian trail, walkways, and a natural habitat corridor. These improvements shall be paid by the developer. There is a need for separation of some uses to maintain the integrity of the uses, e.g. horse trail must be separate from pedestrian trial.*

    The location of the drainage channel within the open space corridor may vary providing character and uniqueness as long as flood damage reduction measures are not negatively impacted.

16. *Where the drainage canal flows under a road, that area should be of sufficient width and depth to include the trail, bike/maintenance trail, and habitat corridor. This allow for safe crossing (under as opposed to a road grade level). It also allows for better flood damage reduction. Where depth isn't sufficient for a bike trail, additional width for the habitat corridor shoudl be included. Large floods can carry large amounts of debris such as uprooted vegetation and trees, fences, and parts of structures. This, combined with sediment, could impede or block the efficiency of medium sized culverts. Partial obstructions at bridges and culverts can cause significant increases in upstream flood elevations. If at-grade crossings are necessary, crossing lights, stop signs, and/or crosswalk markings shall be funded by the Specific Plan finance plan.*

The proposed Alternative Drainage Corridor Policies address many of the proposed plan's deficiencies. Adoption and implementation of these policies would significantly enhance the biological values of the corridor, while meeting the flood control, recreational and other objectives of the Specific Plan. The widened corridor would increase buffering of the residential uses and would enhance the perceived aesthetics of the area. In addition, the larger tracts of land around the creeks would provide greater opportunities for on site wetland mitigation and water quality treatment.

The alternative policies are a component of the Environmentally Superior Alternative.

The wider creek corridors would incrementally reduce the amount of land available for development within the Specific Plan area. This reduction would not significantly impact the proposed development densities, which could be achieve through clustering and increased development densities elsewhere on the property. If adopted in combination with the wetland preservation alternative detailed above, this alternative would further reduce the land available for development. Substantial increases in dwelling unit densities (i.e., from single family to multiple family land uses) would be necessary to achieve the densities proposed by the Specific Plan.

If the Alternative Drainage Corridor Policies are approved, permanent open space corridors, 600 feet wide would be established along Elder and Gerber Creeks consistent with the policies. Widths may be reduced based on unavoidable physical constraints, however, the minimum width would be 150 feet on each side of the drainage channel bottom. All Alternative Drainage Corridor Policies shall apply to this alternative.

If the proposed project is approved the corridor width shall be in substantial compliance with that proposed in the Specific Plan (150 to 240 feet). The Drainage Parkway Policies contained within the Specific Plan shall apply to this alternative.

The above alternatives are not intended to preclude other alternatives for the drainage parkway corridors. Such changes may involve combinations of different channel widths, configurations and policies. Changes of this nature would occur during the public hearing process.

Regardless of the alternative adopted, a Drainage Parkway Plan for Elder and Gerber Creeks shall be prepared. This plan shall provide the following information:

- a map that depicts the configuration of the creek corridors, including overall width, low-flow channel width, bank slopes, and buffer widths;

- the location of all trails, bikeways, maintenance roads and channel access points,

street crossings, water quality basins and other structures within the corridors;

- designations of all lands uses, including recreation (passive or active), mitigation, natural area, water quality, storm water detention, etc.;
- policies addressing public access into the corridors, including limitations on use;
- a policy statement requiring the use native plants within the corridor, including a planting palette of acceptable species;
- maintenance and monitoring requirements for the creek channels and mitigation areas;
- an appropriate funding mechanism to establish, operate and maintain the creek corridors, and;
- all requirements of State and Federal regulatory agencies pertaining to the preservation and management of special status species.

The Plan shall be submitted to the Sacramento County Board of Supervisors for approval, prior to approval of development of the Specific Plan area.

Mitigation Measures:

BR-1. If off-site mitigation is adopted by the Board of Supervisors, an Off-site Mitigation Plan for each development will be required as described below.

Off-site Mitigation Plan. In consultation within the U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service, an Off-site Wetland Mitigation Plan shall be prepared for each development project within the Specific Plan area. All vernal pools and seasonal wetlands shall be mitigated off-site at an agency approved mitigation bank or other property approved by the regulatory agencies. The Plan shall incorporate the following components.

a. A detailed wetland delineation verified by the U.S. Army Corps of Engineers;

b. The location of the wetland creation site(s) and the acquistion site(s);

c. A detailed map of the wetland creation site(s) showing the acreage, distribution and type of wetlands to be created;

d. Vernal pool and seasonal wetlands compensation at ratios suuficient to ensure no net loss of vernal pool and seasonal wetlands acreage, values, and functions. The mitigation ratio for each wetland type shall be specified. Compensation vernal pools and seasonal wetlands shall:

- be supported primarily by direct rainfall, and shall be designed to
- meet or exceed the hydrophytic conditions and operating functions of the existing vernal pools and seasonal wetlands proposed for impact.
- mitigate the loss of special-status species'habitat, including fairy shrimp, as required by the U.S. Fish and Wildlife Service. For every acre of fairy shrimp habitat impacted, the applicant shall construct one acre of new habitiat and purchase two acres of fairy shrimp habitat preservation credits at an agency approved mitigation bank.

e. A wetland monitoring and maintenance program prepared according to the requirements of the U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service.

Monitoring: Monitoring shall be designed to determine that sufficient water is available to produce the required periods of inundation and subsequent soil saturation to support a desired biological community. In addition, the monitoring shall determine the need for remedial action in the form of pool modification, including excavation, fill, and/or modification of hydrologic connections, required to improve the pool water balance. Specific performance standards for determining success of the created wetlands shall be proposed. Monitoring shall occur for at least 5 years, or as required by the U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service.

Short-term monitoring requirements will be established by the Corps Section 404 permit authorization. If the Corps, in consultation with the USFWS, the U. S. Environmental Protection Agency, and the CDFG, determines that wetland development is successful at the end of the prescribed monitoring period (normally 5 years), no further monitoring will be required. Should short-term monitoring indicate that performance standards are not met, plan modifications will be submitted to the Corps for approval. Approved modifications shall be implemented and monitoring will continue until success criteria are met.

Maintenance: A mechanism satisfactory to the Corps shall be formed to fund

long-term maintenance of compensation areas to assure that the wetlands are maintained in a natural state. Long-term maintenance shall include restricted recreational use, erosion control, and maintenance trails, or other similar structures.

At the time the applicant obtains a permit to impact wetlands, alternative strategies may have been adopted to mitigate for wetland impacts. The above measures do not preclude the implementation of these new alternatives. The final acreage of offsite mitigation will be determined by the U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service when specific development projects are permitted by those agencies.

BR-2. If the On-site Wetland Preserve is approved, an On-site Wetland Preservation Plan shall be prepared that preserves at least 200 contiguous acres as a wetland preserve east of Bradshaw Road. Preservation shall focus on those wetlands with the highest habitat values. A map showing the wetland preserve boundaries shall be prepared, including the rationale for the preserve boundaries. The plan shall address all aspects of wetland preservation including buffering of incompatible land uses, access, maintenance, monitoring, and mitigation banking. The required Plan shall be submitted to the Sacramento County Department of Environmental Review and Assessment, U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service and California Department of Fish and Game for approval prior to its implementation..

All vernal pools and seasonal wetlands outside the preserve area shall be mitigated offsite at an agency approved mitigation bank to the satisfaction of the U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service.

BR-3. A Wetland Mitigation Plan for Elder and Gerber Creeks shall be prepared and incorporated into the Specific Plan. This plan shall address phasing of channel modifications, establishment of wetlands (i.e., passive, active, combination), species composition, maintenance and monitoring. The plan shall require channel bottom and bank materials to be substantially the same as comparable natural streams. Natural arrays of riffles, runs and pools shall be incorporated into the design of the creek channels. The required Plan shall be submitted to the Sacramento County Department of Environmental Review and Assessment, U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service and California Department of Fish and Game for approval prior to its implementation.

BR-4. To mitigate for the potential loss of 1600± acres of Swainson's hawk foraging habitat, implement one of the following alternatives:

a. The project proponent shall preserve 0.50 acre of similar habitat for each acre lost within a 10-mile radius of the project site. This land shall be protected through fee title or conservation easement (acceptable to the California Department of Fish and Game);

b. The project proponent shall enter in the formal consultation with the California Department of Fish and Game pursuant to the Fish and Game Code, Section 2081. A California Endangered Species Act (CESA) Memorandum of Understanding (MOU) and Management Agreement shall be completed prior to issuance of any building permits for the site.

c. Should the County Board of Supervisors adopt a Swainson's hawk mitigation policy/program (which may include a mitigation fee payable prior to issuance of building permits) prior to the implementation of one of the measures above, the project proponent may be subject to that program instead.

BR-5. Using protocol acceptable to the regulatory agencies with authority over these species, determinate surveys for potentially-occurring special-status species or their habitat shall be conducted prior to development and permitting within the Specific Plan area. If any of the species <u>or</u> their habitat are indicated, project/plan-specific mitigation measures shall be developed in consultation with Sacramento County, the California Department of Fish and Game, and/or the U.S. Fish and Wildlife Service to mitigate those impacts to less than significant levels, if possible. The mitigation plan(s) developed for species or habitat preservation shall emphasize a multi-species approach, to the maximum extent possible.

- Where impacts include taking of a federally-listed species, a Section 10, Incidental Take permit, or a Biological Opinion resulting from Section 7 Consultation with another federal agency shall be obtained, and permit conditions implemented.

- Where impacts include taking of a California-listed species, a Section 2081 Management Agreement shall be negotiated with the California Department of Fish and Game, and conditions of that management agreement implemented.

BR-6. In conjunction within the required Wetland Mitigation Plan for the creeks, a Drainage Parkway Plan for Elder and Gerber Creeks shall be prepared. This plan shall provide the following information:

a. A map that depicts the configuration of the creek corridors, including overall width, low-flow channel width, bank slopes, and buffer widths;

b. The location of all trails, bikeways, maintenance roads and channel access points, street crossings, water quality basins and other structures within the corridors;

c. Designations of all lands uses, including recreation (passive or active), mitigation, natural area, water quality, storm water detention, etc.;

d. Policies addressing public access into the corridors, including limitations on use;

e. A policy statement requiring the use native plants within the corridor, including a planting palette of acceptable species;

f. Maintenance and monitoring requirements for the creek channels and mitigation areas;

g. An appropriate funding mechanism to establish, operate and maintain the creek corridors, and;

h. All requirements of State and Federal regulatory agencies pertaining to the preservation and management of special status species.

If the proposed project is approved, the corridor width shall be in substantial compliance with that proposed in the Specific Plan (150 to 240 feet). Adoption of the Alternative Drainage Corridor Policies would increase the corridor width to 600 feet. Widths of this alternative may be reduced based on unavoidable physical constraints, however, the minimum width shall be 150 feet on each side of the drainage channel bottom. These alternatives are not intended to preclude other alternatives for the drainage parkway corridors. Such changes may involve combinations of different channel widths, corridor configurations and policies. The Drainage Parkway Plan shall be submitted to the Sacramento County Board of Supervisors for approval, prior to approval of development of the Specific Plan area.

Cultural Resources

Technical studies and/or reports addressing the cultural resources of the Plan Area and offsite Drainage Master Plan impact areas have been prepared by archeological consultants Peak and Associates. The reports, entitled *Cultural Resources Assessment of the North Vineyard Station Specific Plan* (December 18, 1995); *Cultural Resources Assessment of the North Vineyard Station Off-Site Detention Basin* (January 14, 1997); and, *Basin 20 and Elder Creek Channel Survey* (letter report dated January 28, 1997), provide background on the cultural setting of the Plan Area, including a discussion of previous research conducted in the area. Portions of these reports have been used verbatim to provide the following discussion, with bibliographic references incorporated into the bibliography for this EIR. Complete, original versions of the reports may be reviewed at the Sacramento County Department of Environmental Review and Assessment (DERA), and/or the Planning and Community Development Department.

Archeological Background.

The Sacramento Delta was one of the first regions in California to attract intensive archeological fieldwork. Between 1893 and 1901, avocational (amateur; non-professional) archeologist J. A. Barr excavated many prehistoric mounds in the Stockton area. He collected nearly 2000 artifacts during the course of his investigations. H. C. Meredith was another avocational archeologist of the period who pursued collecting in the same Stockton locality. Meredith (1899, 1900) did publish a compilation of his own and Barr's findings, and these appear to constitute the earliest accounts of Delta archeology. Holmes (1902), from the Smithsonian Institution, further elaborated on the Delta or "Stockton District" archeology, presenting illustrations of artifacts collected by Meredith and Barr.

It was Elmer J. Dawson who first recognized culture changes through time in Delta archeology. Though he was an amateur archeologist, Dawson understood the necessity of keeping accurate notes on grave associations and provenience (origin or source) of artifacts. He collaborated with W. E. Schenck to produce an overview of northern San Joaquin Valley archeology. The overview contained information on more than 90 prehistoric sites as well as data on previous collectors.

By 1931, the focus of archeological work was directed toward the Cosumnes River locality, where survey and exploration were conducted by Sacramento Junior College (Lillard and Purves 1936). Excavations, especially at the stratified Windmiller mound (CA-SAC-107), suggested three temporally distinct cultural traditions: Early, Transitional, and Late. Information grew as a result of excavations at other mounds in the Delta and lower Sacramento Valley by Sacramento Junior College and the University of California, Berkeley.

Previous investigations in the project region have focused upon very detailed archival research of Spanish sources (Bennyhoff 1977), and the archeological investigations at a number of small sites (Schulz et al. 1979; Schulz and Simons 1973; Soule 1976). A reexamination of earlier work has also been undertaken (Ragir 1972; Schulz 1981; Doran 1980). Several of the previously investigated sites probably represent satellite encampments or small villages associated with major villages.

The majority of the sites appear to be relatively late in time, and probably represent Plains Miwok. As mentioned above, the sites appear to be satellite encampments or small villages. The activities practiced are varied, but detailed studies on the faunal collection suggest seasonality of occupation and a focus on fish species other than the main channel varieties.

Writing the definitive summary of California archeology, Moratto (1984: 529-547) devoted an entire chapter to linguistic prehistory. For the Central Valley region, Moratto points out that some Early Horizon and Middle Horizon central California archeological sites appear at least in part, contemporaneous, based on existing radiocarbon dates. Cultural materials recovered from CA-SJO-68, an Early Horizon site, are thought to date to 2350 B.C. On the other hand, a Middle Horizon component at CA-CCO-308 dates to 2450 B.C. The antiquity of other Early and Middle Horizon sites demonstrate an overlap of the two horizons by a millennium or more.

One explanation proposes that the Middle Horizon represents an intrusion of ancestral Miwok speaking people into the lower Cosumnes, Mokelumne, and Sacramento River areas from the Bay Area. The Early Horizon may represent older Yokuts settlements or perhaps the speakers of a Utian language who were somehow replaced by a shift of population(s) from the bay.

Ethnographic Background.

The Eastern Miwok represent one of the two main divisions of the Miwokan subgroup of the Utian language family (Levy 1978:398). The Plains Miwok, one of five separate cultural and linguistic groups of the Eastern Miwok, occupied the lower reaches of the Mokelumne, Cosumnes and Sacramento Rivers including the area of south Sacramento County surrounding the project area (see Plate CR-A, from Bennyhoff, 1997). Linguistic studies and the application of a lexicostatistic (word signification and application statistic) model for language divergence suggests that Plains Miwok was a distinct linguistic entity for the last 2000 years (Levy 1970). This result led researchers such as Richard Levy (1978:398) to conclude that the Plains Miwok inhabited the Sacramento Delta for a considerable period of time.

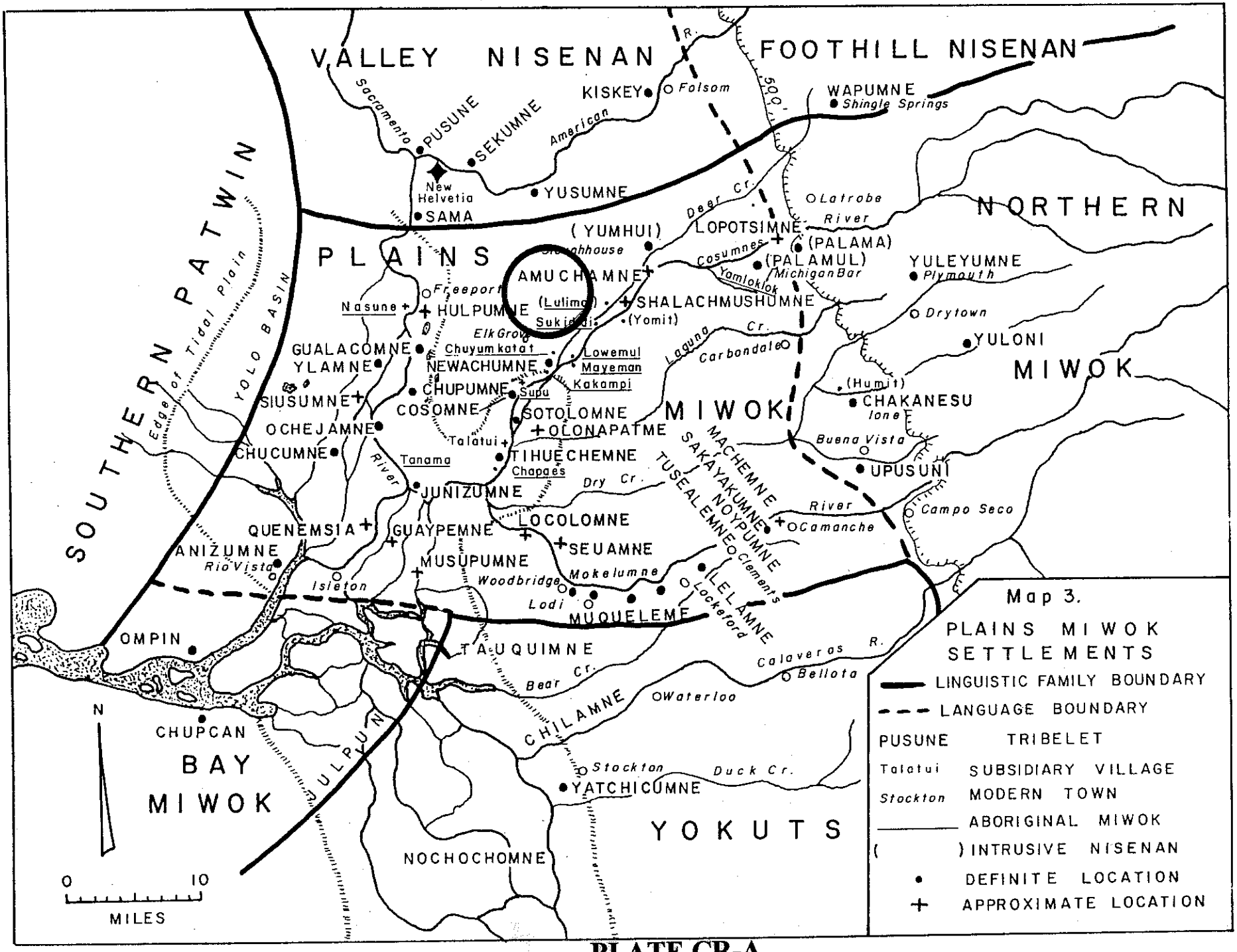


PLATE CR-A

Plains Miwok Settlements

The political organization of the Plains Miwok centered on the tribelet. Tribelets were comprised of 300 to 500 individuals (Levy 1978:410). Each tribelet was thought to control a specific area of resources and usually consisted of several villages or hamlets. Each tribelet also was divided along lineages. These lineages were apparently localized to a specific geographic setting and most likely represented a village site and their associated satellite sites where the seasonal collection of resources occurred (Levy 1978:398-399). Each settlement apparently contained roughly 21 individuals according to data collected by Gifford (Cook 1955:35).

The diet of the Plains Miwok emphasized the collection of floral resources such as acorns, buckeye, digger pine nuts, seeds from the native grasses and various fresh greens. Faunal or animal resources such as tule elk, pronghorn antelope, deer, jackrabbits, cottontails, beaver, gray squirrels, woodrats, quail and waterfowl were hunted. Fishing, particularly salmon and sturgeon, contributed significantly to the Plains Miwok diet (Levy 1978:402-403). The primary method of collecting fish was by nets, but the use of bone hooks, harpoons and obsidian-tipped spears is also known ethnographically (Levy 1978:404).

Both twined and coiled basketry were manufactured by the Eastern Miwok. The uses of baskets included the collection and storage of seeds, basketry cradles and gaming (Levy 1978:406). Tule mats were also known to have been used by the Plains Miwok primarily as a floor covering. Other uses of tule included the manufacture of the tule balsa, a water craft in which native people navigated and exploited adjacent delta and major river systems.

Four main types of structures were known among the Eastern Miwok, depending on the environmental setting. In the mountains, the primary structure was a conical structure of bark slabs. At lower elevations the structures consisted of thatched structures, semi-subterranean earth-covered dwellings and two types of assembly houses used for ceremonial purposes (Levy 1978:408-409).

Bennyhoff (1977:11) characterized the Plains Miwok as intensive hunter-gatherers, with an emphasis upon gathering. The seasonal availability of floral resources defined the limits of the group's economic pursuits. Hunting and fishing subsistence pursuits apparently accommodated the given distribution of resources. The Plains Miwok territory covered six seasonally productive biotic communities and as such native people could apparently afford to pick and choose the resources they ranked highest from each of these zones. The subsequent storage of floral resources (such as acorns in granaries) allowed for a more stable use of the resource base (Bennyhoff 1977:10). The acorn was apparently the subsistence base needed to provide an unusually productive environment as earlier non-acorn using peoples who resided in the same geographic setting apparently suffered some seasonal deprivation (Schulz 1981). Such an emphasis upon the gathering of acorns is consistent with the population increase evident during the Upper Emergent Period in California (Doran

1980).

The study of piscine (fish) remains from both CA-SAC-65 (Schulz et al. 1979) and CA-SAC-145 (Schulz n.d.; Schulz and Simons 1973) indicates that small villages away from the major rivers appear to concentrate on the collection of piscine species (particularly the Sacramento perch) that inhabited slow-moving waters. This would probably have been the case with any village located within or near the Plan Area, if there was a village in the immediate area.

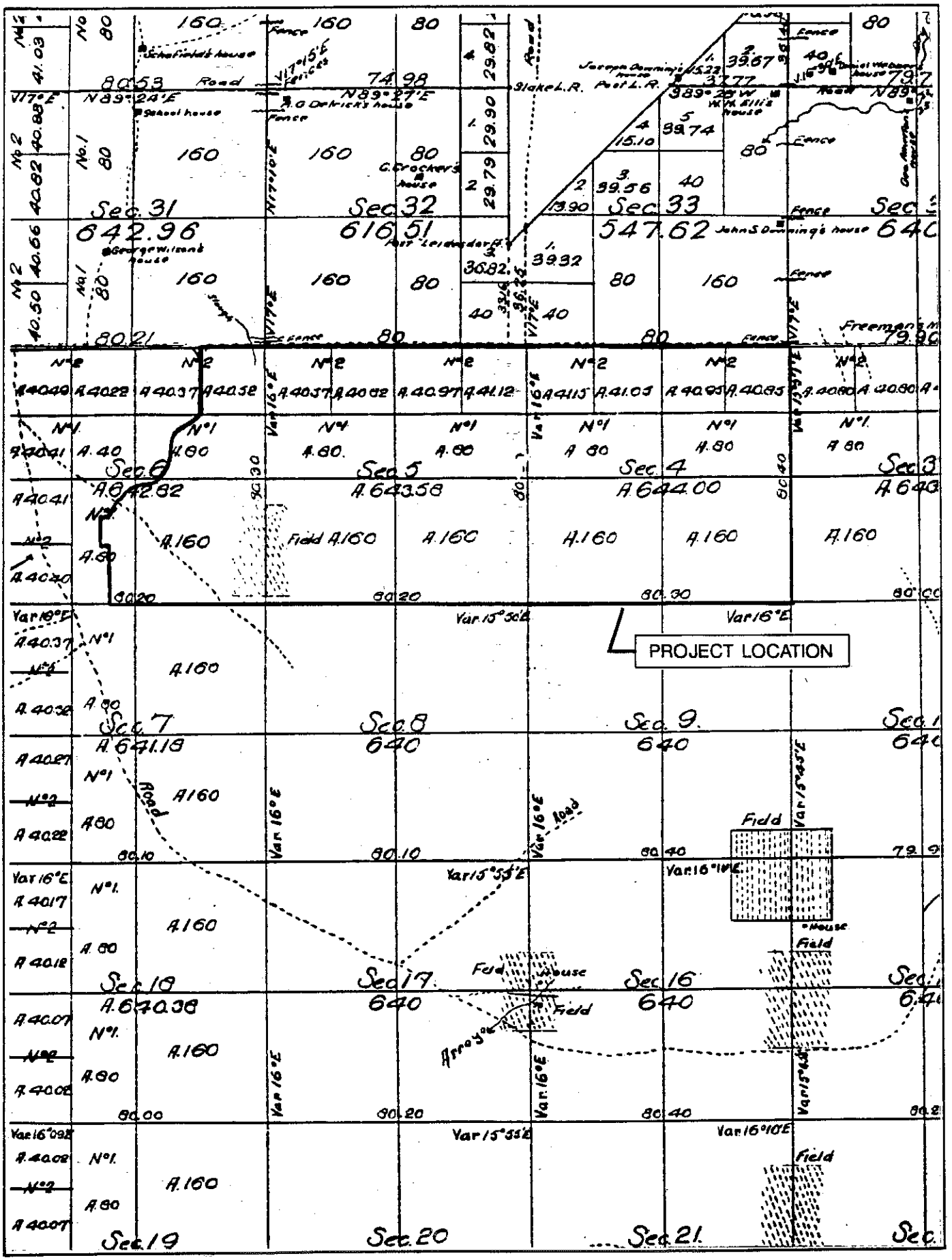
The Plan Area is not known to be controlled by any particular tribelet of the Plains Miwok, but appears to lie in an unoccupied boundary zone between the Plains Miwok and the antagonistic Nisenan to the north (Bennyhoff 1977:58).

Historical Background:

The Plan Area does not lie on a portion of the early Mexican land grants nor does it lie within the land that could be mined for gold. As a result, there is no indication that any important events or activities occurred in the early history of the region. It was not long after the initial gold rush of the late 1840s-early 1850s, however, when the agricultural potential of the excellent farmlands of the Sacramento Valley was recognized. The first lands taken up were the rich bottom lands along the major watercourses. By the mid-1860s, the prime farm land had been claimed and the later settlers began to discover the potential of lands such as the Plan Area with poorer soil and less available water. In the 1860s and 1870s, virtually all land in the region was taken up by the later settlers for agricultural purposes. The Plan Area lies within the boundaries of the San Joaquin Township (Thompson & West 1880:234-235).

The historic maps of the Plan Area have been collected. The earliest map is the General Land Office plat of the township dating to 1856, which indicates a field on both sides of the line between the south halves of Sections 5 and 6. A road is indicated crossing the Plan Area in a northwest/southeast direction, within the south half of Section 6. No structures are shown, but it is likely at least one ranch would be associated with the developed field (Plate CR-B).

The 1885 County map shows the subdivision of the land and the names of the landowners. At that point, the land was held in fairly large blocks, with two of the seven owners having blocks of 480 and 430 acres each. The 1880 County history has biographies for these two individuals--R.J. Brown and Mrs. Cordelia Bates. Brown came to California in 1859, and "engaged in baling hay and teaming for about eight years: he has been farming for the last nine years", presumably on a portion of the Plan Area. In 1880 he owned 320 acres; he expanded the tract to 480 acres by 1885 (NW, NE, and SE quarters of Section 4). Mrs. Bates



TAKEN FROM GLO MAPS OF T. 7 N., R. 6 E. & T. 8 N., R. 6 E., 1855

Plate CR-B
1856 General Land Office Plat Map

had moved to a 400 acre tract of land in the Plan Area with her husband in 1870 (SW quarter of Section 4; SE quarter and W half of SW quarter of Section 5). He died in 1875, leaving her as a young widow with seven children (Thompson & West 1880).

Thomas G. Casey, who purchased the southeast quarter of Section 6 in 1880 for $3000, has a biography in both the 1880 and 1890 County histories. Casey had been living in Brighton Township not too far north of the Plan Area in 1880. Casey added a number of improvements including fencing and outbuildings to his holding in the Plan Area. He is described as carrying on "general farming", but also had 15 acres of vineyard and orchards (Davis 1890).

The service center for the farmers of the Plan Area was the town of Florin, about three miles from the northwest quarter of the Plan Area. The town, formed in 1875 along the line of the Central Pacific Railroad branch, had a post office, railroad station, store, blacksmith shop, hotel, school, box factory and carpenter shop in 1880. The soils of the region overlie a hardpan layer, making them suitable primarily for the raising of small fruits such as strawberries, grapes, peaches and apples, with irrigation. Florin served as the shipping point for the farm products of the region (Thompson & West 1880).

From the distribution and number of structures on the 1909 Elk Grove topographic quadrangle, the same pattern of large land holdings can be inferred as continuing through this date. Section 4 contains only two structures, Section 5 has nine and the portion of Section 6 in the Plan Area contains only five. The number of structures is reflective in part of the subdivision of some of the parcels, particularly the Bates and Casey parcels.

The early years of the twentieth century were an era of rapid development of a large number of interurban electrified railways. The technological advances related to the production and long-distance transmission of hydroelectric power of the late nineteenth century made this a popular form of transportation for passenger service and freight service throughout the virtually flat terrain of the Central Valley. One of the systems to be organized and built in this era was the Central California Traction Railroad (CCTRR). The corporation was organized in 1905 with three goals in mind: to compete with the Southern Pacific and Western Pacific for transporting agricultural products of farms on the east side of the San Joaquin and Sacramento valleys; to develop farmland along the railroad right-of-way; and to provide a major customer for the power company owned by several of the corporate directors.

The 53-mile CCTRR main line connected Sacramento with Stockton, with a branch from the main line to Lodi. The section from Sheldon to Sacramento through the Plan Area was completed in 1910. Almost from the beginning, the railroad built up a substantial freight business, and was a financial success. In the 1920s, Southern Pacific, Santa Fe and Western

Pacific purchased the railway jointly. Eventually, the increasing use of personal automobiles and bus lines brought a reduction in the number of passengers, for the CCTRR, and passenger service was eliminated in 1933. In 1946, the use of electricity was discontinued in favor of diesel service (Hilton and Due 1960: 401).

The railroad station along the line that would have been convenient for produce shippers within the Plan Area was located about one-quarter mile north of Florin Road, shown on a 1927 map of the county as the "Florin Road Station".

Research Methodology.

Peak and Associates conducted an intensive cultural resource assessment, including a complete pedestrian survey, for the Specific Plan proponents' parcels (referred to below as the "Survey Area"). A more generalized review was conducted for the remaining Plan Area parcels. In addition, Peak and Associates conducted intensive surveys of the off-site drainage areas associated with the proposed Drainage Master Plan.

Prior to the initiation of the field work phase, a review of historic period maps and documents was conducted so that areas of possible concern within the Plan Area could be identified. The consultant (Peak and Associates) has provided the following discussion regarding research methodology and the results of the field surveys.

Pre-Field Research:

Records of previous cultural resource surveys and maps of recorded sites within the project area were reviewed at the North Central Information Center of the California Archeological Inventory. The records search for the North Vineyard Specific Plan Area revealed that there are no archeological sites recorded in or near the study area. Very little of the project area has been systematically surveyed. In 1974, J. Johnson of CSU Sacramento completed a survey of both branches of Morrison Creek that transect the Plan Area. Peak & Associates, Inc. completed a survey of the corridor for one of the SMUD transmission lines that crosses the western portion of the Plan Area in 1979. All four of the bridges along Gerber (3) and Florin (1) roads have been reviewed and evaluated, and are not significant resources.

A letter was sent to the Native American Heritage Commission requesting the identities of knowledgeable Native Americans that might have information on sites within the Plan Area of significance to modern Miwok. Letters were sent to the individuals identified by the Commission. A similar request was sent to the Sacramento County Historical Society regarding historic resources. No replies have been received as yet.

Research on historic sites was conducted at the Bureau of Land Management, California State Library, and the U.C. Davis Map Library. Additionally, several published texts were consulted for information on sites of recognized significance. There are no historic sites of recognized significance within the Plan Area.

Historic maps of the area revealed that some of the early structures that once stood within the Plan Area are no longer present. The 1856 General Land Office plat shows a field within the Plan Area located in the southwest quarter of section 5 and the south east quarter of section 6 (see Plate CR-B). Despite the existence of the field, no structures appear on this map. The 1909 Elk Grove USGS map indicates 15 structures within the Plan Area (Plate CR-C). The 1942 Franklin 15' topographic map indicates that twelve of these older structures are still present, along with nine more built between 1909 and 1942 (#16-#23, Plate CR-D). The county building records indicate that two structures date to this time period but they do not appear on this map. The 1968 Elk Grove 7.5' USGS map indicates that eight structures from the 1909 map are still present and six more built between 1909 and 1942 still remain (Plate CR-E). The 1979 photo-revised edition of the Elk Grove 7.5' USGS map indicates that a total of twelve structures from both the 1909 and 1942 maps are still present (Plate CR-F). There are many structures shown on this map that do not appear on the earlier editions.

There are several factors that could effect the accuracy of the map study, such as the vagaries of early mapping, changes in map scales and the possibility that some of the structures shown on the recent USGS map could be newer structures erected on or near the sites of razed older structures. For these reasons, two steps were taken to check the accuracy of these conclusions, the field inspection and an examination of county building records.

Building records for the parcels were consulted and, for the most part, they supported the results of the map study, but there are several conflicts. First, the county building records indicate that the structure located at 9204 Florin Road was built in 1922 but a structure appears on the 1909 map in the same location. Similar problems occur with other structures within the Plan Area. These structures include the buildings at 9437 Gerber Road, 9673 Gerber Road, and 9441 Florin Road. According to the building records these structures were built in 1930, 1920, and 1928 respectively, but they do not appear on the 1942 map. The dates given on building records are often approximated, so a part of the field work involved checking on the accuracy of these dates, if possible, along with clearing up the discrepancies noted above.

A supplemental record search was conducted for the off-site impact areas by Peak and Associates. This record search yielded similar results to that conducted for the Specific Plan area. No previously recorded sites on or adjacent to the off-site impact areas.

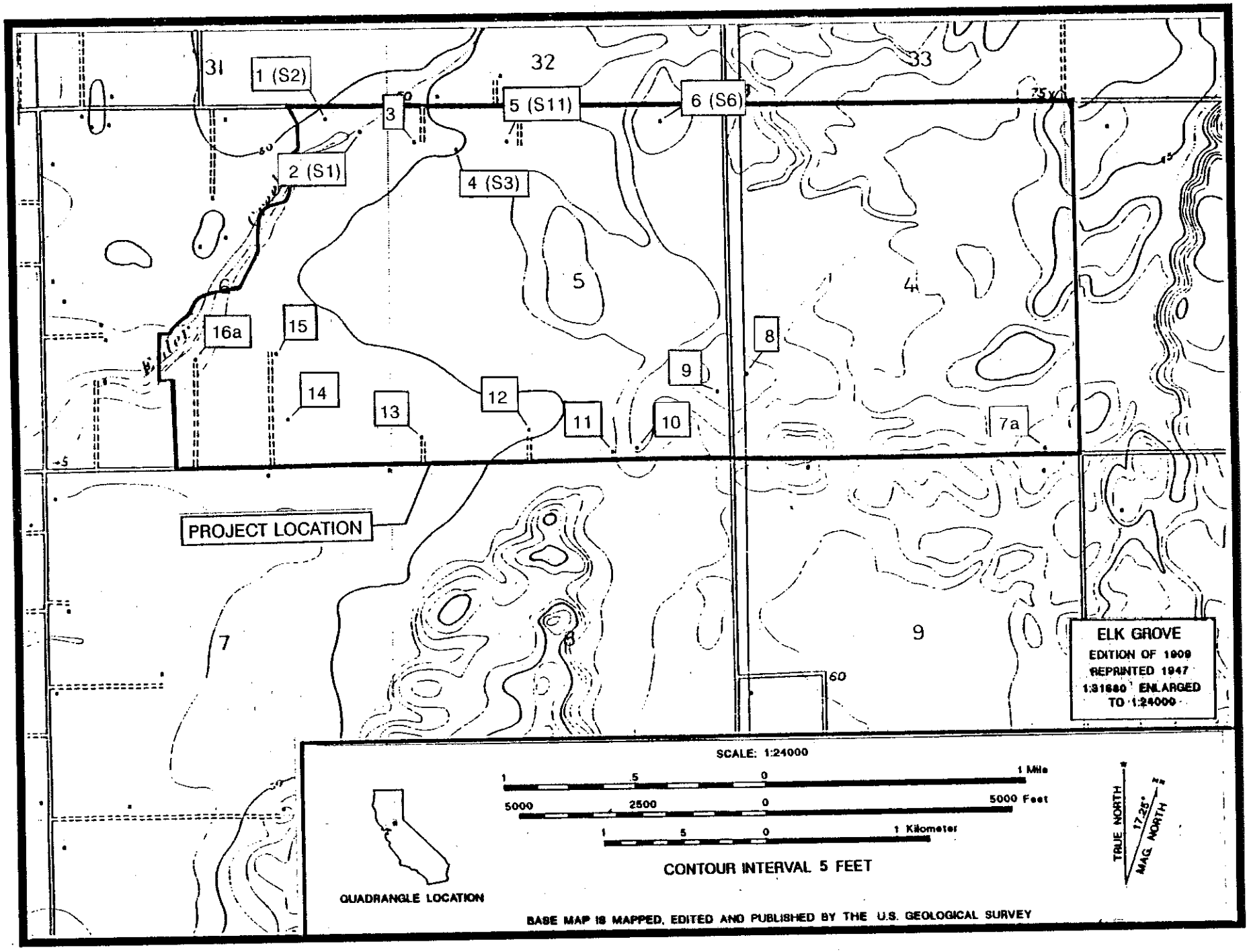


Plate CR-C
1909 Elk Grove USGS

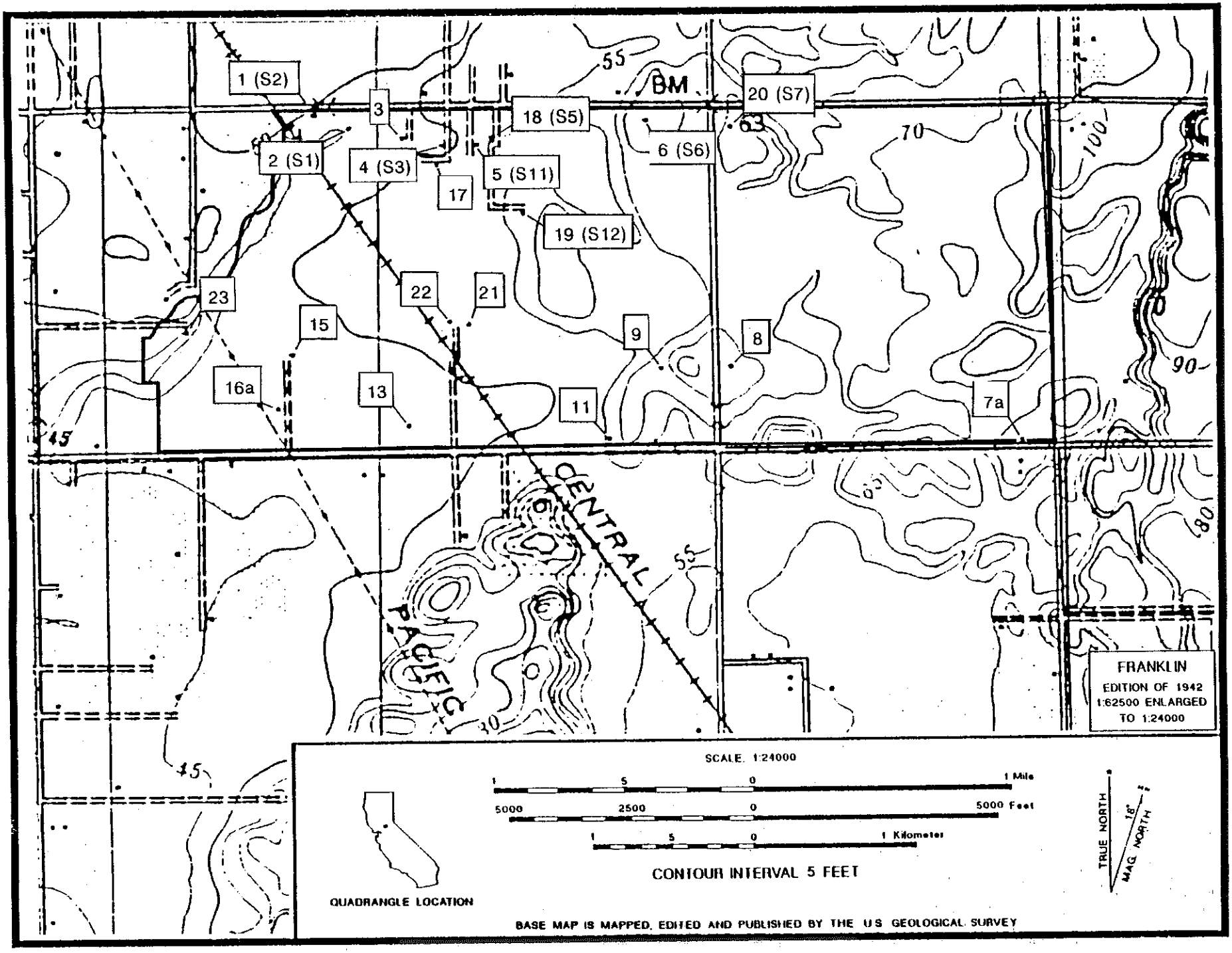


Plate CR-D

1942 Franklin 15' topographic map

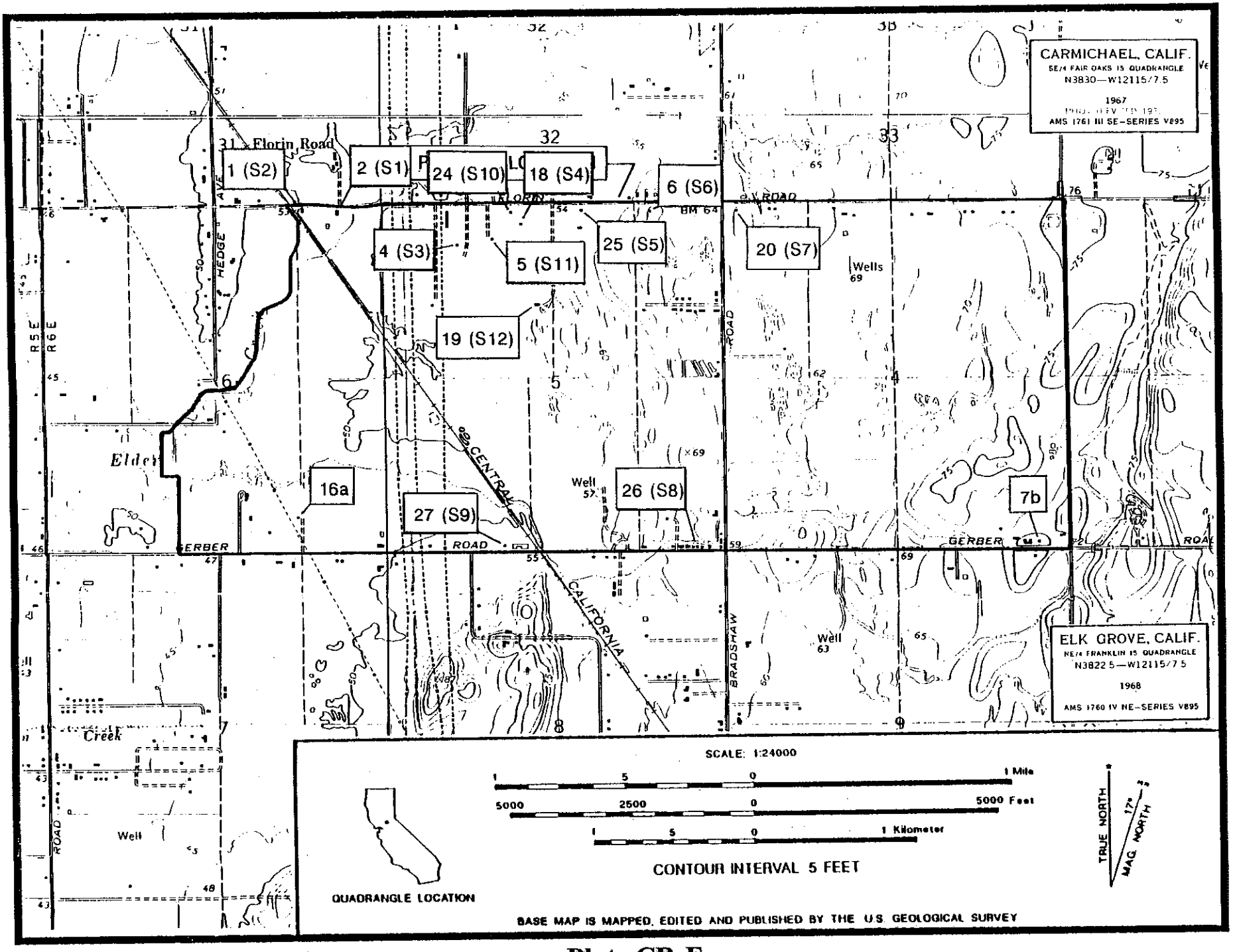


Plate CR-E

1968 Elk Grove, Calif. 7.5' USGS map

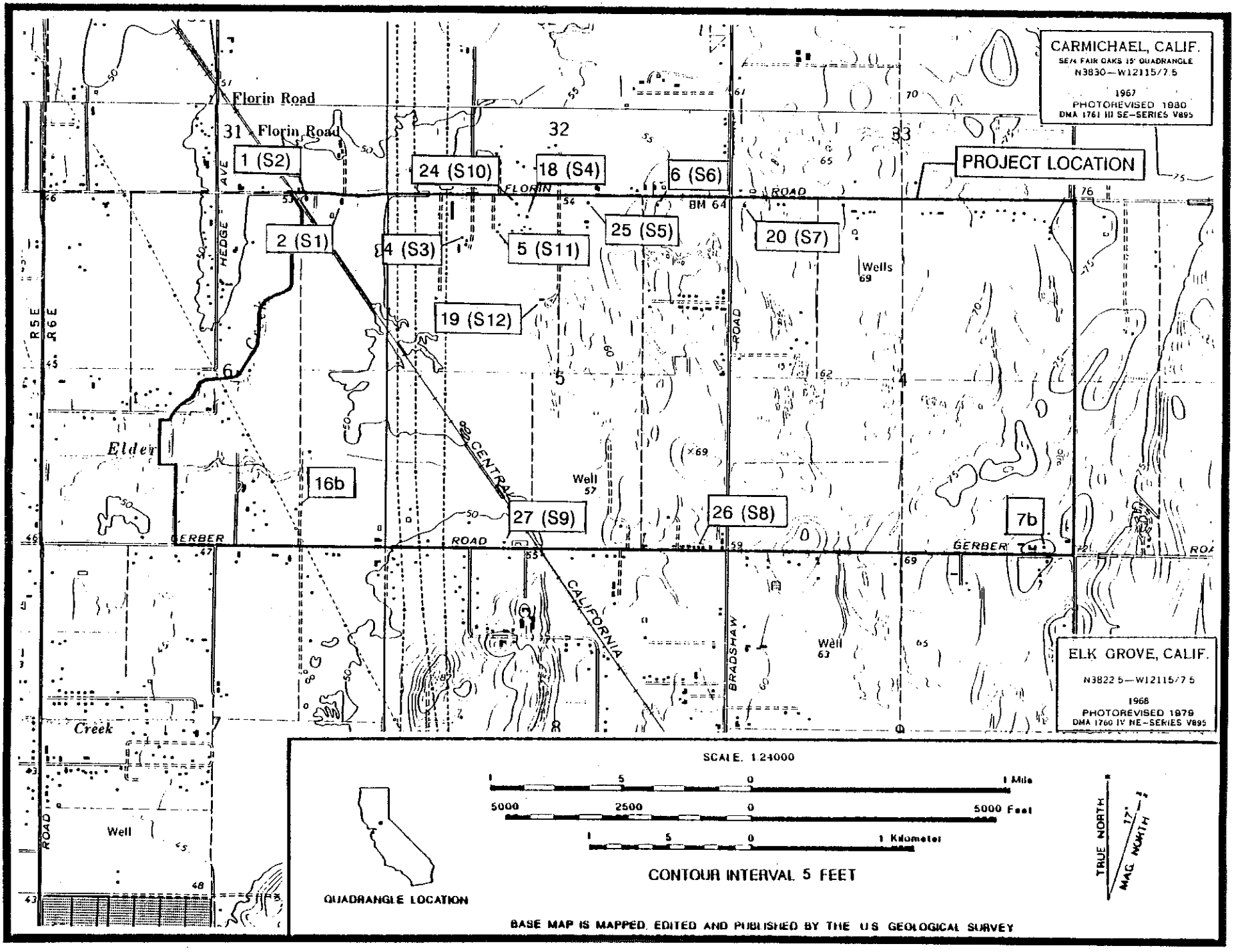


Plate CR-F

1979 photo-revised Elk Grove, Calif. 7.5' USGS map

Field Assessment:

Specific Plan Area

A total of 556 acres of the Plan Area was given a complete pedestrian walk-over by a team of archeologists. This acreage, referred to as the "Survey Area", consisted of the proponents' parcels where access was available (see Plate CR-G). The remaining 1024 acres were inspected for the presence or absence of historic period structures via public roadways.

The archeological inspection of the 556 acres was completed by means of parallel sided transects that were between 15 to 20 meters in width. A three person team conducted this investigation. The majority of the 556 acres was open pasture land or fields which provided fair to good exposure of the existing ground surface. In those small acreage parcels with homes and other structural improvements, the ground surface was occasionally covered with landscaping, lawns, driveways, etc. which prevented the examination of the natural ground surface. None of these areas, however, were extensive and their presence did not preclude the surveyors from visually inspecting the majority of each property.

The vehicular inspection of the remaining 1024 acres was accomplished by driving the public roadways, and when feasible, photographing those structures that research and/or empirical observation had indicated were over 45 years old. No surface inspection of the 1024 acres was completed due to lack of access.

Off Site Area:

Subsequent to completing the cultural resource investigation of the Specific Plan area, Peak and Associates conducted a field survey of two off-site areas subject to impact as a result of implementation of the Specific Plans Master Drainage Plan. These include the areas of the proposed detention facility and the Elder Creek channel (see Plate CR-H).

Accord to Peak and Associates, the area of the proposed detention facility was inspected on January 10, 1997. The inspection consisted of complete pedestrian coverage except for those areas covered with water at the time of the survey. Peak and Associates (January 14, 1997:6) state that:

> The property has been used as pasture in the recent past, but is now vacant. There is heavy grass cover, beaten down and matted from the recent rains, that hindered surface inspection. There are, however, numerous vehicle and animal trails and rodent burrows that allowed a reasonable level of inspection. Particular care was given to the banks of the creek, trampled down by cattle. The soil exposure revealed only light brown sandy clay

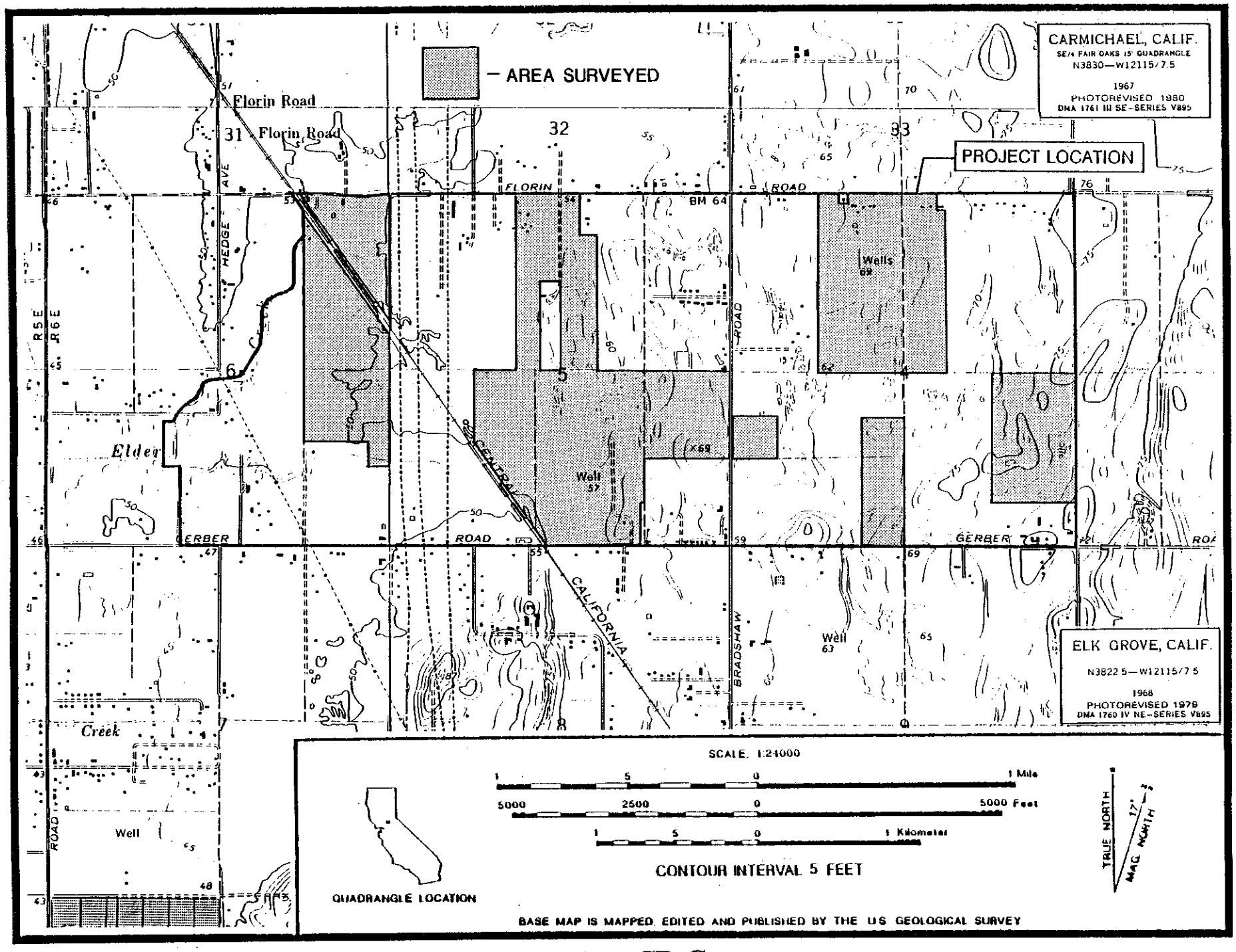


Plate CR-G
"Survey Area"

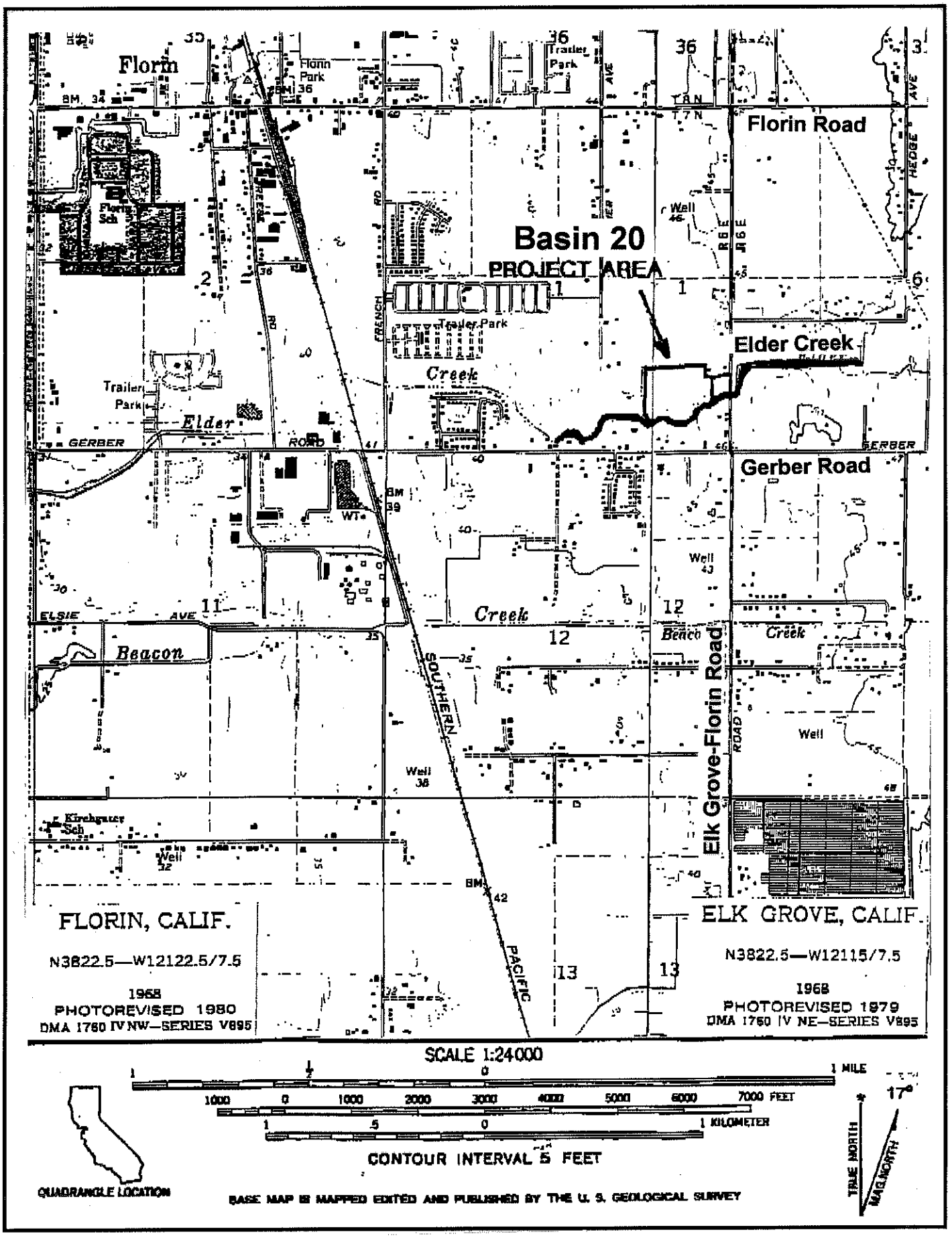


PLATE CR-H

Off-Site Drainage Impact Areas

(flood sediment) throughout with no evidence of organic build-up. The only rock present, other than minor amounts of gravel, consisted of natural stream cobbles, and these were rare.

Various channel realignments are also proposed for Elder Creek. According to Peak and Associates, the corridor of Elder Creek had been previously surveyed by J. Johnson in 1977 with negative results. On January 24, 1997, Peak and Associates staff completed an on-foot survey of the proposed realignments. Staff inspected exposed ground surfaces and the cut banks of the channel where ever possible. Dense vegetation obscured some of the channel banks. In addition, staff surveyed the extension of the proposed basin area that extends eastward to Elk Grove-Florin Road.

Survey Results:

Archaeological Resources

No prehistoric artifacts or evidence of prehistoric use of the Survey Area and/or the off-site impact areas was found. Several fields in the Survey Area had been recently plowed or mowed, providing excellent ground visibility. Some rock was observed in these areas, but none that had been modified by man.

One historic period archeological site was discovered near the Central California Traction Railroad in the northwest portion of the Plan Area. This area was assigned a temporary field number, PA-95-61.

Site PA-95-61 consists of a small scatter of 1930s/40s era refuse that was primarily domestic in nature. Broken condiment bottles, fragments of a child's decorated ceramic tea set, sardine cans, red bricks, a sewer pipe fragment, and a bent iron pipe were all discovered protruding from the ground surface. No existing structures, or structures shown on historic period maps or other documentary sources, were located anywhere near this refuse deposit. The closest feature is the Central California Traction Railroad which is located to the west and south of the site area. Given the types of historic period artifacts present at the site, it is unlikely that this refuse was once associated with the railroad. It would appear that this small refuse pile probably represents a single episode dumping of material that was once associated with a residence. The existing structure on this parcel is located approximately 2,000 feet to the north, northwest of PA-95-61. This home was constructed in 1910, however, and it is possible that the refuse deposited at the site originated from this residence.

Historic Structures.

Twelve historic period (greater than 45 years old) structures were identified during the pedestrian and vehicular inspection of the Specific Plan Area. Three of these structures are located within proponents' parcels (the Survey Area), while the remaining nine were found within the remaining Plan Area. Each of the structures was photographed, assigned a temporary field number. Plate CR-F shows the location of each of these structures.

Table CR-1 summarizes the findings for each of the 29 potential historic structures identified during the historic map research. The second column showing the extant (existing) structures provides a reference number that corresponds to their location on the modern Elk Grove map (Plate CR-F). These numbers also correspond to the descriptions of the structures provided later in the text.

No historic period structures were identified in or adjacent to the off-site impact areas.

Regulatory Setting.

State:

The California Environmental Quality Act of 1979 (CEQA) is the principal statute mandating environmental assessment of projects in California. Included within this statute are historical resources (PRC section 21001 (b)) inclusive of archaeological and architectural properties. Archaeological resources are specifically addressed in Appendix K of CEQA, which defines an "important archaeological resource" as one which:

- Is associated with an event or person of:

    1. Recognized significance in California or American history, or
    2. Recognized scientific importance in prehistory.

- Can provide information which is both of demonstrable public interest and useful in addressing scientifically consequential and reasonable or archaeological research questions;

- Has a special or particular quality such as oldest, best example, largest, or last surviving example of its kind;
- Is at least 100 years old and possesses substantial stratigraphic integrity; or

- Involves important research questions that historical research has shown can be

TABLE CR-1.1 HISTORIC STRUCTURE SUMMARY			
Map No.	**Exstant Bldgs.**	**Est. Date from maps**	**Building Records/Field Observations**
1	S2	pre-1909	Building record 1922, field visit concurs with building record date.
2[P]	S1	pre-1909	Building record 1910, field visit concurs with building record date.
3		pre-1909	No building record, newer residence now in same location.
4	S3	pre-1909	Building record 1900, field visit concurs with building record date.
5	S11	pre-1909	Bilding record 1940, field visit concurs with building record date.
6	S6	pre-1909	Building record 1908, field visit concurs with building record date.
7a		pre-1909	Razed before 1962.
7b		1942-1968	Building record 1962, field visit concurs; newer residence has replaced older structure in same location.
8		pre-1909	Razed before 1968.
9		pre-1909	Razed before 1968.
10		pre-1909	Razed before 1942.
11		pre-1909	Razed before 1968.
12		pre-1909	Razed before 1942.
13		pre-1909	Razed before 1968.
14		pre-1909	Razed before 1942.
15		pre-1909	Razed before 1968.
(Table continued next page, for structures 16-27)			
P = in proponent parcel ; S = Should show on 1942 map.			
Source: Peak & Associates, *Cultural Resources Assessment North Vineyard Station Specific Plan*, December 18, 1995.			

TABLE CR-1.2
HISTORIC STRUCTURE SUMMARY

Map No.	Exstant Bldgs.	Est. Date from maps	Building Records/Field Observations
16a		1909-1942	Razed before 1971.
16b		post-1968	Building record 1971, field visit concurs; newer residence has replaced older structure in same location.
17		1909-1942	Razed before 1968.
18[P]	S4	1909-1942	Building record 1930, field visit was inconclusive but building not older than 1930s.
19	S12	1909-1942	Building record 1930, field visit concurs with building record date.
20	S7	1909-1942	Building record 1925, field visit concurs with building record date.
21		1909-1942	Razed before 1968.
22		1909-1942	Razed before 1968.
23		1942-1968	Razed before 1968.
24[P]	S10	1942-1968[S]	Building record 1920, field visit concurs with building record date.
25	S5	1942-1968[S]	Building record 1935, field visit concurs with building record date.
26	S8	1942-1968[S]	Building record 1928, field visit concurs with building record date.
27	S9	1942-1968[S]	Building record 1930, field visit concurs with building record date.

P = in proponent parcel ; S = Should show on 1942 map.

Source: Peak & Associates, *Cultural Resources Assessment North Vineyard Station Specific Plan*, December 18, 1995.

answered only with archaeological methods.

These criteria are employed in assessing and evaluating the significance of archaeological resources under CEQA.

The California Register Bill (AB 2881), signed into law on September 27, 1992 has introduced new criteria that may be used to evaluate archaeological resources to determine if they are significant resources under CEQA. Under AB 2881, a "historical resource" includes, but is not limited to "any object, building, structure, site, area, or place which is historically or archaeologically significant, or is significant in the architectural, engineering scientific, economic, agricultural, educational, social, political, military, or cultural annals of California." Historical resources of local, state, and national significance may be eligible for nomination to the California Register if they satisfy the criteria established by the State Historical Resources Commission (SHRC).

The criteria used for listing a property on the California Register include:

- Association with events contributing to the broad patterns of the state's history and culture, or with historically important people;
- Embodiment of a distinctive characteristics of a type, period, region, or construction method, or represent the work of a creative individual; or
- The property must have the potential for yielding important information in California's history or prehistory.

The California Register consists of resources that are listed automatically and those that must be nominated through an application and public hearing process. The California Register automatically includes the following:

- California properties listed in, or formally determined eligible for, the National Register of Historic Places.
- California Registered Historical Landmarks from No. 770 onward. Landmarks from No. 1 through No. 769 will be individually evaluated for eligibility using procedures adopted by the SHRC.
- Those California Points of Historical Interest that have been evaluated by the Office of Historic Preservation (OHP) and recommended to the SHRC for inclusion in the California Register.

Other resources may be directly nominated to the California Register by either individuals or local governments including:

- Individual historical resources.
- Historical resources contributing to the significance of a historic district.
- Historical resources identified in historical resources surveys with a significance rating of Category 1 to 5.
- Historical resources designated or listed by city or county ordinance, provided that the criteria used to evaluate them are consistent with those adopted by the SHRC.
- Local landmarks or historic properties designated under any municipal or county ordinance.

County:

Sacramento County currently does not have an historic preservation ordinance. However, the Sacramento County General Plan states the following goal:

> Promote the inventory, protection and interpretation of the cultural heritage of Sacramento County, including historical and archaeological settings, sites, buildings, features, artifacts and/or areas of ethnic, historical, religious or socio-economical importance.

The County General Plan sets forth policies and programs under the following objectives:

1. Attention and care during project review and construction to ensure that cultural resource sites, either previously known or discovered on the project site, are properly protected with sensitivity to Native American values.

2. Structures with architectural or historical importance preserved to maintain exterior design elements.

3. Known archaeological and historic sites protected from vandalism, unauthorized excavation, or accidental destruction.

4. Comprehensive knowledge of archaeologic and historic site locations.

5. Properly stored and classified artifacts for ongoing study.

6. Public awareness and appreciation of both visible and intangible historic and cultural resources.

In addition to the provisions of the General Plan, the County of Sacramento has an environmental review process for projects involving discretionary permits that requires cultural resource reports to be prepared in situations where development is proposed in areas known to be sensitive for cultural (archaeological and historic) resources.

Evaluations:

One archaeological resource, PA-95-61, was identified during the field survey. According to Peak and Associates:

> This historic period refuse scatter contains a limited range of artifacts that are marginally greater than 45 years old. The deposit does not appear to have great depth, and the recordation of this site has essentially exhausted the research potential of this site area. It is unclear why this isolated location was selected for a refuse deposit, and this scatter may represent the illegal dumping of household waste material. It does not appear to represent a long term deposition of discarded goods.
>
> Under CEQA criteria, this deposit does not qualify as an "important archeological resource." The location of this refuse deposit and description of the artifacts observed will be preserved through the placement of the form and maps within the North Central Information Center of the California Archeological Inventory. No additional mitigation is required.

Peak and Associates have also evaluated the importance of structures identified within the proponent parcels (the Survey Area) according to the CEQA criteria noted above. Where it was possible to approach close enough for a reasonable inspection, other structures in the Plan Area were evaluated by the same criteria. According to Peak and Associates:

> It has been established through historic research that none of the properties on the proponent parcels are directly related to the original settlers on the land or the early period of regional history. The oldest structures date to about the turn of the century or slightly earlier. All of the structures are residences, barns and other outbuildings related to farming. It does not appear that any of the other structures within the remaining Plan Area were directly related to the

original settlers either.

The importance of each structure in the Plan Area, therefore, depends on unusual or particularly well executed architectural design or on unusual structural techniques or workmanship. Identifiable architectural styles potentially existing in the Plan area include Craftsman and Queen Anne Victorian. Each extant (existing) property within the Plan Area is described below with reference to these considerations.

Three structures exist within the proponent's parcel in the Plan area (the area subject to intensive investigation). These include Structures 1, 4 and 10. The remaining structures are located within the Plan area but not within the proponent's parcels. Descriptions and evaluations of all of the structures, as provided by Peak and Associates, follow below.

Structure 1, 9230 Florin Road (S1).

This single family home is located along Florin Road between Hedge Avenue and Bradshaw Road (see Plate CR-F). According to the Sacramento County Assessor's Office, this structure was constructed in 1910. The home is one and one-half stories high with a moderately steep hipped roof. The style of this home would classify it within the Craftsman bungalow tradition (McAlester and McAlester 1990:452-463). The home has not been significantly modified since the original date of construction.

In keeping with the Craftsman tradition, the gabled dormers on the roof have exposed rafters and, with the exception of an added air conditioning unit in the window of the east dormer and a sliding window under the south dormer, the windows appear to be original double-hung transom windows. In addition to the windows, four plain columns with sloping sides, resting on brick piers that begin at ground level and extend almost half-way above the porch level, support the porch roof. A balustrade with turned spindles runs between the pillars and from the corner pillars to the wall. Another Craftsman element is the narrow lapped siding.

There is nothing unusual about the architecture of the structure overall. Many houses in this style were constructed from design books and varied only in minor touches favored by the individual builder and by degree of craftsmanship. The craftsmanship in this case appears first rate. It is a good example of the Craftsman bungalow style, although the air conditioning unit and the replacement of the south window somewhat limit its value as a typical structure of a recognizable style. Still, this structure appears to satisfy the criteria for importance as a representative example of an identifiable architectural style.

Structure 4, Address Unknown (S4).

This structure is currently used as a storage building and may never have been utilized as a home. It is located to the south of Florin Road between Hedge Avenue and Bradshaw Road (see Plate CR-F). According to the County Assessor's office, this structure was constructed in 1930. It is single-story with unpainted wood siding and a corrugated metal roof. The structure does not appear to have been maintained beyond what is necessary.

Currently this structure is used as an outbuilding or barn. Although it appears that this structure was a residence at one time, it is indeterminate as to the length of occupancy. Because of the lack of architectural style and the poor condition of this structure, it does not appear to be architecturally important.

Structure 10, 9351 Gerber Road (S10).

This single story home is located approximately 0.6 miles west of the intersection of Florin and Bradshaw Roads along Florin Road (see Plate CR-F). The home is "L" shaped in configuration and has a cross-gabled, moderately sloped roof. Stylistically, this home would be classified within the National Folk style. According to the Sacramento County Assessor's office, this structure was constructed in 1920. The home currently has stucco siding and a composition roof; two elements that were not likely original. Modern materials have been used to construct a small porch along the east side. It is also possible that the front section of the house (cross-gable) was added at a later date.

There is nothing unusual about the architecture of this structure. The enclosure of the porch and the replacement stucco siding detract from the original character of the building. Due to the alterations and the lack of a distinct style, the structure does not have architectural merit.

Structure 2, 9204 Florin Road (S2).

This area contains three structures; a single family home, a water tower, and a detached garage. This complex is located just east of the intersection of Florin Road and the Central California Traction Railroad (see Plate CR-F). According to the Sacramento County Assessor's Office, the home was constructed in 1922. Significant alterations have occurred to each of the three structures with the addition of new siding, windows, and roofing material. Although the outline of the home and certain design features would classify it as a Craftsman bungalow, it has been modified extensively (McAlester and McAlester 1990:452-463). Unfortunately, the modifications to the home and outbuildings are so extensive, and so much out of character with the original design, that the buildings could not be returned to anything like their original appearance without a major restoration project. Unless this is feasible, the structure no longer has architectural merit.

Structure 3, 9384 Florin Road (S3).

This single family home is situated south of Florin Road between Hedge Avenue and Bradshaw Road (see Plate CR-F). This home is the oldest of the eleven structures analyzed as the Sacramento County Assessor's Office has a construction date of 1900 listed. The home is single storied with a low pitched gable and hipped roof, bay windows and a porch. Stylistically, this home fits within the Queen Anne Victorian style (McAlester and McAlester 1990:262-287). This structure has not been significantly modified since the date of construction.

The architectural style of this structure is not unusual. The Queen Anne was the dominant style of domestic building from approximately 1880 until 1900, although it existed with decreasing popularity until 1910. The craftsmanship of this structure appears to be first rate. It does not appear that any alterations have been made to the structure. The house seems to be very well maintained and it is possible that the architecture could be of some interest. When this property is developed, further study of this structure should be conducted.

Structure 5, Address Unknown (S5).

This single family home is located along Florin Road between Hedge Avenue and Bradshaw Road (see Plate CR-F). The home is one and one-half stories high and was constructed in 1935 according to the County Assessors Office. The house has a side-gabled moderately steep pitched roof and gabled dormer that extends over a partial porch. A shed roof extends over a rear porch. The siding appears to be original but the roof has recently been replaced with composition shingles. The remaining elements of the house appear to be original as well. This structure is considered as a Minimal Traditional Style (McAlester and McAlester 1990:476-478). A detached garage is located to the southwest of the main structure and has a flat shed roof and stucco siding.

There is nothing unusual about the architecture of this structure. If the 1935 date is correct, the structure appears to be an early example of the Minimal Traditional style. It does not appear to be architecturally significant. If the associated garage dates to the same time period as the home, it has been modified significantly.

Structure 6, Address Unknown (S6).

This structure consists of a single family home that is located on Florin Road, approximately 900 feet west of the intersection of Bradshaw and Florin Roads (see Plate CR-F). The Sacramento County Assessor's Office indicates that this structure was built in 1908. It is one and one-half stories high with a bay window and covered front porch. The home has the original wood shiplap siding and wood shingles that appear to have been replaced sometime

during the past 87 years. The original double-sash windows are enclosed with decorated wood trim. Other decorative elements include fish-scale siding, cut-away bays, and corner-bracket detailing. Stylistically, this home fits within the Queen Anne style cottage (McAlester and McAlester 1990:262-287).

There is nothing unusual about the architecture of the structure overall, although it is unusual for the immediate region. While the Queen Anne style was popular throughout the United States, many houses of this style varied in the amount of ornate detailing including wall textures and spindle work. The craftsmanship in this case appears first rate. If the construction date is correct, this structure is a good example of a late Queen Anne Victorian. This structure appears to satisfy the criteria for importance as a representative example of an identifiable architectural style. It is very well maintained and it is possible that the vernacular architecture could be of some interest. When this property is developed, further study of this structure should be conducted.

Structure 7, Address Unknown (S7).

This single family home is located along Florin Road, approximately 200 feet east of the intersection of Florin and Bradshaw Roads (see Plate CR-F). The home has a moderately steep, cross-gabled roof with double-sash windows, plain and fish-scale siding, and a more modern composition shingled roof. A partial front porch is supported by brick and wood balustrades. The rafters, typical of a Craftsman bungalow home, are exposed.

The exposed rafter ends, balustraded porch, and wide, open overhangs at the eaves mark the structure as a Craftsman bungalow. The decorated fish-scale siding is more of a throwback to earlier, Victorian-influenced styles. The building record suggests a 1925 date for the structure, a date that fits with the style of Craftsman bungalow. The Greene brothers, whose work in the Pasadena area inspired the style, did not begin designing Craftsman bungalows until 1903 (McAlester and McAlester 1990:454) and it was 1905 or so before the style achieved popularity with the general public. This house is a good example of a Craftsman bungalow with a few distinctive touches of its own. The structure has architectural merit and when this property is developed, further study of this structure should be conducted.

Structure 8, 9673 Gerber Road (S8).

This small, single-story home is located along Gerber Road, approximately 400 feet east of the intersection of Gerber and Bradshaw Roads (see Plate CR-F). Stylistically, this home shares several features typical of the Craftsman bungalow style including a covered front porch, exposed roof rafters, and a moderately pitched front gabled roof (McAlester and McAlester 1990:452-463). According to the Sacramento County Assessor's office, this home was constructed in 1928. The double-sash windows and siding appear to be original features,

although the modern composition shingle roof does not. Another interesting characteristic of this home is the enclosure of a portion of the porch (east side) with siding and a casement window. The entryway to the porch area appears to have been modified also as the entryway, instead of being in the center of the home, is now offset to the east. The presence of two, relatively large *Thuja spp.* along what would have been the center entryway to the raised porch area may explain this relocation of access. A white picket fence encloses the property and a small detached shed appears to be located to the rear of this home.

There does not appear to be anything unusual in the architecture of this house. If the 1928 construction date is correct, then it was built rather late in the period of greatest popularity for this style. The alterations to the porch area combined with the lack of detail limits the architectural value of this structure. It does not appear to be architecturally significant. The associated shed is also a standard structure.

Structure 9, 9437 Gerber Road (S9).

This small home is located approximately 550 feet west of the intersection of Gerber Road and the Central California Traction Railroad (see Plate CR-F). The structure is "L" shape in outline and has characteristics that would place it within the National Folk style architectural classification (McAlester and McAlester 1990:89-92). According to the Sacramento County Assessor's office, this structure was built in 1930. Since the time of original construction, the front door, windows, and portions of the front siding have been replaced with modern materials. The galvanized metal roof may be original in terms of composition, but the current roof appears to be an updated version of the original.

This structure does not appear to have been noteworthy prior to the renovations and the modifications have reduced its architectural value even more. This structure does not qualify as important.

Structure 11, Address Unknown (S11).

This small home is located approximately 600 feet south of Florin Road, about 0.7 miles west of the intersection of Florin Road and Bradshaw Road (see Plate CR-F). It is rectangular in outline and single story and is currently sided with pink/orange colored stucco and modern composition shingles. According to the Sacramento County Assessor's office, this structure was constructed in 1940. If the date of construction is correct, the style appears to be Minimal Traditional. Two outbuildings are located to the south of the house; a single car detached garage and a metal shed. Due to the questionable style and the poor repair of one structure, this complex does not appear to be architecturally important.

Structure 12, 9494 Florin Road (S12).

This structure is located approximately 1550 feet south of Florin Road near the center of Section 5 (see Plate CR-F). According to the Sacramento County Assessor's office, this structure was constructed in 1930. Stylistically, this "L" shaped home would be classified within the National Folk style (McAlester and McAlester 1990:89-92). Based on analysis of topographic map quadrangles and a review of construction materials and design, it would appear that this home may have had an addition constructed along the western edge of the building. Two other modern-appearing outbuildings are located within the complex area. Due to the uncertain architectural style and the later modifications, this complex does not appear to be architecturally important.

Summary and Mitigation.

Peak and Associates has provided the following conclusions regarding their research within the Specific Plan area:

> The Plan Area lies on a flat open plain of the Sacramento Valley with no permanent water sources present. Two intermittent branches of Elder Creek transect the area along the western margin. Prehistoric period campsites and villages are normally not discovered in areas with no permanent water sources. It is entirely likely that the Native American people utilized this area for seasonal resource collection, but did not inhabit the Plan Area on a permanent basis. The gathering/hunting of plants and animals rarely leaves tangible evidence of this activity, other than the isolated, lost tool.
>
> The land of the Plan Area has been in agricultural use from the 1850s up to the present day. Generally, farmers first took up the land with first rate soil, with a later wave of settlers selecting the tracts with second rate soil. The soil type, combined with a lack of natural water sources, made the latter useful for dry land cultivation of hay and grain, or for seasonal grazing. Later, with the development of better systems for pumping water and irrigation, the land could be used more intensively for vineyards and small fruit orchards.
>
> None of the surviving structures within the Survey Area represent the early years of pioneer settlement in this area. The earliest structures date to about the turn of the century. There are a number of structures in the Plan Area dating within the 1900-1920 era representing small rural residence types and agricultural utility buildings common for this period. The types of residences within the Plan Area varied. The two most common styles were the Craftsman

bungalow, which was popular throughout rural America from about 1905 to 1920, and the Minimal Traditional, a style that became popular in the late 1930s and remained the dominant style during the post-war 1940s and 1950s. Examples in the Plan Area range from well preserved to poorly maintained to remodeled beyond recognition. None of the extant buildings are associated with important individuals or events, and therefore, do not constitute "important" resources under CEQA criteria in this area.

However, four (4) historic structures have been identified as potentially important due to their architectural integrity and as representative examples of identifiable architectural styles. A summary of these structures and their attributes is provided in Table CR-2. One of these structures, Structure 1, is located within the proponent's parcels (the Survey Area). The other three (Structures 3, 6, and 7) are located within the remaining Specific Plan planning area. Impacts to these structures as a result of the project would be considered **potentially significant**.

There are several possible courses for avoiding or mitigating adverse effects to the historic structures located within the Plan area. If preservation in place is feasible, they should be saved. If preservation in place is not feasible, then a structure could be moved. If the structure must be destroyed, then its appearance and history should be fully documented beforehand. It is probable that the structures could be individually nominated to the National Register of Historic Places at the local level of significance. If so, documentation according to the standards of the Historic American Buildings Survey would be appropriate. In any event, documentation at that level should be required, that is: complete, archival quality photographic documentation (interior and exterior); preparation of a site-specific historical narrative, including identification of designer, builder, owners and their place in regional history; and recovery of the original architectural plans or, failing this, re-creation of such plans.

No prehistoric, archaeological sites were encountered during the field investigation of the petitioner's parcels. However, the lack of surface evidence does not preclude the existence of important, subsurface cultural materials. There is a potential to unearth buried cultural remains during future project construction activities. Caution should, therefore, be exercised during future development activities. Any accidental encountered of previously unidentified cultural materials will require notification of the Department of Environmental Review and Assessment. If skeletal remains are encountered, both the Department of Environmental Review and Assessment and the County Coroner must be immediately notified (see below). Impacts to subsurface archaeological resources as a result of the project area considered **potentially significant**.

Only the areas of the petitioner's parcels (the Survey Area) and the off-site detention facility

TABLE CR-2 Architecturally Important Structures in the Plan Area		
Structure Number (Address if known)	Year of Construction	Architectural Style & Design Elements:
Structure 1 (9230 Florin Road)	1910	Craftsman Bungalow. ▪ Not significantly modified since construction ▪ Original double-hung transom windows ▪ Balustrade w/turned spindles between pillars ▪ Narrow lapped siding
Structure 3 (9384 florin Road)	1900	Queen Anne Victorian. ▪ Not significantly modified since construction ▪ First rate craftsmanship ▪ Turned spindle pillars ▪ Balustrade w/turned spindles between pillars ▪ Gable ornaments
Structure 6	1908	Late Queen Anne Victorian; cottage style. ▪ Not significantly modified since construction ▪ Original shiplap siding & double-sash windows ▪ Fish scale siding, cut-away bays ▪ Corner-bracket detailing
Structure 7	1925	Craftsman Bungalow. ▪ Not significantly modified since construction ▪ Cross-gabled roof w/double-sash windows ▪ Plain & fish scale siding ▪ Brick & wood balustrades ▪ exposed rafter ends
Source: Peak & Associates, *Cultural Resources Assessment North Vineyard Station Specific Plan*, December 18, 1995		

and channel realignments have been subject to intensive cultural resource surveys. The potential impacts to cultural resources resulting from the development of these surveyed areas can be characterized at this time. However, remaining parcels within the Specific Plan boundaries and any off-site facility areas identified in the future will require intensive survey. Until such time, impacts to previously unidentified cultural resources in these areas would be considered **potentially significant.**

When specific development plans are filed for parcels not within the proponent's parcel survey area, a part of the requirements will be detailed archeological survey. The purpose of the surveys would be identification of any prehistoric resources and, as necessary, augmentation of the information on historic structures identified by Peak and Associates. It should be noted that although not indicated on the modern USGS map, there could be other structures in the Plan Area outside of the proponents' parcel survey areas that have not been examined. Certainly there could be structural remnants worthy of evaluation for their historic archeological potential.

As noted earlier, the County of Sacramento has an environmental review process for projects involving discretionary permits that requires cultural resource reports to be prepared in situations where development is proposed in areas known to be sensitive for cultural (archaeological and historic) resources. All future development proposals for the Specific Plan area will be subject to discretionary review. Appropriate evaluation of impacts and mitigation will occur at that time.

Mitigation Measures:

Adoption of the proposed project could result in future disturbance of known and unknown prehistoric and/or historic resources. These impacts are considered potentially significant. As noted above, the County of Sacramento has an environmental review process for projects involving discretionary permits that requires cultural resource reports to be prepared in situations where development is proposed in areas known to be sensitive for cultural (archaeological and historic) resources. Since future development within the Plan area will require additional entitlements such development will also be subject to further discretionary review. Potential construction-related impacts to cultural resources will be addressed at that time. However, to ensure impacts to cultural resources are minimized and addressed at the earliest stages of proposed development, the following measures shall be incorporated into the North Vineyard Station Specific Plan, Draft Policy Plan and development standards and/or design guidelines.

CR-1. Encourage the retention of important cultural features in the design of future projects.

CR-2. Cultural resource surveys will be required in areas not previously subject to intensive investigation (that portion of the Plan Area not currently identified as the proponent's parcels). If ground disturbing activities are planned within or adjacent to the boundaries of any identified archaeological sites, the following shall be required:

(a) The site area will be inspected by a qualified, professional archaeologist to assess the condition of the property and the determine the current status of the deposit.

(b) Based on this review and, as appropriate, a subsurface testing program will be developed and implemented to determine if the property meets criteria specified in Appendix K of CEQA to qualify as an important archaeological resource. The course of the testing program should be clearly delineated in a research design which outlines prehistory of the area; research domains, questions, and data requirements; research methods inclusive of field and laboratory studies; report preparation; and significance criteria.

(c) Following field investigations, a technical report describing the evaluation program should be prepared. At a minimum this report shall include the elements discussed in the research design, as well as a description of the recovered site assemblage and a significance evaluation. If, based on the results of the testing program, a site is not determined to be an important archaeological resource, then effects to it would have been reduced to less than significant.

(d) If the site is determined to be an important archaeological resource, then additional mitigation measures, namely data recovery investigations may be necessary to reduce impacts to less than significant.

(e) As Native American archaeological resources are involved, identification and treatment shall be conducted in consultation with the local Native American community.

(f) Archaeological investigations shall be conducted by a

qualified, professional archaeologist who either meets the federal standards as stated in the Code of Federal Regulations (36 CFR 61) or is certified by the Society of Professional Archaeologists (SOPA).

CR-3. An historic architectural study shall be performed by a qualified, professional architectural historian if historic structures or buildings are present on the particular parcel subject to development. This inventory should comply with NEPA and/or CEQA and include consultation with the NCIC and the Sacramento County Historical Society. The resulting report should include results of the background literature search and field survey, an historic context statement, an analysis of the potential significance of noted resources, and recommendations for their preservation and/or mitigation.

CR-4. Should any cultural resources, such as structural features, unusual amounts of bone or shell, artifacts, human remains, or architectural remains be encountered during <u>any</u> future development activities, work shall be suspended. Depending on the location of the activities, the appropriate Lead Agency shall be immediately contacted. This agency will coordinate any necessary investigation of the find with appropriate specialists as needed. The project proponent shall be required to implement any mitigation deemed necessary for the protection of the cultural resources. In addition, pursuant to Section 5097.97 of the State Public Resources Code and Section 7050.5 of the State Health and Safety Code, in the event of the discovery of human remains, all work is to stop and the County Coroner shall be immediately notified. If the remains are determined to be Native American, guidelines of the Native American Heritage Commission shall be adhered to in the treatment and disposition of the remains.

Hazardous Materials

This section addresses the anticipated effects of known or suspected hazardous material contamination on development in the Plan Area. The primary concern is the potential increased risk to human health and/or the environment from exposure to existing soil, groundwater and/or structure contamination resulting from construction and development of the Plan Area during the life of the project.

The term "hazardous materials" refers to both hazardous substances and hazardous wastes. A material is defined as hazardous if it appears on a list of hazardous materials prepared by a federal, state or local regulatory agency or if it has characteristics defined as hazardous by such an agency.

The definition of a hazardous waste as regulated by the California Environmental Protection Agency, Department of Toxic Substances Control (CAL-EPA, DTSC), is found in the California Health and Safety Code Section 25141(b), as follows:

> "...as hazardous waste because of its quantity, concentration, or physical, chemical, or infectious characteristics: (1) cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible illness; (2) Pose a substantial present or potential hazard to human health or the environment, due to factors including, but not limited to, carcinogenicity, acute toxicity, chronic toxicity, bioaccumulative properties, or persistence in the environment, when improperly treated, stored, transported, or disposed of, or otherwise managed."

Table HM-1 lists general hazardous material categories and nature of the hazards associated with said category.

Worker and public health are potentially at risk whenever hazardous materials are, or will be used. It is necessary to differentiate between the "hazard" of these materials and the acceptability of the "risk" they pose to human health and the environment. A hazard is any situation that has the potential to cause damage to human health and the environment. The risk to health and public safety is determined by the probability of exposure, in addition to the inherent toxicity of a material, determine the degree of risk to human health. When the risk of an activity is judged acceptable by society, in relation to perceived benefits, then the activity is judged to be safe.

For example, ammonia is a common household chemical whose use has been judged safe in our society. Although it can be hazardous to health, irritating the eyes, respiratory tract and skin, and even causing bronchitis or pneumonia following severe exposures, the risk of such a severe exposure is believed to be low. Therefore, the use of household ammonia is thought

TABLE HM-1 GENERAL HAZARDOUS MATERIAL CATEGORIES & HAZARD NATURE	
General Category	**Nature of Hazard**
Compressed Gases	Pressurized gases, liquefied gases, cryogenic gases, dissolved gases stored under pressure and can explode.
Severe Poisons	Substances that may cause death or injury at relatively low concentrations, or significant health effects from chronic exposure at relatively low concentrations.
Moderate Poisons	Substances that may cause death or injury at relatively low concentrations, or significant health effects from chronic exposure, or harmful effects from acute exposure at higher concentrations.
Water Reactives	Materiels that react violently with water to produce fire or toxic fumes other than strong acids or bases.
Oxidizers	Materials that release oxygen or add to the intensity of a fire.
Flammables	Liquids or solids that readily burn and/or are difficult to extinguish.
Corrosives	Materials that are strong acids or bases, will corrode skin or metal, and my react violently with water.
Radioactives	Materials that emit ionizing radiation.
Biohazards	Disease producing living organisms or spores.
Other Hazardous Materials	Includes carcinogens, halogenated solvents, explosives and others.

to be a safe activity.

Exposure to hazardous materials associated with the proposed project could occur in the following manner:

- Improper handling/use during course of business, particularly by untrained personnel;
- Failure of storage containment systems;
- Environmentally unsound treatment/disposal methods;
- Transportation accidents; or
- Fire/explosion or other emergencies.

Factors that can influence the health effects of exposure to hazardous materials include the dose the person is exposed to, the frequency of exposure, the duration of exposure, the exposure pathway (route by which a chemical enters a person's body) and the individuals unique biological susceptibility.

Regulatory Setting.

Many agencies regulate hazardous substances, materials, and waste. The following discussion contains a summary review of regulatory controls pertaining to hazardous materials, including federal, state and local laws and ordinances pertaining to the management of hazardous materials.

Federal

Federal agencies that regulate hazardous materials include the Environmental Protection Agency (EPA), the Occupational Safety and Health Administration (OSHA), the Department of Transportation (DOT), and the National Institute of Health (NIH). The following federal laws and guidelines govern hazardous materials.

- Federal Water Pollution Control
- Clean Air Act
- Occupational Safety and Health Act
- Federal Insecticide, Fungicide, and Rodenticide Act
- Comprehensive Environmental Response, Compensation, and Liability Act
- Guidelines for Carcinogens and Biohazards
- Superfund Amendments and Reauthorization Act Title III
- Resource Conservation and Recover Act Safe Drinking Water Act
- Toxic Substances Control Act.

Prior to August 1992, the principal agency at the federal level regulating the generation, transport and disposal of hazardous waste was the EPA under the authority of the Resource

Conservation and Recovery Act (RCRA). As of August 1, 1992, however, the California Department of Toxic Substance Control (DTSC) was authorized to implement the State's hazardous waste management program in place of the EPA. The federal EPA continues to regulate hazardous substances under the Comprehensive Response Compensation and Liability Act (CERCLA).

State.

The California Environmental Protection Agency (Cal-EPA) and the State Water Resources Control Board establish rules governing the use of hazardous materials and the management of hazardous waste. Applicable state and local laws include the following:

- Public Safety/Fire Regulations/Building Codes
- Hazardous Waste Control Law
- Hazardous Substances Information and Training Act
- Air Toxics Hot Spots and Emissions Inventory Law
- Underground Storage of Hazardous Substances Act
- Porter Cologne Water Quality Control Act

Within Cal-EPA, DTSC has primary regulatory responsibility, with delegation of enforcement to local jurisdictions that enter into agreements with the state agency, for the management of hazardous materials and the generation, transport and disposal of hazardous waste under the authority of the Hazardous Waste Control Law (HWCL).

Local.

The County of Sacramento, Office of Emergency Services implements the State's Right-to-Know Ordinance which gives it the authority to inventory hazardous materials used by businesses. The County is also in the process of collecting information regarding existing and proposed locations of hazardous material disposal, storage, handling and transportation facilities.

The Sacramento County Environmental Management Department (EMD) is responsible for enforcing the state regulations, on both the city and county level, governing hazardous waste generators, hazardous waste storage, underground storage tanks (USTs), and environmental health including inspections and enforcement. EMD also regulates the use, storage, disposal of hazardous materials in the County and abandonment of wells and septics systems in the County by issuing permits, monitoring regulatory compliance, investigating complaints, and other activities. EMD reviews technical aspects of hazardous waste site cleanups, and oversees remediation of certain contaminated sites resulting from leaking underground storage tanks. EMD is also responsible for providing technical assistance to public and private entities which seek to minimize the generation of hazardous waste.

Table HM-2 lists federal, state and local regulatory agencies that oversee hazardous materials handling and hazardous waste management, and the statutes and regulations that they administer. Table HM-3 lists common acronyms used by these agencies in the implementation of hazardous materials regulations. Many of these acronyms are also found in the technical study, or site assessment, discussion that follows.

Technical Study/Site Assessment.

A hazardous materials technical study, or site assessment, for the Plan Area was prepared by Wallace, Kuhl and Associates, Inc. (hereafter: 'WKA'). This site assessment analysis is entitled *Preliminary Phase 1 Environmental Site Assessment: North Vineyard Station Specific Plan,* WKA No. 2954.01 (December 22, 1995).

The purpose of the site assessment was to evaluate the Plan Area for evidence of potential soil and ground water contamination resulting from current and/or former site activities in accordance with the *Comprehensive Environmental Response, Compensation and liability Act (CERCLA)* of 1980 and the *Superfund Amendments and Reauthorization Act (SARA)* of 1986.

The site assessment analysis in its entirety can be reviewed at the Sacramento County Department of Environmental Review and Assessment (DERA), and/or the Planning and Community Development Department. The following discussion incorporates much of the text of the WKA, Inc. technical study verbatim.

The WKA Phase I Analysis consisted of a database search intended to identify avoidance areas or areas where uses should be limited for land use planning. The Phase 1 Site Assessment focused on proposed development areas with identified potential hazardous materials impacts and lists potential limitations to land use.

Most field observations were made from the roads and right of ways adjacent to sites. Where site conditions warranted closer observations and if access arrangements were made (actively participating project proponents properties), on-site investigations were conducted. Where site conditions warranted closer observations, but access was not authorized (non-proponent properties), aerial site observations were conducted. WKA staff flew the project area at low elevation in a private plane and took color photographs for further review and analysis.

Site-Types:

A variety of "site-types" were identified during the Phase I Analysis. Each of these "site-types" are noted and discussed below. Recommendations with respect to common hazardous material issues applicable to the various site-types are made at the end of this section.

TABLE HM-2 SUMMARY OF HAZARDOUS MATERIALS REGULATORY AUTHORITY	
Regulatory Agency	**Authority**
FEDERAL AGENCIES	
Department of Transportation (DOT)	Hazardous Materials Transportation Act - Code of Federal Regulations (CFR) 49
Environmental Protection Agency (EPA)	Federal Water Pollution Control Act Clean Air Act Resource Conservation & Recovery Act (RCRA) Comprehensive Environmental Response, Compensation & Liability Act (CERCLA) Superfund Amendments & Reauthorization Act (SARA) Federal Insecticide, Fungicide, and Rodenticide Act
Occupational Safety & Health Administration (OSHA)	Occupational Safety and Health Act & CFR 29
STATE AGENCIES	
Dept. Of Toxic Substances Control	California Code of Regulations
Dept. Of Industrial Relations (CAL-OSHA)	California Occupational Safety & Health Act, CCR Title 8
State Water Resources Control Board & Regional Water Quality Control Board	Porter-Cologne Water Quality Control Act Underground Storage Tank Law
Health & Welfare Agency	Safe Drinking Water and Toxic Enforcement Act
Air Resource Board & Air Pollution Control District	Air Resources Act
Office of Emergency Services	Hazardous Materials Release Response Plans/Inventory Law Acutely Hazardous Materials Law
Dept. of Fish & Game	Fish & Game Code
Dept. of Food & Agriculture	Food & Agriculture Code
State Fire Marshall	Uniform Fire Code, CCR Title 19
COUNTY AGENCIES	
Sacramento County Environmental Management Dept.	CCR Title 22 Hazardous Waste Control Law Hazardous Materials Release Response Plans/Inventory Law Acutely Hazardous Materials Law Underground Storage Tanks Law

TABLE HM-3
SUMMARY OF COMMON HAZARDOUS MATERIALS ACRONYMS

Acronym	Definition
ASPIS	Abandoned Stites Project Information System
ASTM	American Society for Testing & Materials
AST	Aboveground Storage Tank
CERCLA	Comprehensive Environmental Response, Compensation & Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation & Liability Information System
CHMIRS	California Hazardous Materials Incident Rep[ort System
CIWMB	California Integrated Waste Mangement Board
DSTC	Department of Toxic Substances Control
EMD	Sacramento County Environmental Management Department
EPA	Environmental Protection Agency
FINDS	Facility Index System
HSA	Hazardous Materials Acounts
LQG	Large Quantity Generator
LUST	Leaking Underground Storage Tank Information System
NPL	National Priority List
OES	Office of Emergency Services
RCRA	Resource Conservation & Recovery Act
RCRIS	Resource Conservation & Recovery Information System
SARA	Superfund Amendments and Reauthorization Act
SQG	Small Quantity Generator
SWAT	Small Quantity Generator
SWIS	Solid Waste Information System
TSD	Treat, Store, &/or Dispose of Hazardous Waste

Rural Residential Sites.

This site-type typically consists of a single-family residence with associated outbuildings. The age of existing structures for this category has a large range. Some rural residential sites appear to have been constructed during the 1970s or later. Generally, these structures are not as old as the homestead sites.

These sites typically contain water supply wells and some are small-scale livestock raising and/or equestrian establishments. The sites generally appeared unencumbered with respect to potential hazardous materials contamination.

Homestead Sites.

These are the oldest developed sites within the Plan Area, some of which were constructed in the 1950s and 1960s. The homestead sites typically contain some or all of the following: water supply well(s), mobile homes, detached garages and/or larger, apparently ranching-related shop buildings, large cattle-related barns and/or corrals, various buildings apparently used for storage, other agricultural production-related detached structures (such as milking barns on dairy sites), and tractor and implement storage/parking areas.

The project area contains approximately five historic homestead sites, one of which is a former dairy; three are homestead sites that appear to be dry-farming, equestrian and cattle ranching facilities. The existing dairy (discussed later) is not included in the historic homestead site category since it was constructed in the 1980s. The large homestead sites are generally located around the perimeter of the project area, surrounding the pastures and hay croplands in the central portion of the project area. For purposes of the Phase I Analysis, the homestead sites are distinguished from rural residential sites typically by site size and scale of operations.

Commercial Sites.

Approximately ten commercial sites exist within the Plan Area. One commercial site, the B & E Market, is discussed in a subsequent section as it is an agency-listed facility. Several of the sites have some developmental features in common with those site-types mentioned above.

Since no formal access to these parcels were arranged, the sites were observed from a private plane and from adjacent sites. Several stored and abandoned vehicles are located behind the structures of the Rose Nursery (APNs 066-008-001 and 065-008-029. Stockpiles of irrigation piping, aboveground storage tanks (ASTs), tires, and mounds of debris containing unidentifiable materials were in full view from the plane on Parcel 1. A rectangular reservoir is also located on the easterly side of Parcel 1 north of the greenhouses. The nursery area on Parcel 29 also has mounds of unidentifiable debris, vehicles, and ASTs.

Results of Field Reconnaissance & Windshield Survey:

General.

No obvious evidence of significant hazardous materials contamination were observed, although some evidence and/or features did indicate areas of potential hazardous materials contamination. To address these potential areas of on some non-proponent properties concern closer field reconnaissances of some non-proponent properties will need to be performed. Subsequent to additional field reconnaissance, the necessity to perform Phase 2 soil sampling and testing at the non-proponent sites should be further evaluated. No obvious evidence of potential hazardous materials contamination was observed on the proponents property.

During field reconnaissance strawberry fields and a greenhouse were observed on Parcel 066-007-043, located on the south side of Florin Road between the electrical transmission line right-of-ways. Commercial sales of fresh strawberries is conducted along an access road east of the strawberry field. Pesticide use information will be discussed later.

South of the strawberry field, on Parcel 066-007-045 ("Munoz Trust" property), several pieces of heavy machinery were observed including a water truck, grader, compactors, two tractor/trailer rigs, a front-end loader and other miscellaneous equipment stored/parked on the soil and gravel surface within a fenced yard. Structures include construction office trailers and covered storage areas. Aerial reconnaizance of the site at a low altitude revealed piles of debris including concrete, cut tree trunks, and other unidentifiable items on the westerly side of the parcel. One AST was resting on the ground surface near the easterly parcel boundary; no obvious soils staining was observed from the plane.

Apparent vent pipes were observed protruding from the ground surface on the east side of Parcel 066-007-017 ("Johnson" property), located on the easterly side of Bradshaw Road. This site is a former dairy.

Nine proponent properties are located within the project area; the properties/parcels are discussed below as groups of parcels identified by the name of the owners listed on the property ownership map (Plate PD-N in the Project Description section).

North Vineyard Investors and Gordon Parcels.

The North Vineyard Investors and Gordon Parcels include APNs 065-052-002, -004, and 065-008-079. The northernmost portion (Parcel 2 - Gordon) consists of a rural residential site including a house, garage, corrals and a small outbuilding which, based on its construction, appears to have been an old milking room for dairy cattle. Beyond the

northwesterly corner of Parcel 2 is a second rural residential site that contains an old residence, outbuildings and discarded or abandoned items. Beyond the westerly boundary of Parcel 2 is another rural residential site that contains a mobilehome, equestrian-related outbuildings and stables.

Elder Creek bisects Parcel 2 south of the two residential sites. The remaining portions of the property, both north and south of the railroad tracks, are dry grazing land and irrigated pasture. Review of aerial photographs and topographic maps indicate that the North Vineyard Investors and Gordon Parcels have generally remained unchanged since 1963; dry-farmed crops and irrigated pasture are visible in the historic photographs. Fewer barns and outbuildings, however, are currently located on the north end of Parcel 2 relative to former structures revealed by the historic aerial photographs.

In August 1994 WKA conducted a Phase 1 Site Assessment Update file for APNs 065-052-002 and -004. This previous work did not include publication of a formal report since a full scope Phase 1 report had been previously completed by others for that portion of Parcel 2 located southerly from Elder Creek. The North Vineyard Investors Parcels contain two agricultural water supply wells, one of which is improperly abandoned; the other is adjacent to an aboveground storage tank that appeared to be used for watering livestock. No obvious surface evidence of buried utilities, such as underground services alert placards, manhole covers or below-grade junction boxes, were observed within the railroad right-of-way. No visibly stained surficial soils were observed within the easement outside the location of the railroad tracks themselves.

The southerly tip of Parcel 2 contains a refuse scatter; this feature was first noted by archaeologists with Peak and Associates, Inc., during their project work. The refuse scatter is located adjacent to the northwesterly side of a lone fruit tree. The scatter is approximately 23 feet in diameter. The predominant contents of the refuse scatter are brick and concrete rubble. The scatter contains several bottle fragments which Peak and Associates indicate are from the late 1930s or early 1940s. Both the project archeologist and WKA generally summarized the feature as containing minimal quantities of domestic and construction materials.

Two 18 inch deep observation holes were also excavated at random locations within the refuse scatter for viewing. The only items observed within both observation holes were brick and concrete fragments. No stained or odoriferous soils nor any items of an obvious hazardous materials nature were observed on the ground surface of the refuse scatter or in the excavated holes. A focused aerial photographic review for the refuse scatter location was also conducted, as discussed in the following paragraphs. The project archeologist noted no developmental items at the scatter location on historical USGS topographic maps dating back to 1907. WKA concur with the archeologist's finding.

In the 1963 aerial photographs, Parcel 2 contains irrigation checks for pasture or hay crops,

trending east/west. The parcel contains the existing homestead site. The on-site homestead has a large home, several outbuildings (one of which is the probable milking room for a dairy observed during field visit) and a large barn (the barn is centrally located between the creek and Florin Road; the barn no longer exists today). Three trees are visible on the southerly area of Parcel 2. During field reconnaissance, the consultant noted that the northernmost tree had fallen down; the central fruit tree remains; and, the southernmost tree had fallen down, although suckers have grown up around its old trunk. Adjacent to the northwesterly side of the fruit tree, in the existing refuse scatter location, is a linear object of little to no relief. The scale of photography does not allow a precise determination to be made with respect to the linear object being a razed structure, an old concrete slab, or a scraped ground surface disturbance. The object is no larger than the existing refuse scatter; the feature does not appear to have a subsurface dimension.

The 1968 aerial photographic enlargement shows the location of the existing refuse scatter as an apparent rectangular-shaped scraped ground location adjacent to the northwest of the fruit tree; the location does not appear to have any relief, nor are any stored or built objects visible on the ground surface. The fields of Parcel 2 remain as pastures. The 1976 aerial photographs reveal no change to the existing refuse scatter location except now a square-shaped object with relief is somewhat visible, being partly beneath the fruit tree canopy adjacent to the north side of the tree. The object is so small in the aerial photographs that its purpose or nature cannot be distinguished. The ground-scraped rectangular area appears unchanged.

For the first time since the 1963 aerial photographs, no distinguishable difference is revealed in the 1981 photos on the ground surface around the fruit tree, relative to surrounding ground surfaces. No stored or built objects are apparent on the existing refuse scatter location in the 1981 aerial photographs. Similarly, little to no change is revealed on the refuse scatter location in the 1991 aerial photographs. Given that no field or historic evidence was observed in connection with the refuse scatter to suggest potential hazardous materials contamination, WKA recommends that the contents of the area be handled in accordance with the guide earthwork specifications contained in the geotechnical engineering report prepared for this project. Specifically, deleterious materials should be removed from Parcel 2 and properly disposed of or recycled off site; the location should be backfilled with engineered fill. If additional information is desired in regard to the refuse scatter, an exploratory trench could be excavated through the area to further evaluate the nature of the feature.

Morvai Parcels.

The Morvai parcels include APNs 066-007-004, -005, -006, 008 and -019. The northwesterly corner is rural residential consisting of four homes, several outbuildings and dilapidated structures. Debris piles and several abandoned vehicles are stored on the site.

The remaining portions of the property are fallow land. Review of aerial photographs and topographic maps indicate that the residential areas on these parcels have remained relatively unchanged since 1963, although the presently fallow land historically supported dry-farmed crops and irrigated pasture.

Point/Vineyard Parcels.

The Point/Vineyard Parcels are located on Gerber and Bradshaw Roads and have APNs 066-008-004, -006 and -013. No obvious evidence of significant hazardous materials contamination on surface soils of the former homestead site (Parcel 13) were observed. The former residential structure, however, has been razed; the building foundation and a large mound of unidentifiable debris and miscellaneous abandoned items remain on the site. It was not possible to determine from field observations alone whether the debris included asbestos-containing materials. This homestead area also contains a corral and apparent livestock feeding area. The remaining portions of the Point/Vineyard Parcels consist of dry grazing land; cattle were grazing at the time of our field reconnaissance.

Given the mixture of wood, masonry, and other building materials at this location, the potential exists that the former structures may have been razed without asbestos abatement prior to the demolition. All of these materials should be removed from this site and properly disposed of or recycled as appropriate. Furthermore, removal and disposal of the debris which appeared to contain building demolition materials may be hindered by the possibility that the debris piles could contain asbestos that was not abated prior to structure demolition. The current property owner may be able to provide documentation that asbestos was abated from former structures prior to demolition.

Review of historic aerial photographs revealed that a structure existed near the railroad tracks on APN 066-008-004. This structure was razed by 1976. No structures were visible on APN 066-008-006. The central portion of the Point/Vineyard Parcels (APN 066-008-013) had three structures in the homestead area in 1963. By 1976 the structures had been razed and three additional structures had been constructed; the remains of one structure was previously discussed.

Courey Parcel.

The Courey Parcel (APN 066-011-001.), also known as the Thomas Dairy, is located at 7461 Bradshaw Road. The Thomas Dairy site consists of two residences, milking barn, and three covered feeding areas. A wastewater pond and two aboveground storage tanks were also observed on this site.

Tommy Thomas, the current tenant and the former property owner were interviewed on June

24, 1995. Mr. Thomas purchased the property in 1980 and has lived and maintained the Thomas Dairy on the property since 1983. Mr. Thomas sold his parcel in May 1995 to a Mr. Cal Maple but will continue to live on the site for another year.

Mr. Thomas indicated that wastewater from cleaning the milking barn flows to a pond located on the northeasterly corner of the parcel. All milking equipment is cleaned with a commercial soap. The milk barn floor is routinely washed down with water containing a trace disinfectant concentration. Mr. Thomas explained that the wastewater, after flowing through the pond, is dispersed on surrounding dry-farmed lands. Mr. Thomas described how very little commercial soap is used for cleaning and that the wastewater is highly diluted by the time it reaches the storage pond. The pond edges contained an abundance of green vegetation at the time of the field reconnaissance; the ponded water had no objectionable discoloration or odors. This dairy, compared to many other dairies in Sacramento County, is a relatively small-scale operation.

Two 500-gallon ASTs, one used to store diesel with the other currently out of service, are located south of the milking barn on a non-secondarily-contained concrete slab. No staining on the ground beneath the ASTs was observed.

The Thomas Dairy does not grow grain crops, but allows natural grasses to grow. Mr. Thomas stated that no agricultural chemicals are applied to the volunteer grasses. Prior to the Thomas' purchase the property was reportedly a portion of a larger area of dry-farmed land. Mr. Thomas indicated that the Hope Brothers historically grew dry-farmed haycrops on both sides (east and west) of Bradshaw Road.

Mr. Thomas indicated that one domestic well exists on the property. Mr. Thomas did not know whether any other wells previously existed that had been hand-dug or drilled and abandoned on his property. No obvious surface evidence of other wells were observed during the field check.

Saca/Florin Investors Parcels.

The Saca/Florin Investors Parcels are located east of Bradshaw Road along Florin Road and have APNs 066-010-072, -003, -005. Rural residential sites are located on the northerly portions of the parcels and grazing land and disced fields comprise the remaining land. On-site improvements include a homestead site with two houses on Parcel -072; two rural residential sites on Parcel -003; and, one residential site on Parcel -005. Each of these homestead sites includes barns, outbuildings and stables. Horses were grazing on Parcel -003 at the time of the field reconnaissance.

Review of the aerial photographs and topographic maps reveal minor changes on the Saca/Florin Investors Parcels. Structures did not appear on the these parcels on topographic

maps prior to 1952. Structures are visible in the 1963 aerial photographs and the number of structures has increased between 1963 and 1980. A small, family-sized orchard (as opposed to commercial agricultural production) is first visible in the 1963 air photos north of the residential site on Parcel -005; an orchard was observed in the same location during the field reconnaissance.

East Bradshaw Gerber Associates Parcels.

The East Bradshaw Gerber Associates Parcels are located on Gerber Road east of Bradshaw Road. This site consists of three parcels with APNs 066-011-010, -011, and -012. These parcels have a gentle westerly slope toward a creek located west of the parcels. At the time of the field reconnaissance the parcels contained no structural development items. The ground surface contained the undisturbed stubble typical of a harvested dry-farmed crop such as grain. The East Bradshaw Gerber Associates Parcels have not changed significantly from their appearances in the earliest aerial photographs (1963) and topographic maps (1909); the parcels have historically supported dry-farmed crops.

Saca Parcels.

The Saca Parcels are located between Gerber and Florin Roads adjacent to the easterly Plan Area boundary. The Saca land consists of three parcels with APNs 066-010-019, -020, and -021. These parcels slope gently to the east. An apparent wetlands area was observed near the easterly portion of the Saca Parcels. Fallow land was observed on the remaining area of the parcels. The Saca Parcels have not changed significantly from their original appearances in the earliest aerial photographs and topographic maps. The parcels have historically supported dry-farmed crops with the exception of the apparent wetlands area.

Potential Air Emissions Sources.

Excluding area traffic on existing surface streets and single-family residences with fireplaces or other home and business heating devices within and adjacent to the project area, no field evidence indicating any stationary sources of potential, substantial air emissions either within the project area or within 500-feet of the project area were observed.

Buried Petroleum Pipeline.

Based on the field observation of placards posted along its length and consistent with our experience along the Bradshaw corridor, a buried liquid petroleum pipeline lies within the street easement beneath the west shoulder of Bradshaw Road. The pipeline is owned,

operated and maintained by Santa Fe Pacific Pipeline Partners, L.P. (SFPP).

Concerning the possibility of leakage along the pipeline route near the project area and in order to obtain additional information regarding the pipeline, a telephone interview with Mike Dollar of SFPP was conducted. Mr. Dollar explained that the observed pipeline section originates at a petroleum terminal in Stockton, California. The pipeline leaves the railroad easement and follows Grant Line and Bradshaw Roads to a terminal in Rancho Cordova, California, at the corner of Bradshaw Road and Folsom Boulevard. From the Rancho Cordova facility, buried petroleum pipelines extend within the railroad easement over the Sierra Nevada mountains to a terminal in Reno, Nevada, and across non-railroad lands to a terminal within Beale Air Force Base in Yuba County. Mr. Dollar reported that to the best of his knowledge no leaks, ruptures or problems are known to have occurred along the buried pipeline course adjacent to or in the vicinity of the project area. This section of the buried pipeline does not appear on the regulatory agency databases discussed in a subsequent section of this report as an identified contamination or spill site.

Results of Agricultural Review & History Interview:

Sacramento County senior agricultural biologist Debbie Thompson was interviewed by WKA with regard to the agricultural history of the project area. Ms. Thompson recalled that the general area was historically farmed by Japanese-Americans until the mid-1940s. The predominant crops, strawberries and vineyards, generally ceased cultivation when the Japanese-Americans lost their land during World War II internment.

Application of DBCP, a nematicide, is sometimes associated with vineyard cultivation; Ms. Thompson reported, however, that in all of her research and interviews with area farmers that she has yet to encounter information to suggest that DBCP was historically used in Sacramento County. Ms. Thompson explained that soil and climate conditions determine whether or not nematodes are a problem in agricultural areas. Ms. Thompson reported that Sacramento County does not have a nematode problem; she believed, therefore, that it was unlikely that DBCP had been applied to the historic vineyards that may have been cultivated within the project area. Ms. Thompson did indicate that DDT, a persistent organochlorine pesticide, could have been applied to former vineyards in the area.

Ms. Thompson stated that after World War II the project area was used predominantly as natural grazing land ("rangeland"), equestrian, dairy and beef cattle pasture land, and for the production of equestrian- and cattle-related dry-farmed crops. Ms. Thompson stated that restricted (persistent) chemicals are typically not applied to agricultural land of this nature.

Ms. Thompson also indicated that wild rice and corn were grown near the westerly side of the railroad tracks that traverse the project area approximately six to eight years ago. Parathion and MCPA may have been used on the rice and 2,4-D may have been used on corn.

Parathion was often used for leaf miner control, and 2,4-D and MCPA were often used to control broadleaf weeds in these crops. Modern agricultural chemicals such as these are currently not known to be persistent in soils for greater than approximately one year from the date of application. Additionally, Ms. Thompson stated that her office has not issued restricted chemicals application permits for any sites within the project area including the observed strawberry field on Florin Road (Parcel 066-007-043).

WKA also performed a personal site and area history interview in September 1995 with Mr. and Mrs. Tsukamoto, residents who have lived in and near the project area for approximately 75 years.

Mrs. Tsukamoto explained how prior to World War II, Japanese-American families cultivated vineyards and strawberries in the Florin area of Sacramento County. Mrs. Tsukamoto recalled that by about 1925 some vineyards had been planted within the project area. Mr. Tsukamoto recalled that the vineyards were of both dry-farmed and irrigated types, the irrigated vineyards being supplied water by windmill-driven pumps and ground water wells. Mr. Tsukamoto described how his grandfather, during the late 1800s, recalled the project area as predominantly natural grass grazing land, prior to the time frame during which the strawberries and vineyards were cultivated.

Due to World War II internment, Japanese-American families were relocated, leaving behind the agricultural endeavors that they had started. Mr. Tsukamoto explained that after the internment, it was difficult, and in most cases impossible, to "bring back" the unattended vineyards. Consequently, vineyards were removed or abandoned within the project area by the late 1940s and farming anything other than the crops described previously essentially ceased. The Tsukamotos recalled how, subsequent to internment, many Japanese-Americans went on to lines of work other than agriculture. Additionally, Mr. Tsukamoto indicated that by the late 1940s Lodi, California and vicinity had become the prominent vineyard area, further contributing to the decline of higher value crops within the project area. It is the higher value crops typically associated with the potential applications of persistent pesticides.

The Tsukamotos indicated that approximately 500 farms, most consisting of five to 10 acres each, existed in the Florin area of Sacramento County. Unlike heavily mechanized, large-scale farming operations in California's central valley, the small plots within the project area were labor-intensively cultivated. Mr. Tsukamoto recalled that strawberries were cultivated in any one field for only an approximate three-year period, strawberries being the "survival crop" until the vineyards were established. As described in the preceding paragraph, vineyards generally did not exist long-term within the project area. Mr. Tsukamoto also recalled the difficulties of farming the "hardpan" soils of the project area. These factors suggest that the historic uses of persistent agricultural chemicals would have been less than amounts typically used, for example, on intensely cultivated, high-value irrigated rowcrop lands, such as the vicinities of Davis and Woodland, California. The potential for persistent pesticide residuals in surficial soils of the project area is discussed

later in this section.

Results of Historic Topographic Map Review:

Historic USGS topographic maps of the project area at the California State Library in Sacramento were also reviewed. Topographic maps covering the years 1909, 1952, 1968, 1975 and 1979 were available for review. The results of the map reviews are summarized below by year. The current (1979) version of the USGS topographic map is included as Plate HM-A.

1909 Map.

As early as 1909 existing roadways that bound the project area had each been constructed by this time. Single structures are mapped near the roads; the mapped symbols are those used to indicate a "dwelling" based on the USGS map legend. Otherwise, no man-made features are mapped within the project area.

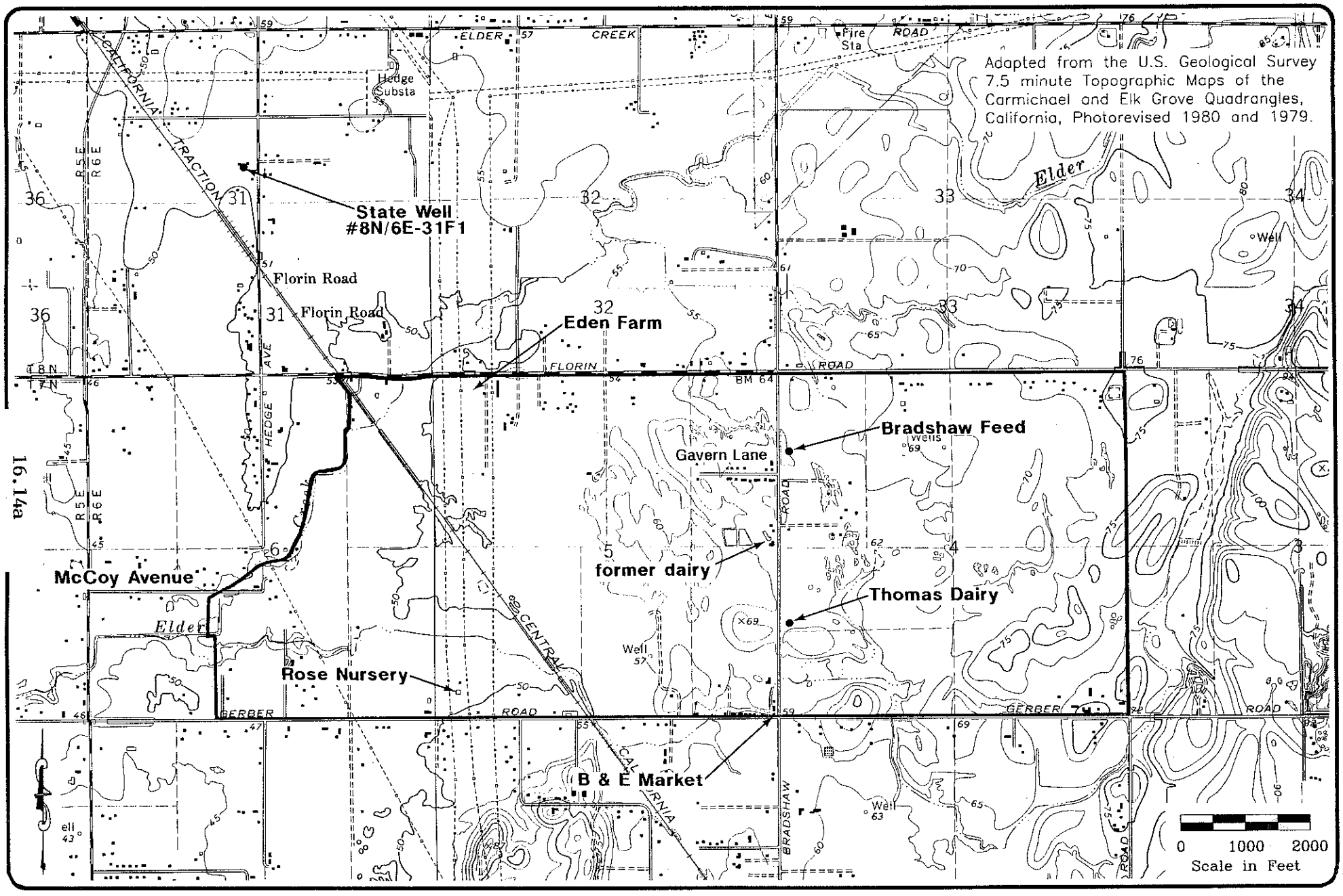
1952 Map.

By 1952 additional structures near all the existing roadways have been mapped; the structure that is presently occupied by B & E Market is also mapped. A USGS map symbol which is used for "barn" or "warehouse" buildings is mapped on the Rose Nursery site. Elder Creek, as well as the other intermittent streams are now mapped near the westerly and southerly project area boundaries. The Central California Traction Railroad is now mapped, as are two of the five existing overhead electrical transmission lines.

A vineyard is mapped within the project area near its northwesterly corner, just easterly of Elder Creek and the railroad tracks. Consistent with previous site history information, the vineyard is only approximately 600 by 900 feet (roughly equivalent to 12 acres). Additional vineyards are mapped northwesterly, westerly, and southerly beyond Florin Road, Elder Creek, and Gerber Road (outside the project area); orchards are mapped west of Hedge Avenue and south of Gerber Road (outside the project area).

1968 Map.

Passallis and Gavern Lanes are now shown on this map. Several dwellings have been mapped on Gavern Lane as well as north and west of the current B & E Market site; a second structure has been mapped on the B & E Market site. A dairy is mapped on Parcel 066-007-017, approximately 1000 feet southerly from Gavern Lane; one dwelling and three



16.14a

Plate HM-A

USGS Topographic Map

NVSSP EIR(93-0238)

barn symbols, as well as two wastewater ponds are shown on the dairy site (this is the former dairy mentioned in previous sections). A few additional barn and residential map symbols have been added to other sites within the project area, while the majority of the dwellings mapped in 1909 are no longer mapped. Water supply wells are mapped within the project area for the first time. A decorative pond south of Elder Creek is now mapped on Parcel 065-008-045. Two small reservoirs are mapped within the project area: one is near its northeast corner and the other is located along the westerly side of the railroad tracks that traverse the project area. Two more overhead electrical transmission lines are mapped across the westerly portion of the project area. The vineyards within the project area, as well as the vineyards and orchards in the surrounding areas are no longer mapped.

1975 Map.

By 1975 additional structures have been added to many of the previously mapped rural residential sites located south of Florin Road. The largest of the barn symbols on Parcel 066-007-017 is no longer mapped. Otherwise, little change is revealed within the project area relative to the 1968 mapping.

1979 Map.

A second barn structure is no longer mapped on Parcel 066-007-017, the former dairy within the project area. A few more small structures have been added to the rural residential sites on the northerly side of the project area.

Map Summary.

In summary, the reviewed topographic maps do not indicate the presence of large manufacturing facilities, industrial ponds, large aboveground storage tanks, airfields, transportation hubs, mining features or mine tailings currently or historically located within the project area. Vast portions of the project area have remained relatively unchanged during the past century based on the available topographic mapping. It does not appear that any locations within the project area received substantial quantities of imported fill materials, based on the topographic map review.

Results of Aerial Photographic Review:

Standard scale, historic aerial photographs were obtained in five- to ten-year increments with coverage of the project area and general vicinity from Geonex Cartwright Aerial Surveys in Sacramento, California for years 1963, 1976, and 1991. Geonex also provided 1" = 500'

photographic enlargements of the project area and immediate vicinity for years 1968 and 1981.

Given the relative stasis within the project area as revealed through review of the historic and current topographic mapping, the results of the photographic review is generally not discussed by year. Rather, the aerial photographs were reviewed for obvious evidence of potential hazardous materials contamination such as ASTs, UST fueling islands, landfilling and mass grading activities, wastewater systems and industrial uses. However, specific aerial photographic review comments for the specific plan proponents' properties were noted previously.

Overall the historic aerial photographs do not reveal the above-named items that can be associated with potential hazardous materials contamination with the exception of the B & E Market, an automobile fueling station. Although no direct evidence of other UST facilities within the project area was observed in the historic aerial photographs, the potential existence of USTs cannot be totally ruled out through aerial photography analysis alone, since in some instances structural developmental items and natural features such as mature vegetation can obscure the ground surface when looking for surface evidence during aerial photography review. The former UST fuel pump island is visible northerly from the existing B & E Market site in some of the historic aerial photographs. The existing B & E Market fuel island and USTs location historically contained a residence; the residence was razed by the time of the 1981 aerial photographs. A discussion of USTs activity on the current and former B & E Market fuel island locations is presented in the Agency Database Review section.

The former dairy site on the west side of Bradshaw Road (Parcel 066-007-017) is present throughout the reviewed aerial photographic coverage but a portion was razed by 1976 and the wastewater ponds were dry. The Thomas Dairy does not appear until 1991, although one residence had been constructed on the site by 1981.

The existing homestead sites and a few of the existing rural residential sites are apparent within the project area as early as 1963. Debris piles are visible on several homestead sites and rural residential sites throughout the reviewed aerial photographic coverage. Other than a decrease or increase in the number of existing structures, the homestead sites have not changed significantly during the past approximate 30 years of available aerial photography reviewed during preparation of this report.

The infrastructure (roadways, drainageways, etc.) mentioned in and around the project area during the topographic map review is visible in the earliest, and throughout, the reviewed aerial photographic coverage. Agriculture consisting of land divided among haycrop, irrigated pasture and natural grass (grazing) uses are predominant throughout the historic photographic coverage. Consistent with other site history information noted previously, no intense agricultural activity (orchards, vineyards or rowcrops) of a commercial scale has occurred within the project area during the approximate 30-year aerial photographic review

time frame. Strawberry fields within the project area have only reappeared during the past approximate five years.

Review of Plan Area Soils and Geology:

Geology.

The subject property is located in the central portion of the Great Valley geomorphic province of California. The Great Valley lies between the mountains and foothills of the Sierra Nevada Range to the east and the California Coast Ranges to the west. The geologic formations of the Great Valley are typified by thick sequences of alluvial (river) sediments deposited during the filling of a large ancient basin.

Soils.

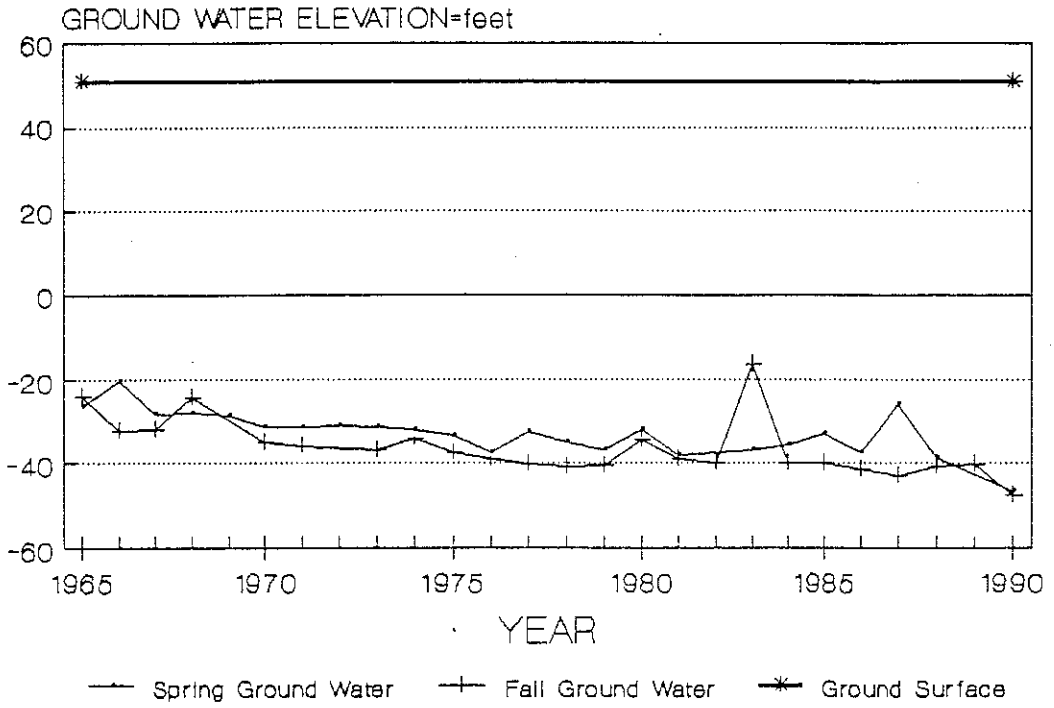
Review of selected information contained within the Preliminary Geotechnical Engineering Report (GER) prepared by WKA indicates that the project area soils have historically and predominantly supported irrigated hay and pasture. The source document for the GER was predominantly the June 1991 (preliminary draft) U.S. Department of Agriculture, Soil Conservation Service (SCS) Soil Survey of the Sacramento Area, California. Other irrigated crops listed as typically cultivated on soils of the project area are corn, rice, alfalfa and ladino clover for seed, as well as the most often dry-farmed crops of wheat, barley and milo.

Ground Water.

The project area is located within the Sacramento River Hydrologic Basin as defined by the California Department of Water Resources (DWR). Ground water elevations for the project area were estimated using depth-to-ground water measurements made in DWR-monitored well number 8N/6E-31F1, located approximately one mile northerly from the Central California Traction Railroad and Florin Road intersection. Plate HM-A shows the approximate location of the DWR-monitored well; the measured ground water elevations are summarized in the hydrograph on Plate HM-B.

Measured ground water elevations published for the well have fluctuated from a maximum of -20 feet MSL during the spring of 1966 to a minimum of -48 feet MSL during the spring of 1990. The ground surface of the project area generally ranges from approximately +45 to +80 feet MSL. Ground water beneath the project area, therefore, has ranged from approximately 65 to 128 feet below the ground surface. The spring 1995 Ground Water Elevations map (the most current data available during the time frame of this assessment) prepared by the Sacramento County Department of Public Works, Water Resources Division indicates that regional ground water flow is southwesterly. The current Sacramento County

STATE WELL #8N/6E-31F1
SURFACE ELEVATION=51 feet



NOTES: Ground water elevation data are obtained from the State of California Department of Water Resources Water Data Information System.

Elevations are measured from mean sea level (MSL).

Plate HM-B
Hydrograph of DWR Well
NVSSP EIR(93-0238)

map also indicates that the ground water beneath the project area is encountered approximately 100 feet below the ground surface, consistent with the historic low recorded at the DWR well as described above.

Results of Government Agency Database Review:

Local, state, and federal databases were reviewed with regard to hazardous materials contamination for sites within the project area. The reviewed databases were prepared and/or maintained by the following agencies:

- United States Environmental Protection Agency (EPA)
- California Environmental Protection Agency (Cal-EPA)
- Cal-EPA Department of Toxic Substances Control (DTSC)
- Cal-EPA Office of Environmental Health Hazard Assessment (OEHHA)
- Cal-EPA Regional Water Quality Control Board (RWQCB)
- Cal-EPA Integrated Waste Management Board (CIWMB)
- California State Water Resources Control Board (SWRCB)
- California Department of Health Services (DHS)
- Cal-DHS Office of Drinking Water (ODW)
- California Division of Oil and Gas (DOG)
- Sacramento County Environmental Management Department (EMD), Hazardous Materials Division.

The results of the regulatory agency database review are detailed on Plate HM-C. The databases reviewed were the most current available. In summary, no potential or confirmed, state or federal "Superfund" sites within the project area were identified during review of the former DHS's Bond Expenditure Plan, the EPA's Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) and National Priorities List (NPL), and the Cal-EPA's list of Active Annual Workplan Sites. No Resource Conservation and Recovery Act (RCRA) Generators or U.S. EPA Emergency Response Notification System (ERNS) database sites occur within the project area.

One site located within 500 feet of the project area is listed as a RCRA Generator. This site, Don Manley & Sons Trucking, is located on the south side of Gerber Road near the Rose Nursery. The generator status is most likely the result of the facility generating waste oil stemming from routine truck maintenance.

Databases indicate no known occurrences of the following within the project area: contaminated municipal ground water supply wells; toxic pits; suspect sites flagged for preliminary assessment; spills, leaks, investigations or cleanup sites; active or inactive landfills, and transfer or material recovery stations. The RWQCB and Sacramento County EMD both list the B & E Market as a site where an unauthorized hazardous materials release

NATIONAL PRIORITIES LIST (EPA)
(Run Date February 16, 1996)

None

CERCLIS LIST (EPA)
(Run Date February 14, 1996)

None

1989 BOND EXPENDITURE PLAN (DHS)
(Run Date January 10, 1990)

None

ACTIVE ANNUAL WORKPLAN SITES, FY 1994-95 (DTSC)
(Run Date January 3, 1995)

None

CALIFORNIA EPA FACILITY INVENTORY DATA BASE
[TSD Facilities]
(Run Date February 23, 1996)

None

CALSITES (DTSC)
(Run Date September 8, 1995)
[Formerly ASPIS]

None

HAZARDOUS WASTE AND SUBSTANCES SITES LIST (OEHHA)
(Run Date December 1994)
[formerly CORTESE]

None

Plate HM-C.1
Agency Database Review Summary
NVSSP EIR(93-0238)

ASSEMBLY BILL 1803 CONTAMINATED WELLS (DHS-ODW)
Small Systems
(Run Date June 1990)

None

Large Systems
(Run Date April 1986)

None

WELL INVESTIGATION PROGRAM LIST OF POLLUTED WELLS (RWQCB)
(Run Date January 1992)

None

CALIFORNIA DIVISION OF OIL AND GAS (DOG)
(Map W6-1 Published August 20, 1994)

HBC-Harlander Un.1

CENTRAL VALLEY TANK TRACKING SYSTEM (RWQCB)
(Run Date January 10, 1996)

B & E Market - 7596 Bradshaw Road

SPILLS, LEAKS, INVESTIGATIONS & CLEANUPS LIST (RWQCB)
(Run Date June 8, 1994)

None

TOXIC PITS CLEANUP ACT (RWQCB)
(Run Date July 1990)

None

Plate HM-C.2
Agency Database Review Summary
NVSSP EIR(93-0238)

LANDFILLS DATABASES (CIWMB)

Closed and Inactive Sites
(Run Date January 16, 1996)

None

Active Disposal Sites
(Run Date January 16, 1996)

None

Transfer/Processing Stations and Material Recovery Facilities
(Run Date January 16, 1996)

None

Transformation Facilities
(Run Date January 16, 1996)

None

Composting Facilities
(Run Date January 16, 1996)

None

RANKED SOLID WASTE DISPOSAL LIST (SWRCB)

Solid Waste Assessment Test (SWAT) Program
(Adopted June 22, 1989)

None

CALIFORNIA EPA FACILITY INVENTORY DATA BASE

[RCRA Generators]
(Run Date February 23, 1996)

Don Manley & Sons Trucking - 9340 Gerber Road

Plate HM-C.3
Agency Database Review Summary
NVSSP EIR(93-0238)

SACRAMENTO COUNTY TOXISITE CLEANUP PROGRAM
SITE SPECIFIC REPORT (EMD)*
(Run Date January 23, 1996)

B & E Market - 7596 Bradshaw Road

SACRAMENTO COUNTY REGULATORY COMPLIANCE LIST**
(Run Date January 11, 1996)

1. B & E Market - 7596 Bradshaw Road
2. California - 9783 Florin Road

NOTES: Search radius for all lists included the subject and adjacent properties.

* Facilities listed include sites where unauthorized hazardous materials release(s) are known to have occurred.

** Facilities listed include sites where underground storage tanks are registered to be present or registered to have been removed.

Plate HM-C.4
Agency Database Review Summary
NVSSP EIR(93-0238)

is known to have occurred. Otherwise, the reviewed databases reveal no known unauthorized hazardous materials release sites within the project area.

B & E Market Site.

The B & E Market is located on the northwest corner of Bradshaw and Gerber Roads within the project area. A 2000-gallon unleaded gasoline UST and a 1000-gallon leaded gasoline UST were removed from the site on May 4, 1993. The two USTs and fuel pump island were located easterly of the B & E Market Building. The April 8, 1994 Preliminary Investigation and Evaluation Report by Roger Foot Associates indicates that five soil samples were collected from beneath the former fuel pump island and USTs locations. Concentrations of up to 7300 mg/kg (parts per million, ppm) total petroleum hydrocarbons as gasoline (TPHG) were detected in subsurface soils. Waste Extraction Test (WET) lead concentrations did not exceed the Soluble Threshold Limit Concentration (STLC).

Six additional soil borings were drilled in order to determine the lateral and vertical extent of subsurface contamination. From these soil borings 17 samples were analyzed for TPHG and benzene, toluene, ethylbenzene, and total xylenes (BTEX). Soil samples collected from two soil borings (B1 and B5) contained detectable contaminant concentrations. Boring B5, west of the UST locations and at a depth of 10 feet below grade, contained 640 mg/kg TPHG. Toluene, ethylbenzene, and total xylenes were found in concentrations of 1.6, 7.0, and 15.0 mg/kg, respectively; benzene was not detected in boring B5. Boring B1, located in the center of former UST locations, contained concentrations of .005 mg/kg toluene and .020 mg/kg total xylenes at a depth of 20 feet below grade; TPHG, benzene, and ethylbenzene were not detected in boring B1.

Lateral extent of contamination is estimated at approximately 30 feet in diameter from the center of the former tank locations, although the westerly limit is inferred and may extend beneath the B & E Market building. Vertical extent is estimated at approximately 25 feet below grade. Roger Foot Associates estimates ground water at a depth of 70 feet below ground surface and indicates the potential for ground water to be impacted by fuel hydrocarbons remaining in the soil beneath B & E Market to be low since the contaminants appear to be limited to less than 25 feet below grade.

A workscope to continue remediation by excavating approximately 500 cubic yards of contaminated soil and to complete the delineation of impacted soil west of the former UST location was submitted to the Sacramento County EMD in January 1995.

Two new tanks were installed on the site in 1993. The first tank is a 2000-gallon regular unleaded UST, and the second tank is an 8000-gallon/4000-gallon split UST that holds regular unleaded and unleaded supreme gasoline. Both tanks are single-walled bare steel construction with electronic (continuous) leak detection systems. B & E Market operates

their USTs under Permit Number J0043886 with an expiration of November 18, 1996.

Other Sites.

The California Horticulture site appears on the Sacramento County Hazardous Materials List and is located on the northeasterly corner of Florin and Bradshaw Roads, north of the boundary of the project area. The facility operates one UST. The tank was registered in November 1987 under Permit Number J0018386. No other information was available regarding this site.

It was determined that the project area includes one abandoned petroleum well during the review of California DOG map W6-1 and DOG files relative to the abandoned well. The well is identified as a "plugged and abandoned - dry hole," mapped approximately 2300 feet west of the easterly project area boundary, and 1100 feet north of Gerber Road. DOG personnel made and approved the environmental inspection for abandonment of the well on August 28, 1980.

PCB Potential.

Numerous pole-mounted electrical transformers exist within the project area. No obvious evidence of transformer leakage installed on accessible sites were observed.

Regarding the potential PCB-content of transformers within the project area, WKA relied on previous contact with SMUD engineering specialist Michael Hardin, who indicated that in 1979 SMUD changed its purchase specifications to preclude buying PCB-contaminated transformers and also removed PCB-containing transformers from their inventory. Consequently, sites developed after 1979 generally received PCB-free transformers as part of the electrical service provided by the District. Some transformers are tagged "Non-PCB" with respect to PCB content.

Sites within the project area developed in the early 1980s and later are unlikely to contain PCB-containing transformers. Many transformers within the project area most likely predate 1979 and are not tagged with respect to PCB content. These transformers are therefore of unknown PCB content. Mr. Hardin explained that actual levels of PCBs in specific equipment can only be confirmed by sampling and analysis of the mineral oil coolant within the actual pieces of equipment under consideration.

Radon Potential.

This discussion of the potential for radon exposure within the project area is based on review of available scientific literature on the topic. Radon isotope-22 is a colorless, odorless,

tasteless radioactive gas that is a natural decay product of uranium. Uranium and radon are present in varying amounts in rocks and soil, and radon is present in background concentrations in the atmosphere. Current evidence indicates that increased lung cancer risk is directly related to radon-decay products.

Radon potential of rocks and soils and indoor radon exposure levels in the United States are currently areas of intense research by governmental regulators as well as the geoscience and medical communities. At this time, the EPA has recommended an "action" level for indoor radon concentrations at or exceeding 4 pico-curies per liter of air (pCi/_). The EPA has extrapolated a 1% to 3% lung cancer mortality rate due to a lifetime of exposure at 4 pCi/_; that is, 1 to 3 persons per 100 exposed to this concentration for life will die of lung cancer induced by radon.

The recently published California Statewide Radon Survey Interim Results, based on the EPA/State Department of Health Services State Radon Survey, predicts that only 3.6% of homes in Sacramento County would exceed the EPA's recommended level of 4 pCi/_. Additionally, California ranks as the third lowest for percentage of homes exceeding 4 pCi/_, of the 33 states participating in the study.

Indoor radon information regarding the project area can only be obtained through building-specific sampling and testing. Based on the low percentage of homes predicted to exceed the EPA's recommended exposure level as described above, the potential for radon concentrations exceeding 4 pCi/_ within the project area is low.

WKA Recommendations:

Table HM-4 is a summary of site address, Sacramento County APN, land use type, comments and site-specific recommendations based on the preliminary findings for each of the properties within the project area.

As noted by WKA, physical access to only the proponents properties had been arranged prior to the site assessment work. Given this situation, the only recommendation for a substantial number of inaccessible non-proponent sites within the project area is to complete site-specific field reconnaissances. To the maximum extent possible inaccessible sites were viewed from public right-of-ways, from accessible adjacent sites, and from a private plane during low altitude fly-overs. Historic aerial photographic enlargements (1" = 500') of the project area were also reviewed to look for obvious potential areas of concern that could otherwise have been more difficult to observe. In spite of these best efforts, some locations within the project area will require individual field reconnaissances given, for example, the presence of heavy vegetation and man-made objects that can hinder aerial views and block lateral views from adjacent or right-of-way locations. No findings were made for the Proponents' Parcels that would lead one to recommend specific additional Phase 1 site

assessment activities for those parcels; some of the general recommendations presented below, however, do apply to the Petitioners' Parcels.

WKA Conclusions/Recommendations.

Agriculture.

The approximate 1580-acre Plan Area has consisted of fallow land, or has supported dry farmed and natural grass grazing and irrigated pasture land uses since the 1940s. These agricultural uses typically require little to no applications of environmentally persistent pesticides. It is therefore anticipated that the potential for residual agricultural chemical concentrations in existing surficial soils of the project area is low.

Although portions of the Plan Area supported rowcrops (strawberries) and vineyards in the distant past (prior to the 1940s), it is not believes that additional assessment is required for those locations with respect to potential persistent pesticide residuals. While the higher value rowcrops and vineyards have a somewhat increased potential for the past application of persistent pesticides, the vast length of time between the former vineyard and rowcrops' cultivation in the opinion of WKA negates the concern for any significant levels of persistent pesticide residuals in existing surficial soils of the Plan Area. In most cases, a recommendation to sample and test surficial soils for persistent pesticide residuals is made for sites that typically have seen rowcrop or orchard cultivation up to recent times. Additionally, continued low intensity agricultural uses of former vineyard or rowcrop cultivated sites can actually help promote breakdown of potential persistent pesticide residuals by enhancing the natural microbial actions in soil.

Previous sampling and testing programs by WKA on other rowcrop, vineyard and orchard sites in Sacramento County targeted for persistent pesticides have not revealed residual concentrations in soil above hazardous waste or health-based thresholds. Some of the WKA's previous projects that support the conclusions above include the following; at these previous study sites, no problematic persistent pesticide residuals were detected: the Ellenwood Joint Venture (New Dawn) residential subdivision (July 1991); an area within the East Elk Grove Specific Plan (February 1995); the New Dawn II proposed residential subdivision (July 1994); the Truxel Property (September 1991) and Gateway 5 West (March 1991) property in Natomas; the Country Glen apartment community in southern Sacramento County (May 1990); the River Plaza property in south Natomas (December 1994); the proposed Laguna Meadows project within the East Franklin Specific Plan project area (July 1991); and, the Fowler Property, under-construction residential subdivision (November 1995) in southern Sacramento County.

The modern strawberry cultivation observed within the North Vineyard Station Specific Plan project area during the course of this work is not anticipated to involve the use of environmentally persistent pesticides. Nearly all of the persistent agricultural chemicals of

the organochlorine pesticide variety have been banned since the time of their prevalence in the 1950s, 1960s and early 1970s. It is also important to recognize that the prevalent use of the organochlorine pesticides occurred subsequent to the time frame that the project area supported the crops which would have typically required pesticide applications.

Ground Water.

No regional impairments to ground water quality beneath the project area was identified, nor did the assessment identify any agency-listed contaminated sites within or adjacent to the Plan Area indicated to have affected ground water quality. First ground water beneath the project area occurs at least 100 feet below the ground surface. No large quantity agricultural wastewater producers, industrial facilities or commercial facilities that discharge wastewater to land are located within the project area. The existing dairy within the project area is a relatively small-scale operation, producing only minimal quantities of dairy wastewater. Based on these findings and the site history information presented above, it is not believed that an assessment of ground water quality beneath the Plan Area is necessary.

Asbestos.

In 1978/79 the federal government banned nearly all uses of friable asbestos in building materials. Therefore, existing structures within the project area built subsequent to 1979 are considerably less likely to contain asbestos in their building materials. However, most of the existing structures within the Plan Area predate 1979 and potentially contain asbestos in their building materials. It is recommend, therefore, that abatement asbestos surveys be completed for each of the structures within the Plan Area which are intended to be razed or otherwise disturbed.

Water Supply Wells.

Numerous water supply wells are located within the Plan Area. No attempt was made by the consultant to compile an inventory of existing wells since many sites were not accessible during their work. It is obvious, however, that some wells within the Plan Area are currently in an improperly abandoned condition. Any water supply wells within the Plan Area which is to be abandoned should be properly destroyed; this procedure requires a well abandonment permit (issued on a per-well basis) from the Sacramento County Environmental Management Department, Environmental Health Division. Large-diameter (old hand-excavated) wells in the Plan Area, if any, in addition to requiring a permit for well abandonment, should be backfilled in accordance with the recommendations of a geotechnical engineer. Existing septic tanks, leach lines and cisterns within the Plan Area should be removed and/or their locations backfilled in accordance with the recommendations of a geotechnical engineer.

Debris.

Several sites within the Plan Area contain either building demolition debris or a substantial quantity of apparently abandoned or discarded items; similar conditions may exist elsewhere in the Plan Area. All debris, trash, rubble, refuse and abandoned, discarded and/or out-of-service items within the Plan Area should be removed from the affected properties and disposed of or recycled off-site as appropriate.

Issues and Impact Analysis.

General Plan Policies:

The proposed Specific Plan text contains no specific hazardous materials policies or guidelines. The of General Plan Hazardous Materials Policies, include the following:

Policy HM-3.7.1 Work with industry, community groups, and government agencies to develop an effective, workable, and fair hazardous materials management system.

Policy HM-3.7.2 Provide information to the general public and interested parties on technical and administrative developments in the field of hazardous materials management.

Policy HM-3.7.4 Expand and strengthen existing County programs where appropriate, to fill in gaps in the current federal, state, and local hazardous materials management efforts.

Policy HM-3.7.4.B Improve cooperation, information gathering, and information availability within existing County programs.

Policy HM-3.7.4.I Support local enforcement of hazardous materials regulations.

Policy HM-3.7.8 Require all County programs and permits to be consistent with the Goals and Policies of this Hazardous Materials Element.

As the Specific Plan is intended to improve the efficiency of planning and environmental review process of future development in the plan area, the Specific Plan should also address the identified hazardous materials issues and concerns noted by WKA. If the Specific Plan is also to provide a "complete framework" for the future development in the plan area, it

should include policies which expand upon the Hazardous Materials Policies contained in the County General Plan. In addition, the plan should include an implementation program that describes the land use regulation mechanisms that will ensure that the identified hazardous materials remediation recommendations or mitigation measures are complied with in a timely fashion.

As noted in the General Plan Hazardous Material Element, planning for the management of hazardous materials is not a process which can be carried on in isolation within public agencies. Most problems concerning hazardous materials do not stem from intentional misuse. Many hazardous materials problems are the result of avoidable accidents, poor information, misunderstanding, or ignorance. To ensure hazardous materials impacts for the Plan Area are minimized and addressed at the earliest stages of proposed development, hazardous materials "institutional" or policy mitigation measures discussed in this section shall be incorporated into the proposed Specific Plan Policies and Development Criteria (Appendix A) and/or the proposed Public Review Draft Specific Plan document.

EMD Review:

The WKA technical study addressing hazardous materials within Plan Area was also reviewed by County Environmental Management Department staff (Keenan) for adequacy and completeness. County EMD staff provided the following comments with regard to the study's conclusions and recommendations.

> I have reviewed a copy of the December 22, 1995, Draft *Preliminary Phase I Environmental Site Assessment* prepared by Wallace-Kuhl & Associates, Inc. ... With the exception of proper water well abandonment, asbestos surveys of existing buildings, and proper removal of site debris, Wallace-Kuhl made no recommendations for additional work on the petitioner's parcels. I concur with these findings and recommendations. Furthermore, in regards to the inaccessible/non-petitioners parcels and based on Wallace-Kuhl's findings, I recommend further environmental investigation only if and when said properties are developed in the future. (Mike Keenan, Hazardous Materials Specialist, EMD Hazardous Materials Division, March 18, 1996 memo to DERA)

To ensure that EMD staff impact concerns with regard to proper water well abandonment, asbestos contamination, debris removal, and additional site reconnaissance/investigations are completed for the non-proponent properties are addressed at the earliest stages of proposed development, hazardous materials "institutional" or policy mitigation measures discussed and summarized at the end of this section shall be incorporated into the proposed Specific Plan Policies and Development Criteria and/or the proposed Public Review Draft Specific Plan document.

Impacts:

Identified hazardous materials contamination and exposure issues for the Plan Area would involve the future demolition, removal or modification of regulated building components, such as not so obvious underground storage tanks, electrical transformers containing PCBs, and asbestos-containing buildings and debris. Each of these impact issues are evaluated below. Where appropriate, generally feasible mitigation measures follow each evaluation.

Required Site Reconnaissance/Analysis for Non-Proponent Properties.

Actual physical access to only the proponents properties had been arranged prior to the site assessment work. Given this situation, all non-proponent properties will be required to comply with the WKA and EMD recommendation/mitigation to complete site-specific field reconnaissances prior to future site development.

All Plan Area sites requiring a site reconnaissance/investigation if and when said properties are developed in the future are listed on Table HM-4. To ensure that a site reconnaissance, or environmental site analysis is completed and addressed at the earliest stages of proposed development, and to mitigate for potentially significant impacts resulting from exposure to hazardous materials that were not observed by aerial reconnaissance given, for example, the presence of heavy vegetation and man-made objects that can hinder aerial view and block lateral view from adjacent or right-of-way viewing locations, the following hazardous materials mitigtation measure is required:

TX-1 Future development on non-proponent properties identified as requiring a "site reconnaissance" on Table HM-4 shall prepare and submit a site-specific field reconnaissance or preliminary site assessment to the satisfaction of the County Environmental Management Department.

If contamination is identified, remediation and disposal procedures shall be undertaken by qualified personnel in accordance with all applicable regulations, and in coordination with all applicable agencies.

If appropriate, the Specific Plan could also note that Table HM-4 states soil sampling and testing for automotive related fluids are probably needed for the following properties:

- 7471 McCoy Ave. APN: 065-008-018
- 92?? Gerber Rd. APN: 065-008-029
- 93?? Florin Rd. APN: 066-007-045
- 9307 Gerber Rd. APN: 066-008-001

TABLE HM-4.1
Phase I Site Analysis Summary: Site Type/Comments

Street Number	Street Name	APN	Site Type	Comments	Recommendations
7255	Hedge Avenue	065-052-020	Rural residential	Residence on westerly portion, easterly portion appears fallow	Site reconnaissance
7251	"	065-052-013	Rural residential	Residence on westerly portion, easterly portion appears fallow	"
7285	"	065-052-008	Rural residential	Residence on westerly portion, easterly portion appears fallow	"
7325	"	065-052-030	Rural residential	Residence on westerly portion, easterly portion appears fallow, Elder Creek lies on northeasterly corner of property	"
7335	"	065-052-031	Rural residential	Residence on westerly portion, easterly portion appears fallow	"
7351	"	065-052-006	Rural residential	Residence on westerly portion, easterly portion appears fallow	"
	"	065-052-023	Hay cropland	Irrigated, Elder Creek bisects central portion of parcel	"
7412	"	065-008-006	Rural residential	Not observed	"
7407	"	065-008-045	Rural residential	Two residences (one mobile home), outbuildings, overhead transmission lines cross westerly portion of parcel, Elder Creek bisects central portion of parcel, decorative pond adjacent to creek, abandoned vehicles on north-central portion, easterly portion appears fallow	"
9091	McCoy Avenue	065-008-005	Rural residential	Residence	"
9101	"	065-008-044	Rural residential	Residence, detached garage, outbuildings, easterly portion appears fallow	"
	"	065-008-032		Appeared to be fallow land	
	"	065-008-059	Rural residential	Residence	Site reconnaissance
	"	065-008-068	Rural residential	Residence, barn, outbuildings, fallow land on north one-half parcel	"
7471	"	065-008-018	Rural residential	Residence, decorative pond, disced fields on one-half of parcel, bulldozers, backhoes, stored and abandoned vehicles, auto parts, tire piles, several ASTs debris burn areas	Site reconnaissance, surficial soils sampling and testing for automotive related fluids probably necessary
9100	"	065-008-027	Rural residential	Residence, outbuildings, abandoned vehicles, domestic well, easterly portion appears fallow	Site reconnaissance
	Passallis Lane	065-008-048	Rural residential	Residence, outbuilding, truck trailers	"
	"	065-008-049	Fallow land		
9171	Gerber Road	065-008-070	Rural residential	Residence, mowed fields	Site reconnaissance
9059	"	065-008-062	Rural residential	Residence, outbuildings, domestic well	"
	"	065-008-063	Fallow land		
9525	Passallis Lane	065-008-040	Rural residential	Residence, barn, outbuildings	Site reconnaissance
9559	"	065-008-043	Rural residential	Residence, barn, outbuildings	"

TABLE HM-4.2
Phase I Site Analysis Summary: Site Type/Comments

Street Number	Street Name	APN	Site Type	Comments	Recommendations
	Gerber Road	065-008-071		Barn, outbuildings, mowed fields (associated with parcel 065-008-072)	Site reconnaissance
	Gerber Road	065-008-057	Rural residential	Two residences (one mobile home), out buildings, domestic well, abandoned vehicles, debris	"
	"	065-008-034	Fallow land		
9149	"	065-008-042	Rural residential	Residence	Site reconnaissance
9151	"	065-008-072	Rural residential	Residence, outbuilding	"
9191	"	065-008-064	Rural residential	Residence, outbuildings, overhead transmission lines, fallow land	"
	Florin Road	065-052-028	Rural residential	Mobile home, outbuildings, horses	"
	"	065-052-012	Fallow land		
9204	"	065-052-001	Rural residential	Two residences, barn, detached garage, abandoned vehicles, concrete piles, debris piles	Site reconnaissance and removal of debris
9230	"	065-052-002*	Rural residential	Residence, barn, outbuildings, domestic and agricultural wells, grazing land, irrigated pasture, horses	
	"	065-052-004*	Rural residential	Residence, outbuildings, stables, grazing land, horses, agricultural well	
	"	065-008-079*	Grazing land	Agricultural well	
9211	Gerber Road	065-008-080	Rural residential	Residence, cattle barn, outbuildings, agricultural well, grazing land	Site reconnaissance
	"	065-008-077	Fallow land		
	"	065-008-076	Fallow land	Abandoned vehicles, campers, and miscellaneous debris	Site reconnaissance and removal of debris
	"	065-008-029	Rural residential	Residence, abandoned vehicles, truck trailers, ASTs	Site reconnaissance, surficial soils sampling and testing for automotive related fluids probably necessary
9360	Florin Road	066-007-043	Eden Farm	Strawberry sales, greenhouse, abandoned masonry house, strawberry fields, fallow land	Site reconnaissance
9384	"	066-007-002	Residence, Poodle Park	Dog breeding and sales, residence, barn, debris piles, fallow land, overhead transmission lines	Site reconnaissance and removal of debris
	"	066-007-044	Fallow land		
	"	066-007-045		Backhoes, bulldozers, construction and tar equipment storage yard, concrete piles, debris piles, agricultural well	Site reconnaissance, removal of debris, surficial soils sampling and testing for automotive related fluids probably necessary
9362	"	066-007-046	Florin Groundcover	Greenhouses, outbuildings, agricultural well	Site reconnaissance
	"	066-007-020	Mowed fields		

TABLE HM-4.3
Phase I Site Analysis Summary: Site Type/Comments

Street Number	Street Name	APN	Site Type	Comments	Recommendations
	Gerber Road	066-008-002	Mowed fields		
	"	066-008-003	Mowed fields		
9307	Gerber Road	066-008-001	Rose Nursery	Residence, greenhouses, outbuildings, truck trailers, ASTs, abandoned vehicles, disposal areas, reservoir, haycrop land, two overhead transmission lines	Site reconnaissance, removal of debris, surficial soils sampling and testing for automotive related fluids probably necessary
9351	"	066-008-016	Rural residential	Residence, detached garage, outbuildings, PG&E transmission lines	Site reconnaissance
9395	"	066-008-017	Rural residential	Not observed	"
9391	"	066-008-015	Rural residential	Residence, detached garage, barn, outbuildings	"
9424	Florin	066-007-003	Rural residential	Residence, barn, agricultural well, horses	"
9456	"	066-007-004*	Rural residential	Residence, outbuildings, abandoned vehicles	
9464	"	066-007-005*	Rural residential	Modular home	
458, 9460	"	066-007-006*	Rural residential	Two residences, several outbuildings, dilapidated structures, debris piles, abandoned vehicles, agricultural well, fallow land	Removal of debris
	"	066-007-019*	Fallow land		
9494	"	066-007-018	Rural residential	Residence, barn, outbuildings, corral, miscellaneous vehicles and outbuildings, fallow land	Site reconnaissance
	"	066-007-008*	Fallow land		
9534	"	066-007-007	Rural residential	Residence, outbuilding, domestic well, abandoned vehicles, debris piles	Site reconnaissance
	"	066-007-009	Fallow land		
9610	"	066-007-033	Rural residential	Residence, outbuildings, fallow land	Site reconnaissance
	Florin Road/Bradshaw Road	066-007-034	Fallow land	disced perimeter	
7320	Bradshaw Road	066-007-025	Residential	Residence, sheds	Site reconnaissance
7324	"	066-007-026	Residential	Residence, sheds	"
	Gavern Lane	066-007-032	Horse yard		
9653	"	066-007-038	Residential	Not observed	Site reconnaissance
9647	"	066-007-040	Residential	Not observed	"
9641	"	066-007-039	Residential	Not observed	"

TABLE HM-4.4
Phase I Site Analysis Summary: Site Type/Comments

Street Number	Street Name	APN	Site Type	Comments	Recommendations
9672	"	066-007-013	Residential	Not observed	Site reconnaissance
9671	"	066-007-041	Residential	Not observed	"
9673	"	066-007-042	Residential	Not observed	"
9670	"	066-007-030	Residential	Not observed	"
9668	Gavern Lane	066-007-021	Residential	Not observed	"
9690	"	066-007-036	Residential	Not observed	"
9694	"	066-007-035	Residential	Not observed	"
7340	Bradshaw Road	066-007-028	Residential	Not observed	"
7350	"	066-007-015	Bradshaw Ranch Golf Course	Nine hole golf course, driving range, domestic well	"
7388	"	066-007-016	Rural residential	Residence, detached garage, domestic well	"
7396	"	066-007-017	Rural residential	Residence, outbuildings	"
	Florin Road/Gerber Road	065-052-003	Railroad	Central California Traction Railroad Company	
	Florin Road/Gerber Road	066-008-010	Railroad	Central California Traction Railroad Company	
	Bradshaw Road	066-008-006*	Fallow land		
7502-7512	"	066-008-007	Frederick's Equestrian Center	Two residences, barns, stables, outbuildings, racetrack, ponds	Site reconnaissance
7522	"	066-009-005	Rural residential	Residence, several outbuildings, horses	"
	"	066-009-004	Narrow strip west of parcel 066-009-005	Not observed	"
	"	066-009-015		Not observed, appears to be associated with 066-009-014	"
	"	066-009-013		Not observed, appears to be associated with 066-009-014	"
7590	"	066-009-014	Residential	Residence	Site reconnaissance
7596	"	066-009-012	B&E Market	Convenience store and gas station, USTs, domestic well Remediation on-going	
9681	Gerber Road	066-009-008	Residential	Two residences, debris	Site reconnaissance and removal of debris

TABLE HM-4.5
Phase I Site Analysis Summary: Site Type/Comments

Street Number	Street Name	APN	Site Type	Comments	Recommendations
9679	"	066-009-009	Residential	Residence, debris	Site reconnaissance and removal of debris
9673, 9677	"	066-009-020	Residential	Two residences	Site reconnaissance
9647	"	066-009-019	Residential	Residence, debris	Site reconnaissance and removal of debris
9635	"	066-009-018	Residential	Residence, outbuildings, fallow land	Site reconnaissance
	"	066-009-011	Residential	Residence, outbuildings, fallow land	"
9601	"	066-009-010	Residential	Residence, detached garage, barn, horses	"
	Gerber Road	066-008-012	Fallow land		
	"	066-008-013*	Rural residential site	Concrete slab and plumbing at former house site, domestic well, feeding yard, debris piles	Removal of debris
	"	066-008-004*	Grazing land		
	"	066-008-009	Rural residential	Residence, barn, corral, abandoned cars, debris, 55-gallon drums identified as resin solution (UN-1866), outbuildings, two domestic wells	Site reconnaissance
	"	066-008-008	Fallow land		
7249, 7285	Bradshaw Road	066-010-061	Don Fisher Training Center/Bradshaw Feed & Pet Supplies	Equestrian training facility including stables, outbuildings, ASTs, domestic well Retail feed store, AST	Site reconnaissance
7362	"	066-010-062	Rural residential/tree and shrub sales	Residence, nursery building, outbuildings, decorative pond, nursery equipment	"
7359	"	066-010-035	Rural residential	residence, outbuildings, domestic well, grazing land	"
7361	"	066-010-034	Rural residential	Two residences (one mobile home), outbuildings, fallow land	"
7363	"	066-010-033	Rural residential	Residence, camper trailer, domestic well, fallow land	"
7367	"	066-010-036	Rural residential	Residence, barn, debris, fallow land	"
	"	066-010-024	Fallow land		
7461	"	066-011-001*	Thomas Dairy	Two residences, cow barn, three covered feeding areas, waste water pond, domestic well, two ASTs	
	"	066-011-006	Fallow Land		
9744	"	066-011-002	Rural Residential	Residence	Site reconnaissance
7990	"	066-011-005	Rural residential	Residence, outbuildings, debris, horses	"

TABLE HM-4.6
Phase I Site Analysis Summary: Site Type/Comments

Street Number	Street Name	APN	Site Type	Comments	Recommendations
	Gerber Road	066-011-007	Fallow land		
	"	066-011-008	Fallow land		
	"	066-011-012*	Fallow land	Recently mowed grasses	
	"	066-011-011*	Fallow land	Recently mowed grasses	
	"	066-011-009	Fallow land		
	"	066-011-010*	Fallow land	Recently mowed grasses	
9743	"	066-011-003	Rural residential	Residence, several abandoned vehicles, debris, ASTs, domestic well	Site reconnaissance, removal of debris, surficial soils sampling and testing for automotive related fluids probably necessary
9789	Gerber Road	066-011-004		Residence, motorhomes, debris, ASTs, domestic well	Site reconnaissance and removal of debris
	Florin Road	066-010-058	Grazing land, pasture		
9720	"	066-010-059	Dias Stables	Residence, barns, stables, pasture	Site reconnaissance
	"	066-010-060	Pasture		
9770	"	066-010-057	Rural residential	Residence, sheds, domestic well, debris piles, grazing land	Site reconnaissance, removal of debris
9826	"	066-010-071	Rural residential	Residence	"
	"	066-010-072*	Rural residential	Two residences, barn, stables, grazing land	
9850	"	066-010-003*	Rural residential	Two residences (one mobile home), outbuildings, agricultural well, grazing land, horses	
9946	"	066-010-004	Rural residential	Residence, detached garage	Site reconnaissance
9924	"	066-010-005*	Rural residential	Residence, outbuildings, disced fields	
9994	"	066-010-006	Rural residential	Two residences, domestic well, recently seeded fields	Site reconnaissance
9998, 10000	"	066-010-047	Rural residential	Two residences, barn, outbuildings, disced fields, horses	"
10050	"	066-010-046	Rural residential	Residence, barn, small orchard, agricultural well	"
10072, 10074	"	066-010-050	Rural residential	Two residences, outbuildings, small orchard, fallow land	"
10076	"	066-010-051	Fallow land	Abandoned house trailer, camper, debris	Site reconnaissance and removal of debris
	Heatherpace Lane	066-011-013	Fallow land		
	"	066-011-020	Fallow land	Pond	

TABLE HM-4.7
Phase I Site Analysis Summary: Site Type/Comments

Street Number	Street Name	APN	Site Type	Comments	Recommendations
7464	"	066-011-014	Rural residential	Residence, sheds, domestic well	Site reconnaissance
7481	"	066-011-019	Rural residential	Residence (mobile home), outbuildings, domestic well, fallow land	"
7542	"	066-011-015	Rural residential	Residence, two trailer homes, detached garage, barn, small orchard	"
7521	"	066-011-018	Rural residential	Residence, mobile home, garage, outbuildings, fallow land	"
7560	"	066-011-016	Rural residential	Residence, domestic well, fallow land/disced land	"
7561	"	066-011-017	Rural residential	Residence, outbuildings, stable, grazing land, fallow land, decorative pond	"
	Gerber Road	066-010-021*	Fallow land, wetlands	Approximately one-half of parcel is disced	
	"	066-010-020*	Fallow land, wetlands	Approximately one-half of parcel is disced	
	Gerber Road	066-010-019*	Fallow land, wetlands	Approximately one-half of parcel is disced	
10019	"	066-011-029	Rural residential	Residence, outbuildings, domestic well, abandoned vehicles, debris, 55-gallon drums, goats	Site reconnaissance and removal of debris
10041	"	066-011-030	Rural residential	Residence, detached garage, outbuildings, barn, fowl yard (chicken and duck)	Site reconnaissance
10051	"	066-011-031	Rural residential	Residence	"
	"	066-011-017	Rural residential	Residence, domestic well	"
10093	"	066-011-016	Rural residential	Two residences, detached garage, fallow land	"

* = Property was accessible during our field work, i.e. controlled by North Vineyard Specific Plan applicant.

- 9743 Gerber Rd. APN: 066-011-003

B & E Market Hazardous Materials Release.

The B&E Market and gas station site is listed as a site where an unauthorized hazardous materials release is known to have occurred. WKA staff did a reconnaissance of the market and noted that remediation was on-going at this site and recommended no further action was required.

Project impacts associated with development in the vicinity of this site are not considered significant in light of the on-going remediation and continued compliance with existing local, state and federal regulatory programs noted previously, designed to protect human health and the environment.

Persistent Agricultural Chemicals.

WKA and EMD staff both concur that the potential for residual agricultural chemical concentrations in existing surficial soils from past agricultural activities is low. Both WKA and EMD staff concur that current strawberry cultivation within the Plan Area is not anticipated to involve the use of environmentally persistent pesticides either, as nearly all of the persistent agricultural chemicals of the organochlorine pesticide variety have been banned since the time of their prevalence in the 1950s, 1960s, and early 1970s.

Project related impacts from persistent agricultural chemicals in the soil are considered ***less than significant.***

PCB.

Numerous pole-mounted electrical transformers exist within the Plan Area. No obvious evidence of transformer leakage was observed on accessible sites. WKA noted that sites within the Plan Area that developed in the early 1980s and later are unlikely to contain PCB-containing transformers. However, many transformers within the Plan Area most likely predate 1979 and are not tagged with respect to PCB content. These transformers are therefore of unknown PCB content.

As non-accessible sites were not evaluated for evidence of PCB transformer leakage, potentially significant impacts for PCB exposure exist in the Plan Area. Potential PCB exposures resulting from future Plan Area development will be mitigated to a less than significant level by implementation of mitigation measure TX-1, requiring a site reconnaisance of these sites. If PCB contamination/leakage is identified during future site reconnaisance, remediation and disposal procedures shall be undertaken by qualified personnel in accordance with all applicable regulations, and in coordination with all

applicable agencies.

Future development's required compliance with mitigation TX-1 and with applicable laws, regulations and standards ***reduce this potential impact to a less than significant level.***

Asbestos.

Because the federal government banned nearly all uses of friable asbestos in building materials in 1978/79, existing structures within the Plan Area built subsequent to 1979 are not likely to contain asbestos in their building materials. However, most of the existing structures within the Plan Area predate 1979 and potentially contain asbestos in their building materials.

As noted by WKA and EMD staff, asbestos surveys of these existing buildings is required. Future Plan Area development and demolition of these pre-1979 structures presents a ***potentially significant*** impact for asbestos exposure. To ensure that an asbestos survey is completed and addressed at the earliest stages of proposed development, the following mitigation measure shall be incorporated into the proposed Specific Plan Policies and Development Criteria and/or the proposed Public Review Draft of the Specific Plan document.

> TX-2 Future development and/or demolition of pre-1979 structures shall prepare and submit an asbestos survey to the satisfaction of the County Environmental Management Department. If asbestos contamination is identified, remediation and disposal procedures shall be undertaken by qualified personnel in accordance with all applicable regulations, and in coordination with all applicable agencies.

Compliance with mitigation TX-2 and with applicable laws, regulations and standards will reduce this potential impact to a less than significant level.

Well Contamination.

Numerous water supply wells are located within the Plan area, some of which are currently in an improperly abandoned condition. However, since there are no large quantity agricultural wastewater producers, industrial facilities, or commercial facilities that discharge wastewater to land within the Plan area and the existing dairy within the Plan area is a relatively small-scale operation, groundwater contamination impacts from agricultural waste water producers are ***not considered significant.***

WKA did observe several stored and abandoned vehicles and other materials and debris located behind the structures of the Rose Nursery. In 1993, underground gasoline tanks were

removed from the B & E Market site, located on the northwest corner of Bradshaw and Gerber roads. Although petroleum residues were detected in subsurface soils, the potential for groundwater contamination is low and considered ***less than significant.***

However both WKA and County EMD staff did note that the improperly abandoned water wells will need to be abandoned properly. WKA also noted that septic systems should be properly abandoned also. To ensure that water well and septic system identification and abandonment is completed at the earliest stages of proposed development the following mitigation measure shall be incorporated into the proposed Specific Plan Policies and Development Criteria and/or the proposed Public Review Draft Specific Plan document.

TX-3 Future development shall identify existing septic tanks and/or water wells to be abandoned and abandon them according to State and County requirements.

Compliance with mitigation measure TX-3 and with applicable laws, regulations and standards ***will reduce this potential impact to a less than significant level.***

Petroleum Pipeline.

As previously noted, a buried liquid petroleum pipeline, owned, operated and maintained by Santa Fe Pacific Pipeline Partners, L.P., lies beneath the western edge of the Bradshaw Road right-of-way. No leaks, ruptures or problems are known to have occurred along the pipeline course adjacent to or in the vicinity of the Plan area. The section of pipeline within the Plan area does not appear on the regulatory agency databases as an identified contamination or spill site.

Project impacts associated with future development in the vicinity of this pipeline is considered ***less than significant.***

Debris

As noted in the technical study, several sites within the Plan Area contain either building demolition debris or a substantial quantity of apparently abandoned or discarded items. Table HM-4 identified the following properties for proper debris removal:

- 9204 Florin Rd. APN: 065-052-001
- 92?? Gerber Rd. APN: 065-008-076
- 93?? Gerber Rd. APN: 066-007-045
- 9307 Gerber Rd. APN: 066-008-001
- 9458 Florin Rd. APN: 066-007-006

- 9681 Gerber Rd. APN: 066-009-008
- 9679 Gerber Rd. APN: 066-009-009
- 9647 Gerber Rd. APN: 066-009-019
- 96?? Gerber Rd APN: 066-008-013
- 9743 Gerber Rd. APN: 066-011-003
- 9789 Gerber Rd. APN: 066-011-004
- 10076 Florin Rd. APN: 066-010-051
- 10019 Gerber Rd. APN: 066-011-029

To ensure that proper debris removal is completed at the earliest stages of proposed development, mitigation measure TX-4 shall be incorporated into the proposed Specific Plan Policies and Development Criteria and/or the proposed Public Review Draft Specific Plan document.

TX-4 Future development on properties identified as requiring proper "debris removal" on Table HM-4 shall remove all debris, trash, rubble, refuse and abandoned, discarded and/or out-of-service items from the affected properties and dispose of or recycle off-site according to State and County requirements.

Compliance with mitigation measure TX-4 and with applicable laws, regulations and standards ***will reduce this potential impact to a less than significant level.***

Conclusion.

Proposed land uses under the Preferred Plan, the -10% Alternative Plan, the -15% Alternative Plan, and/or the Modified Core Alternative Plan will have the same or similar relative land use designations under each of the proposed project alternatives. It is therefore assumed that project related impacts would be relatively the same under each of the project alternatives.

Impacts related to hazardous materials are considered potentially significant but can be reduced to a less than significant level with the incorporation of hazardous materials policy and development standard mitigation measures into the proposed Specific Plan Policies and Development Criteria. In addition, the implementation and enforcement of these mitigation measures by County agencies as outlined in the Specific Plan implementation section will further ensure that these potentially significant impacts are mitigated to a less than significant level.

As noted previously the State of California and the Sacramento County Environmental Health Departments have policies and guidelines concerning the disposal and handling of hazardous wastes, and the installation and/or abandonment of wells and septic systems. Applicable permits may be required during future project development. In addition, all future development resulting from project approval requiring additional entitlements

(tentative maps, use permits, etc.) will result in discretionary review and implementation of CEQA requirements.

Impacts related to hazardous materials are considered ***potentially significant but can be reduced to less than significant levels*** with the incorporation of identified hazardous materials policy and development standard mitigation measures into the proposed Specific Plan policies and/or document.

Mitigation Measures:

To ensure hazardous materials impacts for the Plan Area are minimized and addressed at the earliest stages of proposed development, the following hazardous materials "institutional" or policy mitigation measures shall be incorporated into the proposed Specific Plan Policies and Development Criteria (Appendix A) and/or the proposed Public Review Draft Specific Plan document.

TX-1 Future development on non-proponent properties identified as requiring a "site reconnaissance" on Table HM-1 shall prepare and submit a site-specific field reconnaissance or preliminary site assessment according to State and County requirements. If contamination is identified, remediation and disposal procedures shall be undertaken by qualified personnel in accordance with all applicable regulations, and in coordination with all applicable agencies.

TX-2 Future development and/or demolition of pre-1979 structures shall prepare and submit an asbestos survey according to State and County requirements. If asbestos contamination is identified, remediation and disposal procedures shall be undertaken by qualified personnel in accordance with all applicable regulations, and in coordination with all applicable agencies.

TX-3 Future development shall identify existing septic tanks and/or water wells to be abandoned and abandon them according to State and County requirements.

TX-4 Future development on properties identified as requiring proper "debris removal" on Table HM-4 shall remove all debris, trash, rubble, refuse and abandoned, discarded and/or out-of-service items from the affected properties and dispose of or recycle off-site according to State and County requirements.

SUMMARY OF IMPACTS AND THEIR DISPOSITION

Significant Effects Which Cannot Be Avoided If The Project Is Implemented

1. **Traffic and Circulation.**

Even after implementation of the proposed improvements, the following impacts were found to be significant and unavoidable:

1. The proposed project would result in significant and unavoidable impacts on Bradshaw Road between Florin Road and Elder Creek Road since the project volume of 58,500 VPD would exceed the capacity of 54,000 VPD for a six-lane roadway.

2. Implementation of the project under cumulative conditions will result in significant and unavoidable impacts at the following intersections:

   - South Watt Avenue/Elder Creek Road
   - Bradshaw Road/Elder Creek Road
   - Elk Grove-Florin/Florin Road
   - Bradshaw Road/Florin Road
   - Elk Grove-Florin Road/Gerber Road

2. **Regional and Local Air Quality.**

Sacramento County currently violates state and federal ambient air quality standards, and is presently classified as a non-attainment area by the Environmental Protection Agency (EPA) and the State. In Sacramento, pollutants of greatest concern are ozone precursors [reactive organic gases (ROG) and nitrogen oxides (NOx)], carbon monoxide (CO), particulate matter (PM10), and other visibility reducing matter. In Sacramento, vehicular sources are the primary contributor of carbon monoxide, reactive organic gases and nitrogen oxides.

The project's proposed uses will significantly increase the amount of vehicle emissions for the site over that expected with site development in conformance with existing zoning. The project's vehicle emissions will significantly exceed the Sacramento Metropolitan Air Quality Management District's recommended significance thresholds for ROG NOx and particulates (PM_{10}). Worst case cumulative plus project traffic with associated congestion at build out of the proposed planning area will cause the eight hour

State and Federal carbon monoxide standard to be exceeded at four of the eight intersections analyzed.

3. **Traffic Noise Impacts to <u>Existing</u> Receptors.**

Significant increases in traffic noise will occur along the major thoroughfares and arterial roadways serving the project area under development of the Preferred Plan or any of the Alternative Plans due to the significant increase in traffic volumes. Impacts to existing sensitive noise receptors (homes and other noise-sensitive uses) located along those roads experiencing substantial noise increases are considered significant and unavoidable. Although future roadway widening projects would be subject to CEQA review and mitigation is imposed at the time of construction, impacts to existing residents may not be fully mitigable due to existing site constraints. Noise barriers or other noise attenuating measures may not be feasible in situations such as front-on lots where the driveway access cannot be blocked by a solid wall or where proposed roadway modifications result in minimal setbacks leaving no space for a wall.

4. **Cumulative Loss of Wildlife Habitats.**

Development of the proposed Specific Plan would result in the loss of nearly 1,600 acres of habitats used by a variety of more common (non-listed) wildlife species. Given the magnitude of this change, the loss is considered a cumulatively significant and unavoidable impact of the project. Preservation of wetland/wildlife habitat on site as required by the Wetland Preservation Plan (Environmentally Superior Alternative) would reduce this impact by at least 200 acres, however, the impact would remain cumulatively significant and unavoidable.

5. **Cumulative Ground Water Decline (Interim Impact).**

Implementation of the North Vineyard Station Specific Plan Water Master Plan, as outlined by MacKay and Somps, would result in less than significant water supply impacts. However, the implementation of the NVSSP Water Master Plan is contingent on the implementation of the Water Master Plan for Areas Adjacent to the Zone 40 Water Supply Master Plan Update's Study Area, as well as fulfillment of the City of Sacramento American River Place of Use (POU). Until all agreements are in place to wheel "firm" surface water supplies to the Specific Plan area, the project will contribute to the incremental decline in ground water levels. This incremental decline and the dewatering of private wells is a regional issue, beyond the scope of this current project. However, the project will add to the significant adverse cumulative impacts that regional development has on ground water supplies until a firm surface water source is established.

Significant Effects Which Could Be Avoided With Implementation of Mitigation Measures

1. Land Use.

The Preferred Plan and Alternatives may not meet several General Plan goals, objectives and policies which are intended to maximize efficiency in land use and improve community identity as the projected growth needs of the County are accommodated during the 20-year planning horizon. The densities and land use patterns proposed are similar to the low density development typical other suburban communities. The Preferred Plan and Alternatives are land consumptive and auto-oriented, which tends to exacerbate traffic and air quality impacts; however, these impacts were acknowledged during update of the County General Plan when the subject Specific Plan area was designated for growth. In order to minimize further environmental degradation, it is essential that the projected growth needs of the General Plan are met within approved urban growth areas. If the designated growth areas are not developed to their full potential, direct, adverse physical impacts to the environment could occur through the further loss of agricultural lands and open space/natural habitat areas.

In conclusion, potential land use compatibility impacts associated with holdover agricultural-residential or general agricultural uses located both within and just outside the Urban Development Area can be mitigated to less than significant levels through implementation of General Plan policies, proposed Specific Plan policies and established Zoning Code development standards. Land use impacts resulting from non-compliance with General Plan goals, objectives and policies are considered potentially significant and adverse. Mitigation of potential land use impacts to a less than significant level would required redesign of the Plan area to be consistent with the intent of the General Plan for new growth areas. This issue is discussed further in the Alternatives section of this document.

2 Short Term (Construction-Related) Air Quality Impacts.

Short-term increases in ambient air pollutant concentrations as a result of construction-related emissions are considered potentially significant. Unmitigated dust emissions from earthmoving activities would be likely to create short-term violations of ambient PM_{10} standards and to generate emissions exceeding the 275 pounds per day significance threshold. PM_{10} emissions would be a significant impact of the project. Preparation and implementation of a dust control plan would reduce the identified impact to less than significant.

3. **Traffic Noise Impacts to Future Development.**

Noise impacts to future development along Plan area roadways are potentially significant under all plan scenarios but would be mitigated through implementation of noise attenuation measures at the time of development. Future projects will be subject to CEQA review and compliance with noise standards. Therefore, traffic related noise impacts to future development could be mitigated to less than significant levels.

4. **Hydrology and Flooding.**

Development of the proposed project could result in potentially significant flooding and surface water quality impacts. Flooding impacts can be reduced to a less than significant level by the timely implementation of the proposed North Vineyard Station Specific Plan Drainage Master Plan (DMP) improvements, including construction of downstream Detention Basin E20, and flood control improvements which eliminate or reduce the existing overflow condition from Gerber Creek into the Specific Plan area. Surface water quality impacts can be reduced to a less than significant level by implementing Best Management Practices for the treatment of urban runoff, such as the water quality treatment facilities proposed within the DMP detention basins, and compliance with the County's Land Grading and Erosion Control Ordinance. Construction of the proposed DMP improvements will result in land alteration activities which will significantly impact wetlands and special status species habitat. In addition, although well developed riparian zones are not present on the project site, there are short reaches of riparian scrub species along the creek corridors which would be affected by construction of the DMP improvements. These impacts upon biological resources can be reduced to a less than significant level by: (a) implementing a wetland mitigation plan which achieves no net loss of wetland habitat acreage and values; (b) implementing a special status species mitigation plan developed in cooperation with regulatory resource agencies designed to reduce impacts on any special status species identified through determinate surveys to a less than significant level; and (c) providing in-kind replacement plantings on an inch-for-inch basis for any native trees six-inches dbh (diameter at breast height) or larger which must be removed.

5. **Water Supply (Long Term).**

Conjunctive use water supply for the County of Sacramento and surrounding regions is a very complex and multi-faceted matter that has received intense attention in the last few years from all of the areas water purveyors, environmental interests and governments. The ongoing efforts by the Sacramento County Water Agency for surface water supply is now coming to fruition.

Interim solutions enhancing water supply have been implemented. Temporary surface

water supplies are now being provided to areas which were entirely dependent upon ground water. Agreements are being completed which will provide significant long-term surface water supplies. This Central Valley Project PL 101-514 water supply contracts of up to 22,000 acre-feet of surface water is approaching reality with the draft EIS/EIR just released in July 1997. It is therefore possible that long-term surface water contracts providing an adequate surface water supply will be in place prior to start of development within the Specific Plan Area or soon thereafter. However, initial water supply may be dependent upon groundwater. Wells would be constructed to become an integral part of the ultimate water delivery system to supplement surface water supply.

6. **Biological Resources.**

Wetlands: Development of the project will result in the loss of 51 acres of on-site vernal pools and seasonal wetlands and an additional 7.53 off-site acres (58.83 acres total). The project will also result in the loss of 18.68 acres (15 acres on-site; 3.68 acres off-site) of perennial creeks, freshwater marsh and drainage swales. Without mitigation, these losses will cumulatively contribute to the loss of wetlands habitat which has already occurred in significant proportions throughout the Central Valley. Mitigation measures have been proposed to fully compensate for the lost wetlands through an off-site mitigation plan or a combination of on-site preservation and off-site compensation.

Fairy Shrimp: Although determinate surveys have yet to be conducted throughout the plan area, some vernal pools and seasonal wetlands affected by the project are known to contain vernal pool fairy shrimp (*Branchinecta lynchi*) and/or vernal pool tadpole shrimp (*Lepidurus packardi*). The species are listed as threatened and endangered, respectively, under the Federal Endangered Species Act. A mitigation plan using preservation and/or creation component will be devised to the satisfaction of the U.S. Fish and Wildlife Service.

Swainson's Hawk: Development of the project will result in the loss of as much 1600 acres of suitable foraging habitat for the Swainson's hawk, listed as a threatened species under the State Endangered Species Act. The loss of foraging habitat will contribute to the cumulatively significant losses experienced regionally. Mitigation standards for compensation of lost foraging habitat as determined by the California Department of Fish and Game will be implemented.

Trees: There are maybe existing mature trees throughout the Plan Area which will be affected by urbanization. To date only the participating owners properties have been surveyed. The only native species identified are black walnuts and black willows. Native oaks and other significant trees may occur in the area that have yet to be identified. The Specific Plan text (6.3.4 Natural Resource Preservation Policies) contains several measures to protect and preserve native oaks during development. The General Plan policy (CO- 130) calling for the preservation of non-oak natives is also

included in the Specific Plan policies.

7. **Cultural Resources.**

Adoption of any of the proposed project alternatives could result in possible future disturbance of known and unknown prehistoric and/or historic resources. This impact is considered potentially significant since cultural resources are non-renewable resources that may provide important information about past cultures or have cultural and/or religious importance to living populations. Future construction activities related to the implementation of the Specific Plan could be designed to avoid important cultural resources and therefore minimize such impacts. Measures can also be taken to mitigate impacts which result from the accidental discovery of cultural resources during construction activities. Implementation of recommended mitigation measures would reduce potentially significant impacts to cultural resources to less than significant levels.

8. **Hazardous Materials.**

The technical analysis has identified hazardous materials impacts that are potentially significant: soil contamination from use of agricultural chemicals; PCB contamination; friable asbestos; and well contamination. All impacts are considered potentially significant under any of the proposed project alternatives. Incorporation of recommended mitigation measures into the Specific Plan Policies and Development Criteria and implementation of existing government regulations will reduce potentially significant impacts relative to hazardous materials to less than significant levels.

Impacts Found to be Less Than Significant

1. **Public Services.**

The increased demands created by the project on the following services can be accommodated through compliance with requirements of the service agencies and no significant environmental impacts are expected:

Energy Facilities and Services
Fire Protection
Sheriff's Services
Schools

Library Facilities
Parks and Recreation
Solid Waste Disposal
Transit Service

2. **Sewer Service.**

Development of the proposed NVSSP project and upstream areas will contribute an estimated 16.92 million gallons per day of peak wet weather sewage flows to the regional sewer system. There is an existing 108-inch sewer interceptor located in Elk Grove-Florin Road, approximately ½ mile west of the Specific Plan area, but this facility is nearing capacity. However, the Bradshaw Interceptor is planned for construction in 1997-1998 through the western portion of the Specific Plan area which will provide sufficient capacity to accommodate the proposed project's sewage flows. Specific Plan development will be required to construct the trunk and lateral facilities needed to convey project sewage flows to the Bradshaw Interceptor. Because planned facilities will be sufficient to accommodate sewage flows from the proposed land uses, the project's impacts upon sewer service are considered to be less than significant and no mitigation measures are required.

Growth Inducing Impacts

There may be some growth inducing potential associated with the project in that extension and upgrade of urban infrastructures and services will facilitate development of surrounding properties. However, the Plan Area and most of its surrounding lands were committed to urbanization with the adoption of the 1993 General Plan. As discussed in the Land Use section of this document, the Plan Area interfaces to the northeast and east represent the most potential for land use compatibility concerns and thus, the greatest potential for growth inducement would be in those same directions. Those potentially affected lands are shown on the General Plan Land Use Diagram for non-urban land uses: Recreation (along the creek), Agricultural Urban Reserve, General Agriculture and Agricultural Residential. These lands are outside the Urban Policy Area which is defined in the General Plan as that "area expected to receive urban levels of public infrastructure and services within the 20-year planning period." By virtue of being outside the Urban Policy Area, the General Plan policies would not support near term urbanization of those lands. Furthermore, there are lands contiguous to the Plan Area that are within the designated growth area that would be given much higher priority for accommodating growth needs before any additional lands outside the Urban Policy Area are committed for urbanization. For these reasons, the growth inducing potential of the project on lands not otherwise designated for urbanization during the next 20 years is considered less than significant.

Irreversible Environmental Changes

The project, under all alternatives, will result in the irreversible loss of agricultural-residential designated properties and the loss of a rural lifestyle and bucolic scenery. Once land is converted to higher density urban uses and infrastructure is in place, it is highly unlikely that the land would revert back to rural uses. The commitment to urban uses will be permanent.

Cumulative Impacts

Cumulative impacts of the project were fully analyzed throughout this document along with project-specific, singularly significant impacts.

ORGANIZATIONS AND PERSONS CONSULTED

The organizations and persons consulted during the preparation of this document are included in the Bibliography.

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ENVIRONMENTAL IMPACT REPORT/ACKNOWLEDGMENTS

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FINAL SUPPLEMENTAL ENVIRONMENTAL IMPACT REPORT

NORTH VINEYARD STATION

SPECIFIC PLAN AMENDMENT, FINANCING PLAN, WATER TREATMENT FACILITIES

VINEYARD POINT
REZONE, VESTING TENTATIVE SUBDIVISION MAP, LARGE LOT TENTATIVE SUBDIVISION MAP, AND SPECIAL DEVELOPMENT PERMIT

VINEYARD CREEK
REZONE, VESTING TENTATIVE SUBDIVISION MAP, AND LARGE LOT TENTATIVE SUBDIVISION MAP

Control Numbers: 03-CPB-0082, 02-PWE-0532, 04-PWE-0144, 02-RZB-SDB-SVB-0293, 03-RZB-SVB-0385
State Clearinghouse Number:2004032104

October 2004

COUNTY OF SACRAMENTO
DEPARTMENT OF ENVIRONMENTAL
REVIEW AND ASSESMENT
827 7TH STREET, ROOM 220
SACRAMENTO, CALIFORNIA 95814

Board Of Supervisors

1st District: Roger Dickinson,
2nd District: Illa Collin
3rd District: Muriel Johnson
4th District: Roger Neillo
5th District: Don Nottoli, Chairperson

County Executive

Terry Schutten

Prepared By

Department Of Environmental Review And Assessment

FINAL SUPPLEMENTAL ENVIRONMENTAL IMPACT REPORT

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State Clearinghouse Number:2004032104

This Environmental Impact Report has been prepared pursuant to the California Environmental Quality Act of 1970 (Public Resources Code Division 13). An Environmental Impact Report is an informational document which, when this Department requires its preparation shall be considered by every public agency prior to its approval or disapproval of a project. The purpose of an Environmental Impact Report is to provide public agencies with detailed information about the effect that a proposed project is likely to have on the environment; to list ways in which any adverse effects of such a project might be minimized; and to suggest alternatives to such a project.

Prepared by

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October 1, 2004

TO: ALL INTERESTED PARTIES

SUBJECT: FINAL SUPPLEMENTAL ENVIRONMENTAL IMPACT REPORT FOR NORTH VINEYARD STATION SPECIFIC PLAN AMENDMENT, FINANCING PLAN, WATER TREATMENT FACILITIES, AND ASSOCIATED VINEYARD POINT REZONE, VESTING TENTATIVE SUBDIVISION MAP, LARGE LOT TENTATIVE SUBDIVISION MAP, AND SPECIAL DEVELOPMENT PERMIT; AND VINEYARD CREEK REZONE, VESTING TENTATIVE SUBDIVISION MAP, AND LARGE LOT TENTATIVE SUBDIVISION MAP
(Control Numbers: 03-CPB-0082, 02-PWE-0532, 04-PWE-0144, 02-RZB-SDB-SVB-0293, 03-RZB-SVB-0385)

The subject Final Supplemental Environmental Impact Report (DSEIR) is attached for your review and comment. The Final EIR and proposed project will be heard before the Sacramento County Board of Supervisors on October 13, 2004 at 6:00 P.M. in the County Administration Building, 700 “H” Street, Sacramento, California.

Please contact Tim Hawkins of this office at 874-7914 if you have questions concerning this Final Environmental Impact Report.

Sincerely,

Joyce Horizumi
Environmental Coordinator

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1 PREFACE

This Final EIR is a Supplement to the Final Environmental Impact Report (EIR) for the North Vineyard Station Specific Plan (County Control Number: 93-SFB-0238). The Sacramento County Board of Supervisors certified the prior Final EIR on August 12, 1998 and approved the General Plan Amendment, and subsequently approved the North Vineyard Station Specific Plan (NVSSP) on November 4,1998. This Final EIR includes all comments received on the Draft EIR and responses to those comments. Comments and Responses are in Chapter 18. Changes to the EIR are shown in Strikeout and *Italics.* Changes are editorial in nature or are provided to update information received since the release of the Draft EIR.

The original EIR was prepared as a Master EIR under the provision of CEQA (Section 15175). The information contained in this Supplemental EIR in conjunction with the prior Final EIR for the North Vineyard Station Specific Plan will be used as the environmental documentation for the current project application.

The Draft EIR was completed and distributed on July 7, 2004. The Draft was mailed to over 90 agencies and residents.

A public hearing was held before the Policy Planning Commission on August 24, 2004. The Commission voted to close the public comment period and instructed DERA to prepare a Final EIR for presentation to the Board of Supervisors. The Commission recommended approval of the Amendments to the Specific Plan, subject to findings recommended by staff; recommended approval of the Zoning Code Amendment, subject to findings as recommended by staff; and recommended approval of the Infrastructure Finance Plan, subject to findings as recommended by staff. For the two maps (Vineyard Creek and Vineyard Point) the Commission recommended approval of the Rezones, subject to findings and conditions recommended by staff; and amended; recommended approval of the Vesting Tentative Subdivision Maps, subject to findings and conditions as recommended by staff; recommended approval of the Tentative Subdivision Maps, subject to findings and conditions recommended by staff, and amended; and recommended approval of the Special Development Permits, subject to findings and conditions recommended by staff.

The Board of Supervisors will use the EIR in making a decision as to whether to approve or deny the project.

2 EXECUTIVE SUMMARY AND MITIGATION MEASURES

The subject of this Supplement to a Final Environmental Impact Report (EIR) is a project known as North Vineyard Station Specific Plan Amendment, Financing Plan, Water Treatment Facilities, and associated Vineyard Point Rezone, Vesting Tentative Subdivision Map, Large Lot Tentative Subdivision Map, and Special Development Permit; and Vineyard Creek Rezone, Vesting Tentative Subdivision Map, and Large Lot Tentative Subdivision Map. The Sacramento County Board of Supervisors certified the original Final EIR on August 12, 1998 and approved the General Plan Amendment, and subsequently approved the North Vineyard Station Specific Plan (NVSSP) on November 4,1998.

The NVSSP planning area is located in the south-central unincorporated area of Sacramento County, at the western edge of the Vineyard community. The City of Sacramento's Central Business District is located approximately eleven miles to the northwest. The Plan Area lies entirely within Sections 4 and 5 of Township 7 North, Range 6 East and within the USGS Elk Grove quadrangle map.

The Plan Area encompasses 1,590± acres of the Vineyard Community Planning Area. The Plan Area is bounded by Florin Road to the north, Gerber Road to the South, the northerly extension of the Vineyard Road on the east, and generally by Elder Creek's north and south forks. Bradshaw Road transects the Plan Area in a north/south alignment. The right-of-way of the Central California Traction Railroad transects the western portion of the planning area.

The following environmental impact and mitigation summary table (*Table 2-1 Executive Summary of Impacts and Mitigation on page 2-2*) briefly describes the project impacts and the mitigation measures recommended to eliminate or reduce the impacts. The residual impact after mitigation is also identified. Immediately following the summary table is a list of recommendations/requirements of various agencies pertaining to the project *(see Requests and Requirements of Various Agencies on page 2-26)*, and a description of mandated mitigation monitoring requirements *(see Mitigation Monitoring and Reporting Program on page 2-25)*. Detailed discussions of each of the identified impacts and mitigation measures, including pertinent support data, can be found in the specific topic sections in the remainder of this report.

This report has identified project-related impacts associated with Air Quality as significant and unavoidable. Traffic and Circulation, Noise, Biological Resources, and Cultural Resources were found to be potentially significant, but could be reduced to a less than significant level through inclusion of recommended mitigation measures.

Impacts associated with Land Use, Public Services, Public Facilities Financing, Water Supply, Drainage and Hydrology, and Sewer Service are considered less than significant.

Table 2-1
Executive Summary of Impacts and Mitigation

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
LAND USE			
The proposed developments are generally consistent with the General Plan, North Vineyard Station Specific Plan, and the Sacramento County Zoning Code. The proposed amendments to the Specific Plan are in response to a need throughout the unincorporated County for affordable housing. The number of potential additional units that may be developed in the Plan area as a result of these changes represents only a small overall increase in the total number of units within the NVSSP.	LS	None	LS
PUBLIC FACILITIES AND SERVICES			
Schools			
Although the project would result in increases to student population, established case law indicates that school overcrowding, standing alone, is not a change in the physical conditions, and cannot be treated as an impact on the environment[2].	LS	None	LS
Crime Prevention			
Although law enforcement service is available to serve the Plan area, staffing will not meet service standard levels. To assist in reducing crime levels and the strain on law enforcement resources, the Plan area should be designed with safety as a prime consideration. Coordination with the	LS	None	LS

[1] PS = Potentially Significant S = Significant SU = Significant and Unavoidable LS = Less Than Significant

[2] Goleta Union School District v. The Regents of the University of California (36 Cal-App. 4th 1121, 1995)

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure		Level of Significance After Mitigation
Sheriff's Department, planners and developers for future development with the Plan area will lessen impacts to police protection services to less-than-significant.				
Parks and Recreation				
Future development may have the potential to impact existing and planned park site facilities in the area, as well as creating the need for additional facilities, due to increased resident population. However, until specific development proposals are made, it is difficult to accurately assess impacts to specific sites and/or facilities. However, no environmentally significant impacts to recreational opportunities for existing and future residents are expected.	LS	None		LS
Public Transit				
Implementation of the proposed project will not disrupt or interfere with expected transit operations in the area and no cumulative impacts were identified. The plan provides for the implementation of future facilities by RT such as bus operations, light rail, bus turnouts, and transit centers. Impacts due to the proposed project are considered less than significant.	LS	None		LS
TRAFFIC AND CIRCULATION				
Phase 1A				
Based on the roadway and intersection analysis, the addition of Phase 1A trips will cause or contribute to deficiencies at the following study locations under Year 2002 conditions: *STUDY ROADWAYS* • S. Watt Avenue – (North of SR 16); • S. Watt Avenue – (SR 16 to Elder Creek Road); • Elk Grove-Florin Road – (Florin Road to Gerber Road);	S	TC-1. TC-2. TC-3.	S. Watt Avenue (North of SR 16) – Widening this segment from two to four lanes will improve operations to LOS D. S. Watt Avenue (SR 16 to Elder Creek Road) – Widening this segment from two to four lanes will improve operations to LOS A. Elk Grove-Florin Road (Florin Road to Gerber Road) – Widening this segment from two to four lanes will improve operations to LOS B.	LS

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
• Gerber Road – (Elk Grove-Florin Road to Bradshaw Road); *STUDY INTERSECTIONS* • SR 16/S. Watt Avenue; • SR 16/Bradshaw Road; and • Elder Creek Road/S. Watt Avenue.		*TC-4.* Gerber Road (Elk Grove-Florin Road to Bradshaw Road) – Improving the roadway cross-section to include minimum 12-foot travel lanes and 6-foot shoulders will improve operations to LOS C. TC-5. SR 16/S. Watt Avenue – Widening the northbound and southbound approaches to include an additional through lane will improve operations to LOS D during the a.m. and p.m. peak hours. This improvement is consistent with the recommended widening of S. Watt Avenue to four lanes between Elder Creek Road and SR 16. TC-6. SR 16/Bradshaw Road – Widening the eastbound approach to include dual left-turn lanes will improve operations to LOS E during the a.m. peak hour. Evaluation of other Public Facility Financing Plans revealed that the Sunridge Public Facility Financing Plan includes improvements at the State Route 16 and Bradshaw Road intersection. The proposed improvements are expansion of the intersection to accommodate two left turn lanes, two through lanes and one right turn lane on all approaches. It is likely that right-of-way will need to be acquired to provide the proposed improvements. The improvement is included in Phase 1 on the Sunridge Public Facility Financing Plan, which would mean that the improvement would be constructed in the next 5 years. With those improvements, the intersection level of service would improve to LOS D in the a.m. peak hour and LOS C in the p.m. peak hour, with build out of Phase 1A of the North Vineyard Station Specific Plan. TC-7. Elder Creek Road/S. Watt Avenue – Installing a traffic signal and widening each approach to include an exclusive left-turn lane and a shared through/right-turn lane will improve operations to LOS D during the p.m.	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure		Level of Significance After Mitigation
			peak hour.	
Phase 1B				
Based on the roadway and intersection analysis, the addition of Phase 1B trips will cause or contribute to deficiencies at the following study locations under Year 2005 conditions. *STUDY ROADWAYS* • None. *STUDY INTERSECTIONS* • SR 16/S. Watt Avenue; • Florin Road/Excelsior Road; and • Gerber Road/Excelsior Road.	S	TC-8.	SR 16/S. Watt Avenue – Widening the eastbound and westbound approaches to include an exclusive left-turn lane, a through lane, and a shared through/right-turn lane will improve operations to LOS E and D during the a.m. and p.m. peak hours, respectively. Subsequent to the publishing of the traffic analysis, the County of Sacramento moved forward a project to widen South Watt Avenue from State Route 16 to Kiefer Boulevard to five lanes. The project includes the State Route 16 and South Watt Avenue intersection. The intersection improvement includes an additional left turn lane and through lane on the southbound approach and one new left turn lane and two new through lanes on the northbound approach. The improvement is planned to be completed by 2006. With those improvements and Mitigation Measure TC-8, an additional through lane on the eastbound and westbound approaches, the intersection level of service3 would improve to LOS C in both the a.m. and p.m. peak hours, with build out of Phase 1A and 1B of the North Vineyard Station Specific Plan.	LS
		TC-9.	Florin Road/Excelsior Road – Installing a traffic signal and widening each approach to include an exclusive left-turn lane and a shared through/right-turn lane will improve operations to LOS C and B during the a.m. and p.m. peak hours, respectively.	
		TC-10.	Gerber Road/Excelsior Road – Installing a traffic signal and widening each approach to include an exclusive left-turn lane and a shared through/right-turn lane will improve operations to LOS B and A during the a.m. and p.m. peak hours, respectively.	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
Year 2010 Conditions			
The daily volumes were compared to the roadway capacity thresholds. The addition of project trips will result in a deficiency at the following study roadway segments. • S. Watt Avenue (North of SR 16); and • Elk Grove-Florin Road (Gerber Road to Calvine Road).	S	TC-11. S. Watt Avenue (North of SR 16) – Widening this segment from four to six lanes will improve operations to LOS D. TC-12. Elk Grove-Florin Road (Gerber Road to Calvine Road) – Widening this segment from four to six lanes will improve operations to LOS B.	LS
Year 2015 Conditions			
Based on the roadway and intersection analysis, buildout of the NVSSP will cause or contribute to deficiencies at the following study locations under Year 2015 conditions. *STUDY ROADWAYS* • Florin Road (West of S. Watt Avenue); • Florin Road (S. Watt Avenue to Bradshaw Road); • S. Watt Avenue (North of SR 16); • S. Watt Avenue (SR 16 to Elder Creek Road); • Elk Grove-Florin Road (Gerber Road to Calvine Road); and • Bradshaw Road (Elder Creek Road to Florin Road). *STUDY INTERSECTIONS* • SR 16/S. Watt Avenue; • SR 16/Bradshaw Road; • Elder Creek Road/Bradshaw Road; • Florin Road/Elk Grove-Florin Road; and • Florin Road/Bradshaw Road.	S	TC-13. Florin Road (West of S. Watt Avenue) – Widening this segment from two to four lanes will improve operations to LOS A. TC-14. Florin Road (S. Watt Avenue to Bradshaw) – Widening this segment from two to four lanes will improve operations to LOS A. TC-15. S. Watt Avenue (North of SR 16) – Widening this segment from four to six lanes will improve operations to LOS D. TC-16. S. Watt Avenue (SR 16 to Elder Creek Road) – Widening this segment from four to six lanes will improve operations to LOS C. TC-17. Elk Grove-Florin Road (Gerber Road to Calvine Road) – Widening this segment from four to six lanes will improve operations to LOS C. TC-18. Bradshaw Road (Elder Creek Road to Florin Road) – Widening this segment from four to six lanes will improve operations to LOS B. TC-19. SR 16/S. Watt Avenue – Widening the southbound approach to include dual left-turn lanes will result in less than a 0.05 increase in the V/C ratio during the p.m. peak	LS

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		hour.	
		TC-20. SR 16/Bradshaw Road – Widening the northbound and southbound approaches to include two exclusive left turn lanes, two through lanes and a shared through/right-turn lane will result in less than a 0.05 increase in the V/C ratio during the a.m. and p.m. peak hours.	
		TC-21. Elder Creek Road/Bradshaw Road – Widening the northbound and southbound approaches to include a third through lane will improve operations to LOS D during the a.m. peak hour and LOS C during the p.m. peak hour. This improvement is consistent with the recommended widening of Bradshaw Road to six lanes between Elder Creek Road and Florin Road.	
		TC-22. Florin Road/Elk Grove-Florin Road – Widening the northbound and southbound approaches to include a third through lane will improve operations to LOS E during the p.m. peak hour.	
		TC-23. Florin Road/Bradshaw Road – Widening the northbound and southbound approaches to include a third through lane and widening the eastbound approach to include a second exclusive left-turn lane will improve operations to LOS E during the a.m. peak hour. This improvement is consistent with the recommended widening of Florin Road to four lanes between Watt Avenue and Bradshaw Road and with the recommended widening of Bradshaw Road to six lanes between Elder Creek Road and Florin Road.	
AIR QUALITY			
Specific Plan Buildout			
The previous EIR found that the Specific Plan long-term			

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
emissions (ROG, NOX, PM10) from vehicle traffic and stationary sources would result in significant unavoidable impacts to regional air quality.			
Vineyard Creek and Vineyard Point Subdivisions The Sacramento Metropolitan Air Quality District (SMAQMD) commented that, due to their size, the Vineyard Creek and Vineyard Point projects exceed the District's Thresholds of significance. Therefore, construction related air quality impacts are considered significant. Short-term construction activity involving the disturbance of 10 to 25 acres per day can be accomplished without violating PM_{10} emissions standards though strict adherence to recommended mitigation measures. However, it is unrealistic to assume strict application of dust mitigation measures for the widespread development that is slated to occur. Therefore dust generation during construction activities is expected to exceed the PM_{10} threshold and constitutes a ***significant impact***.	S	AQ-1. The project shall provide a plan for approval by the County of Sacramento and SMAQMD demonstrating that the heavy-duty (>50 horsepower) off-road vehicles to be used in the construction project, including owned, leased and subcontractor vehicles, will achieve a project wide fleet-average 20 percent NOx reduction and 45 percent particulate reduction compared to the most recent CARB fleet average; and AQ-2. The project representative shall submit to the County of Sacramento and SMAQMD a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 horsepower, that will be used an aggregate of 40 or more hours during any portion of the construction project. The inventory shall include the horsepower rating, engine production year, and hours of use or fuel throughput for each piece of equipment. The inventory shall be updated and submitted monthly throughout the duration of the project, except that an inventory shall not be required for any 30-day period in which no construction activity occurs. At least 48 hours prior to the use of subject heavy-duty off-road equipment, the project representative shall provide SMAQMD with the anticipated construction timeline including start date, and name and phone number of the project manager and on-site foreman. AQ-3. The project shall ensure that emissions from all off-road diesel powered equipment used on the project site do not exceed 40 percent opacity for more than three minutes in any one hour. Any equipment found to exceed 40 percent	SU

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		opacity shall be repaired immediately, and the County of Sacramento and SMAQMD shall be notified within 48 hours of identification of non-compliant equipment. A visual survey of all in-operation equipment shall be made at least weekly, and a monthly summary of the visual survey results shall be submitted throughout the duration of the project, except that the monthly summary shall not be required for any 30-day period in which no construction activity occurs. The monthly summary shall include the quantity and type of vehicles surveyed as well as the dates of each survey. The SMAQMD and/or other officials may conduct periodic site inspections to determine compliance. Nothing in this section shall supercede other SMAQMD or state rules or regulations. AQ-4. The following construction-related measures apply to construction activities within the Specific Plan area: a. Water exposed, graded surfaces at least two times per day and if possible, keep soil moist at all times. b. Properly maintain diesel and/or gas fueled construction equipment. c. Water haul roads at least two times per day d. Use low VOC architectural coatings AQ-5. Comply with the adopted AQ-15 Plan, which is included in Section .7.6 (Travel Demand Reduction Measures) of the NVSSP text. ~~AQ-6.Individual development projects within the Specific Plan Area shall achieve an additional 2 percent reduction in combined operational and area source air quality emissions to ensure overall AQ-15 compliance.~~	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		~~AQ-7.~~AQ-6. No wood burning appliances shall be permitted in new construction within the Specific Plan area. Fireplaces and similar "wood stoves" shall be fueled by natural gas or propane.	
NOISE			
Vineyard Creek Subdivision Residences proposed nearest to Florin Road and Waterman Road would be exposed to future traffic noise levels that exceed the 60 dB L_{dn} Sacramento County Noise Element Standard. This impact is considered significant.	S	NO-1. A 7-foot tall property line barrier along Florin Road and a 6-foot tall property line barrier along Waterman Road shall be constructed. Sufficient barrier wrap should be provided as shown in Plate NS-1 of the EIR.	LS
Vineyard Point Subdivision Residences proposed nearest to Bradshaw Road and Gerber Road would be exposed to future traffic noise levels that exceed the 60 dB L_{dn} Sacramento County Noise Element Standard. This impact is considered significant.	S	NO-2. A 9-foot tall property line barrier along Bradshaw Road and an 8-foot tall property line barrier along Gerber Road, shall be constructed. Sufficient barrier wrap should be provided as shown in Plate NS-2 of the EIR. NO-3. STC-30 windows shall be installed in the second floor of the first row of houses that are adjacent to Bradshaw Road. In these houses, only second floor windows with a direct view of Bradshaw Road need to be upgraded.	LS
Water Treatment Facility and Well Sites Based upon the noise level measurement data, the predicted noise level at the backyard of the nearest residence to the water treatment facility is 53 dB L_{50}. This level exceeds the Sacramento County hourly noise criteria of 50 dB L_{50} for daytime noise and the 45 dB L_{50} criteria for nighttime noise. Since the booster pumps are expected to operate during the nighttime hours, it is recommended that noise control measures, which will reduce overall pump noise levels by a minimum of 8 dBA, be included in the	S	NO-4. The water treatment facility should have 7-foot tall property line barriers at the adjacent residential property lines. In addition to the solid barriers, the pumps should be housed in concrete buildings with acoustical louvers/silencers and weather stripping around the doors. The louvers/silencers must provide a minimum insertion loss of 10-15 dB at the 125 Hz through 1000 Hz frequency ranges.	LS

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
project design. The predicted un-muffled exhaust noise level with the emergency generator in operation is predicted to be 85 dBA at the backyard of the nearest residence. Assuming that the generator operates continually for one half of an hour while being exercised, the hourly L_{50} (sound level not to be exceeded 30 minutes of the hour) is 82 dBA. This level would exceed the daytime and nighttime noise level criteria of 50 dBA L_{50} and 45 dBA L_{50}, respectively.		NO-5. A muffler such as a Vibron brand residential muffler should be fitted on the exhaust stack at the water treatment facility in order to provide adequate noise reduction to meet the Sacramento County noise standards. NO-6. ~~Pump~~ Remote well (Pump) sites should have 7-foot tall property line barriers at the adjacent residential property lines. In addition to the solid barriers, the pumps should be housed in concrete buildings with acoustical louvers/silencers and weather stripping around the doors. The louvers/silencers must provide a minimum insertion loss of 10-15 dB at the 125 Hz through 1000 Hz frequency ranges.	
BIOLOGICAL RESOURCES			
Vineyard Point Subdivision The proposed project will impact 9.02 acres of waters of the United States. The proposed mitigation will ensure that this impact is less-than-significant.	S	BR-1. To compensate for the loss of wetlands and waters of the U.S., one of the following measures shall be implemented: 1. Preserve or create wetlands sufficient to result in no net loss of wetland acreage, and protect their required watersheds as is necessary for the continued function of wetlands on the project site. The appropriate hearing body shall determine that project design, configuration, and wetland management plan, provides reasonable assurances that the wetlands will be protected and their long-term ecological health maintained. 2. Where a Section 404 Permit has been issued by the Corps of Engineers, or an application has been made to obtain a Section 404 Permit, the Mitigation and Management Plan required by that permit or proposed to satisfy the requirements of the Corps for granting a permit may be submitted for purposes of satisfying paragraph 1, provided a no net loss of wetlands is achieved. ~~and, provided, further, that such mitigation~~	LS

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		~~and management plan shall be subject to the independent, discretionary approval of the Board of Supervisors.~~ 3. Pay to the County of Sacramento an amount based on a rate of $35,000 per acre for the unmitigated/uncompensated wetlands, which shall constitute mitigation for purposes of implementing adopted no net loss policies and CEQA required mitigation. The payment shall be collected by the Department of Planning and Community Development at the time of Improvement Plan or Building Permit approval, whichever occurs earlier, and deposited into the Wetlands Restoration Trust Fund.	
Construction of the proposed project will remove 8.41 acres of vernal pools, habitat for the vernal pool fairy shrimp, vernal pool tadpole shrimp, and spadefoot toad. Removal of this habitat represents a significant impact.	S	BR-2. The applicant shall compensate for impacts to vernal pool species through consultation with the U.S. Fish and Wildlife Service as outlined in Section 7 of the Endangered Species Act. The applicant shall implement all measures included in the Biological Opinion issued as a result of this consultation.	LS
Project construction has the potential to disturb nesting activities of listed birds of prey. In addition, the proposed project will remove ~~179~~ 181.8 acres of Swainson's Hawk foraging habitat upon completion. Impacts to Swainson's Hawk and other raptor are considered significant.	PS	BR-3. If construction is proposed during the raptor breeding season (February – August), a focused survey for migratory bird nests shall be conducted within 30 days prior to the beginning of construction activities by a qualified biologist in order to identify active nests on the site. If active nests are found, no construction activities shall take place within 500 feet of the nest until the young have fledged. Trees containing nests that must be removed as a result of project implementation shall be removed during the non-breeding season (September – January). If no active nests are found during the focused survey, no further mitigation will be required. BR-4. To mitigate for the loss of ~~179~~ 181.8 acres of Swainson's hawk foraging habitat, prior to the approval of Improvement	LS

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
	S	Plans or building permits, or recordation of Final Subdivision Map, whichever occurs first, the applicant shall perform one of the following: ~~BR-5.~~1. The project proponent shall preserve ~~89.5~~90.9 acres (0.50 acre for each acre lost) of similar habitat within a 10-mile radius of the project site. This land shall be protected through fee title or conservation easement (acceptable to the California Department of Fish and Game). ~~1.~~2. The project proponent shall, to the satisfaction of the California Department of Fish and Game, prepare and implement a Swainson's hawk mitigation plan that will include preservation of Swainson's hawk foraging habitat. ~~2.~~3. The project proponent shall submit payment of a Swainson's hawk impact mitigation fee per acre impacted to the Department of Planning and Community Development in the amount as set forth in Chapter 16.130 of the Sacramento County Code as such may be amended from time to time and to the extent that said Chapter remains in effect. ~~3.~~4. Should the County Board of Supervisors adopt a Swainson's hawk mitigation policy/program (which may include a mitigation fee) prior to the implementation of one of the measures above, the project proponent may be subject to that program instead.	LS

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
The portion of Gerber Creek located within the project area represents potential habitat for the giant garter snake and the northwestern pond turtle. Construction of creek improvements and construction near ~~the~~ Gerber Creek could impact both GGS and northwestern pond turtle. Impacts to GGS and northwestern pond turtle are potentially significant.	PS	~~BR-6.~~5. The project site shall be surveyed for giant garter snakes and the northwestern pond turtle by a qualified biologist within 24 hours prior to the start of construction activities (including clearing and grubbing) located within 200 feet of ~~Elder~~ Gerber Creek. Survey of the area shall be repeated if a lapse in construction activity of two weeks or greater occurs. If a giant garter snake and/or northwestern pond turtle is encountered during construction, activities shall cease until appropriate corrective measures have been completed or it has been determined that the snake and/or turtle will not be harmed. Giant garter snakes and northwestern pond turtles encountered during construction should be allowed to move away on their own. Capture and relocation of trapped or injured individuals shall only be attempted by personnel or individuals with current USFWS recovery permits. Any incidental take shall be reported to the USFWS at (916) 979-2725 and Department of Environmental Review and Assessment at (916) 874-7914 within one working day. Any giant garter snake and/or northwestern pond turtle sightings shall be reported within 24 hours to the Department of Environmental Review and Assessment at 874-7914.	LS
Vineyard Creek Subdivision The proposed project will impact 2.69 acres of waters of the United States. The proposed mitigation will ensure that this impact is less-than-significant.	S	~~BR-7.~~BR-6. To compensate for the loss of wetlands and waters of the U.S., one of the following measures shall be implemented: 1. Preserve or create wetlands sufficient to result in no net loss of wetland acreage, and protect their required watersheds as is necessary for the continued function of wetlands on the project site. The appropriate hearing body shall determine that project design, configuration, and wetland management plan, provides reasonable assurances that the wetlands will be	LS

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		protected and their long-term ecological health maintained. 2. Where a Section 404 Permit has been issued by the Corps of Engineers, or an application has been made to obtain a Section 404 Permit, the Mitigation and Management Plan required by that permit or proposed to satisfy the requirements of the Corps for granting a permit may be submitted for purposes of satisfying paragraph 1, provided a no net loss of wetlands is achieved. ~~and, provided, further, that such mitigation and management plan shall be subject to the independent, discretionary approval of the Board of Supervisors.~~ 3. Pay to the County of Sacramento an amount based on a rate of $35,000 per acre for the unmitigated/uncompensated wetlands, which shall constitute mitigation for purposes of implementing adopted no net loss policies and CEQA required mitigation. The payment shall be collected by the Department of Planning and Community Development at the time of Improvement Plan or Building Permit approval, whichever occurs earlier, and deposited into the Wetlands Restoration Trust Fund.	
Construction of the proposed project will remove 1.49 acres of vernal pools, habitat for the vernal pool fairy shrimp, vernal pool tadpole shrimp, and spadefoot toad. Removal of this habitat represents a significant impact.	S	~~BR-8.~~BR-7. The applicant shall compensate for impacts to vernal pool species through consultation with the U.S. Fish and Wildlife Service as outlined in Section 7 of the Endangered Species Act. The applicant shall implement all measures included in the Biological Opinion issued as a result of this consultation.	LS

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
Project construction has the potential to disturb nesting activities of listed birds of prey. In addition, the proposed project will remove ~~108~~ 104.8 acres of Swainson's Hawk foraging habitat upon completion. Impacts to Swainson's Hawk and other raptor are considered significant.	PS	~~BR-9.~~BR-8. If construction is proposed during the raptor breeding season (February – August), a focused survey for migratory bird nests shall be conducted within 30 days prior to the beginning of construction activities by a qualified biologist in order to identify active nests on the site. If active nests are found, no construction activities shall take place within 500 feet of the nest until the young have fledged. Trees containing nests that must be removed as a result of project implementation shall be removed during the non-breeding season (September – January). If no active nests are found during the focused survey, no further mitigation will be required. ~~BR-10.~~BR-9. To mitigate for the loss of ~~108~~ 104.8 acres of Swainson's hawk foraging habitat, prior to the approval of Improvement Plans or building permits, or recordation of Final Subdivision Map, whichever occurs first, the applicant shall perform one of the following: 1. The project proponent shall preserve ~~56~~ 52.4 acres (0.50 acre for each acre lost) of similar habitat within a 10-mile radius of the project site. This land shall be protected through fee title or conservation easement (acceptable to the California Department of Fish and Game). 2. The project proponent shall, to the satisfaction of the California Department of Fish and Game, prepare and implement a Swainson's hawk mitigation plan that will include preservation of Swainson's hawk foraging habitat. 3. The project proponent shall submit payment of a Swainson's hawk impact mitigation fee per acre impacted to the Department of Planning and Community Development in the amount as set forth in Chapter 16.130 of the Sacramento County Code	LS

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		as such may be amended from time to time and to the extent that said Chapter remains in effect. 4. Should the County Board of Supervisors adopt a Swainson's hawk mitigation policy/program (which may include a mitigation fee) prior to the implementation of one of the measures above, the project proponent may be subject to that program instead.	
During the April 2002 field assessment, a large tricolor blackbird colony of up to 500 pairs was nesting within the blackberry thicket along Elder Creek. Construction activities have the potential to disturb nesting activities and remove habitat. Impacts to Tricolor Blackbird are, therefore, potentially significant.	PS	~~BR-11.~~BR-10. Prior to the ~~issuance of a work authorization permit~~approval of grading plans, submit a Tricolored Blackbird Mitigation Plan to the California Department of Fish and Game (CDFG) for review and approval. The plan shall include the following: 1. Preliminary surveys to determine the presence of nesting tricolored blackbirds; 2. Avoidance of active nesting colonies present on the site to the extent possible through establishment of temporary setbacks around the colonies until a qualified biologist verifies that young birds have successfully fledged.	LS
The portion of Elder Creek located within the project area represents potential habitat for the giant garter snake and the northwestern pond turtle. Construction of creek improvements and construction near the Elder Creek could impact both GGS and northwestern pond turtle. Impacts to GGS and northwestern pond turtle are potentially significant.	PS	~~BR-12.~~BR-11. The project site shall be surveyed for giant garter snakes and the northwestern pond turtle by a qualified biologist within 24 hours prior to the start of construction activities (including clearing and grubbing) located within 200 feet of Elder or Gerber Creek. Survey of the area shall be repeated if a lapse in construction activity of two weeks or greater occurs. If a giant garter snake and/or northwestern pond turtle is encountered during construction, activities shall cease until appropriate corrective measures have been completed or it has been determined that the snake and/or turtle will not be harmed. Giant garter snakes and northwestern pond turtles	LS

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		encountered during construction should be allowed to move away on their own. Capture and relocation of trapped or injured individuals shall only be attempted by personnel or individuals with current USFWS recovery permits. Any incidental take shall be reported to the USFWS at (916) 979-2725 and Department of Environmental Review and Assessment at (916) 874-7914 within one working day. Any giant garter snake and/or northwestern pond turtle sightings shall be reported within 24 hours to the Department of Environmental Review and Assessment at 874-7914.	
Drainage Master Plan			
The modified drainage corridors will result in 4.85 acres of creek (low-flow channel), 17.55 acres of channel bottom/wetlands and 3.23 acres of wetland/riparian benches. Post-project wetland/riparian habitat acreages will total 25.63 acres, a net gain of nearly 11.80 acres of habitat.	LS	None	LS
Construction of the proposed project will remove 1.08 acres of vernal pools, habitat for the vernal pool fairy shrimp, vernal pool tadpole shrimp, and spadefoot toad. Removal of this habitat represents a significant impact.	S	~~BR-13.~~BR-12. The applicant shall compensate for impacts to vernal pool species through consultation with the U.S. Fish and Wildlife Service as outlined in Section 7 of the Endangered Species Act. The applicant shall implement all measures included in the Biological Opinion issued as a result of this consultation.	LS
Project construction has the potential to disturb nesting activities of listed birds of prey. Impacts to Swainson's Hawk and other raptors are considered potentially significant.	PS	~~BR-14.~~BR-13. If construction is proposed during the raptor breeding season (February – August), a focused survey for migratory bird nests shall be conducted within 30 days prior to the beginning of construction activities by a qualified biologist in order to identify active nests on the site. If active nests are found, no construction activities shall take place within 500 feet of the nest until the young have fledged. Trees containing nests that must be removed as a result of project implementation shall be removed during the non-breeding season (September –	LS

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		January). If no active nests are found during the focused survey, no further mitigation will be required.	
The portions of Elder Creek and Gerber Creek located within the project area represent potential habitat for the giant garter snake and the northwestern pond turtle. Construction of creek improvements could impact both GGS and northwestern pond turtle. Impacts to GGS and northwestern pond turtle are potentially significant.	PS	~~BR-15.~~BR-14. The project site shall be surveyed for giant garter snakes and the northwestern pond turtle by a qualified biologist within 24 hours prior to the start of construction activities (including clearing and grubbing) located within 200 feet of Elder and Gerber Creek. Survey of the area shall be repeated if a lapse in construction activity of two weeks or greater occurs. If a giant garter snake and/or northwestern pond turtle is encountered during construction, activities shall cease until appropriate corrective measures have been completed or it has been determined that the snake and/or turtle will not be harmed. Giant garter snakes and northwestern pond turtles encountered during construction should be allowed to move away on their own. Capture and relocation of trapped or injured individuals shall only be attempted by personnel or individuals with current USFWS recovery permits. Any incidental take shall be reported to the USFWS at (916) 979-2725 and Department of Environmental Review and Assessment at (916) 874-7914 within one working day. Any giant garter snake and/or northwestern pond turtle sightings shall be reported within 24 hours to the Department of Environmental Review and Assessment at 874-7914.	LS
Water Treatment Facility			
The proposed project has the potential to impact Waters of the United States including vernal pools. The proposed mitigation will ensure that this impact is less-than-significant.	PS	~~BR-16.~~BR-15. To compensate for the loss of wetlands and waters of the U.S., one of the following measures shall be implemented: 1. Preserve or create wetlands sufficient to result in no net loss of wetland acreage, and protect their required watersheds as is necessary for the continued function of wetlands on the project site. The appropriate hearing body shall determine that	LS

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		project design, configuration, and wetland management plan, provides reasonable assurances that the wetlands will be protected and their long-term ecological health maintained. 2. Where a Section 404 Permit has been issued by the Corps of Engineers, or an application has been made to obtain a Section 404 Permit, the Mitigation and Management Plan required by that permit or proposed to satisfy the requirements of the Corps for granting a permit may be submitted for purposes of satisfying paragraph 1, provided a no net loss of wetlands is achieved. ~~and, provided, further, that such mitigation and management plan shall be subject to the independent, discretionary approval of the Board of Supervisors.~~ 3. Pay to the County of Sacramento an amount based on a rate of $35,000 per acre for the unmitigated/uncompensated wetlands, which shall constitute mitigation for purposes of implementing adopted no net loss policies and CEQA required mitigation. The payment shall be collected by the Department of Planning and Community Development at the time of Improvement Plan or Building Permit approval, whichever occurs earlier, and deposited into the Wetlands Restoration Trust Fund.	
Construction of the proposed project has the potential to impact vernal pools, habitat for the vernal pool fairy shrimp, vernal pool tadpole shrimp, and spadefoot toad. Removal of this habitat represents a significant impact.	PS	~~BR-17.~~BR-16. The applicant shall compensate for impacts to vernal pool species through consultation with the U.S. Fish and Wildlife Service as outlined in Section 7 of the Endangered Species Act. The applicant shall implement all measures included in the Biological Opinion issued as a result of this consultation.	LS

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
Project construction has the potential to disturb nesting activities of listed birds of prey, and remove Swainson's hawk foraging habitat. Impacts to Swainson's Hawk and other raptor are considered potentially significant.	PS	~~BR-18.~~BR-17. If construction is proposed during the raptor breeding season (February – August), a focused survey for migratory bird nests shall be conducted within 30 days prior to the beginning of construction activities by a qualified biologist in order to identify active nests on the site. If active nests are found, no construction activities shall take place within 500 feet of the nest until the young have fledged. Trees containing nests that must be removed as a result of project implementation shall be removed during the non-breeding season (September – January). If no active nests are found during the focused survey, no further mitigation will be required. ~~BR-19.~~BR-18. To mitigate for the loss of Swainson's hawk foraging habitat, prior to the approval of Improvement Plans, the applicant shall perform one of the following: 1. The project proponent shall preserve acreage at a rate of 0.50 acre for each acre lost of similar habitat within a 10-mile radius of the project site. This land shall be protected through fee title or conservation easement (acceptable to the California Department of Fish and Game). 2. The project proponent shall, to the satisfaction of the California Department of Fish and Game, prepare and implement a Swainson's hawk mitigation plan that will include preservation of Swainson's hawk foraging habitat. 3. The project proponent shall submit payment of a Swainson's hawk impact mitigation fee per acre impacted to the Department of Planning and Community Development in the amount as set forth in Chapter 16.130 of the Sacramento County Code as such may be amended from time to time and to	LS

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		the extent that said Chapter remains in effect. 4. Should the County Board of Supervisors adopt a Swainson's hawk mitigation policy/program (which may include a mitigation fee) prior to the implementation of one of the measures above, the project proponent may be subject to that program instead.	
CULTURAL RESOURCES			
Vineyard Point Subdivision			
No sites or building were found to be eligible for inclusion in the National Register. No prehistoric, archaeological sites were encountered during the field investigation of the Survey Area. However, the lack of surface evidence does not preclude the existence of important, subsurface cultural materials. There is a potential to unearth buried cultural remains during future project construction activities. Caution should, therefore, be exercised during future development activities. Any accidental encountered of previously unidentified cultural materials will require notification of the Department of Environmental Review and Assessment. If skeletal remains are encountered, both the Department of Environmental Review and Assessment and the County Coroner must be immediately notified. With the implementation of the mitigation proposed in the prior EIR, however, these potential impacts to cultural resources in the Vineyard Creek subdivision are considered less than significant.	PS	Mitigation included in the prior EIR is sufficient to ensure this potential impact is less-than-significant.	LS
Vineyard Creek Subdivision			
The Vineyard Point subdivision was a part of the original Survey Area which was included in the prior EIR. No potentially significant archeological or architectural resources were discovered during the surveys. However, this does not preclude the existence of important,	PS	Mitigation included in the prior EIR is sufficient to ensure this potential impact is less-than-significant.	LS

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
subsurface cultural materials. With the implementation of the mitigation proposed in the prior EIR, however, these potential impacts to cultural resources in the Vineyard Point subdivision are considered less than significant.			
WATER SUPPLY			
The prior EIR concluded that implementation of the North Vineyard Station Specific Plan Water Master Plan would result in less than significant water supply impacts. However, the implementation of the NVSSP Water Master Plan was contingent on the implementation of the Water Master Plan for Areas Adjacent to the Zone 40 Water Supply Master Plan Update's Study Area, as well as fulfillment of the City of Sacramento American River Place of Use. Until all agreement are in place to wheel "firm" surface water supplies to the Specific Plan area, the project will contribute to the incremental decline in ground water levels. This incremental decline and the dewatering of private wells is a regional issue, beyond the scope of the proposed project. However, the project would add to the significant adverse cumulative impacts that regional development has on ground water supplies. Compliance with the requirements of the Sacramento County Water Agency will ensure that impacts are less-than-significant.	LS	None	LS
SEWER SERVICE			
The revised sewer study does not include the proposed water treatment facility, which has the potential to contribute a significant amount of effluent into the sewer system. In addition, the proposed increased development densities anticipated from the density bonus program will also result in incremental increases in effluent generation from the Plan area. The County Sanitation District-1 (CSD-1) staff has indicated the increased flows will necessitate revised sewer studies and the planned sizing of the Gerber Road Trunk would have to be increased. Since	LS	None	LS

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
the Gerber Road Trunk sewer line has yet to be constructed, these necessary adjustments can be made and the impact of the increased flows is expected to be less than significant. The Gerber Trunk will tie into the Bradshaw 6A and 6B Interceptors, and the Central Interceptor further downstream, where there will be adequate capacity in to handle the increased flows from the water treatment facility and expected small to moderate increases in dwelling units through the density bonus program. CSD-1 indicated that the revised sewer study need not be included in this Draft EIR, but would be required prior to installation of the Gerber Road Trunk (pers. comm., Matt Morgan, CSD-1, June 15, 2004). Because potential impacts from the water treatment facility on the Gerber Road Trunk will be evaluated prior to installation of the trunk line and sized appropriately, lack of sewer capacity should not be an impediment to future development. Therefore impacts associated with sewer service are considered less-than-significant.			
DRAINAGE AND HYDROLOGY			
The revised DMP concluded that Basin E20 was not needed to mitigate downstream impacts from development of the NVSSP area. From a technical standpoint, the entire NVSSP area could be developed implementing the concept of interim storm drainage pumping. Development can be phased with interim pumping, and meet the drainage and flood control objectives, policies and standards of Sacramento County. Impacts associated with drainage are less-than-significant.	LS	None	LS

MITIGATION MONITORING AND REPORTING PROGRAM

Comply with the Mitigation Monitoring and Reporting Program (MMRP) for this project as follows:

1. The applicant shall comply with the MMRP for this project, including the payment of 100% of the Department of Environmental Review and Assessment staff costs, and the costs of any technical consultant services incurred during implementation of the MMRP. The initial estimate of these costs is $. If the initial estimate exceeds the actual monitoring costs, the balance shall be refunded to the applicant, and if the actual monitoring costs exceed the initial estimate, the applicant shall be responsible to pay the additional amount.

2. Until the MMRP has been recorded and the estimated MMRP fee has been paid, no final parcel map or final subdivision map for the subject property shall be approved; and no encroachment, grading, building, sewer connection, water connection or occupancy permit from Sacramento County shall be approved.

REQUESTS AND REQUIREMENTS OF VARIOUS AGENCIES

A. Sacramento Municipal Utility District

1. Vineyard Creek – Large Lot Tentative Map

    a. Dedicate a 12.5-foot public utility easement for overhead and underground facilities and appurtenances adjacent to Florin Road.

    b. Dedicate a 12.5-foot public utility easement for underground facilities and appurtenances adjacent to all public street rights of ways.

    c. Dedicate any Irrevocable Offer of Dedication and 12.5-feet adjacent hereto as a public utility easement for underground facilities and appurtenances.

    d. The owner/developer of the above noted property MUST disclose to future/potential buyer the following existing and potential 69 & 230 kV facilities.

    There is an existing overhead electrical 69 & 230 kV line located adjacent to the East property line.

2. Vineyard Creek – Small Lot Vesting Tentative Subdivision Map

    a. Dedicate a 12.5-foot public utility easement for underground facilities and appurtenances adjacent to all public street rights of ways.

    b. Dedicate the Landscape Corridors adjacent to Florin Road as a public utility easement for overhead and underground facilities and appurtenance.

    c. Dedicate the Landscape Corridors as a public utility easement for underground facilities and appurtenances.

    d. The owner/developer of the above noted property MUST disclose to future/potential buyer the following existing and potential 69 & 230 kV facilities.

    There is an existing overhead electrical 69 & 230 kV line located adjacent to the East property line.

3. Vineyard Point – Large Lot Tentative Parcel Map

    a. Dedicate a 12.5-foot public utility easement for underground facilities and appurtenances adjacent to all public ways.

b. Dedicate a 12.5-foot public utility easement for underground and overhead appurtenances adjacent to Bradshaw Road.

c. Dedicate the Irrevocable Offer of Dedication and 12.5 feet adjacent thereto as a public utility easement for underground facilities and appurtenances.

d. Designate a parcel of land for an electric substation to be acquired by the Sacramento Municipal Utility District having an approximate size of 150 feet by 150 feet of net useable area. The tentative location will be within the Vineyard Point development. The exact size and location of the substation site shall be by mutual agreement of SMUD and the property owners prior to the recordation of the final map.

e. Any revisions or deletions relative to the above conditions must be submitted in writing by the Real Estate section of SMUD. The County of Sacramento should accept no verbal or other written agreements.

f. The owner/developer must disclose to future/potential owners the existing or proposed 69kV electrical facilities.

~~g.~~4. Vineyard Point – Small Lot Vesting Tentative Subdivision Map

~~h.~~a. Dedicate a 12.5-foot public utility easement for underground facilities and appurtenances adjacent to all public ways.

~~i.~~b. Dedicate a 12.5-foot public utility easement for underground and overhead appurtenances adjacent to Bradshaw Road.

~~j.~~c. Designate a parcel of land for an electric substation to be acquired by the Sacramento Municipal Utility District having an approximate size of 150 feet by 150 feet of net useable area. The tentative location will be within the Vineyard Point development. The exact size and location of the substation site shall be by mutual agreement of SMUD and the property owners prior to the recordation of the final map.

~~k.~~d. Any revisions or deletions relative to the above conditions must be submitted in writing by the Real Estate section of SMUD. The County of Sacramento should accept no verbal or other written agreements.

~~l.~~e. The owner/developer must disclose to future/potential owners the existing or proposed 69kV electrical facilities.

B. Land Division & Site Improvement Review

1. Vineyard Creek – Large Lot Tentative Map

a. Offsite portion of 50-foot IOD adjacent to Parcels 6 and 7 must be secured prior to recordation.

b. Dedicate a standard 12.5-foot Public Utility Easement for underground facilities and appurtenances adjacent to all public ways, private drives and/or Irrevocable Offer of Dedication (IOD).

c. Prior to recordation of a final map or certificate of compliance, dedicate land or pay in lieu fees, or both, for park purposes, as required by and in accordance with the procedures and standards set forth in Chapter 22.40, Title 22 of the Sacramento County Code.

2. Vineyard Creek – Small Lot Vesting Tentative Subdivision Map

a. Secure offsite right of way for "L" Way and "7" Court; "G" circle and "B" Way, and install public street improvements pursuant to the Sacramento County Improvement Standards.

b. Dedicate a standard 12.5-foot Public Utility Easement for underground facilities and appurtenances adjacent to all public ways, private drives and/or Irrevocable Offer of Dedication (IOD).

c. Comply with all requirements of Chapter 1, Article 5, Title III, of the Sacramento County Zoning Code, relating to walls and landscape corridors adjacent to streets, including required maintenance provisions.

d. Prior to recordation of a final map or certificate of compliance, dedicate land or pay in lieu fees, or both, for park purposes, as required by and in accordance with the procedures and standards set forth in Chapter 22.40, Title 22 of the Sacramento County Code.

3. Vineyard Creek – Rezone

a. Grant the County right-of-way for Florin Road, based on a 108-foot standard, and Waterman Road, based on an 84-foot standard, and install public street improvements pursuant to the Sacramento County Improvement Standards.

C. Southgate Recreation and Park District

1. Comments and recommendations for Vineyard Creek Subdivision

a. Landscape Corridors shall be a minimum of 25 feet wide with a soundwall, along Florin Road and Waterman Road, and will be accepted by the District (proposed Lots F, G, H, I, J, & K). The Developer shall dedicate the landscape corridors to Southgate as a gift deed and be fully developed by the Developer with plans and specifications to be approved by the District. Corridors shall have a square curb and meandering six foot wide pathway separated from traffic. The District shall accept the completed landscape corridors after they have passed inspections and shall maintain the landscape corridors through assessment district proceeds. It is understood that the District does not maintain subdivision signage. The District does not require

subdivision entrance lighting, however, more residents are requesting landscape lighting to illuminate subdivision entryways and street names. In lieu of lighting the District does ~~requrest~~request the installation of wiring and connection to the electric box, on each side of Lots F and H at A Drive and Waterman Road, on each side of Lots H and J of F Way at Waterman Road, and on the east side of Lot K on Florin Road at L Way (for future installation of lighting, should it become necessary).

b. The Developer shall install a 6' high masonry wall for lots that back up or side-on to the landscape corridors along Florin Road, Waterman Road and A Drive. The design for all masonry walls shall be treated with graffiti-resistant coating and the design approved by the District. A Rain Bird maxicom controller, with telephone line and electricity shall be provided to tie into the District's computerized irrigation system as well as a certifiec reduced pressure backflow device.

c. The Developer shall consent to the inclusion of this subdivision within the North ~~Vioneyard~~Vineyard Station Financing District, which will be a Landscaping and Lighting Assessment District or a Mello Roos Community Facilities District, and the Southgate District-wide Landscaping and Lighting Assessment District. The Developer shall be responsible for notification to all subsequent purchasers of parcels of land of the inclusion within said financing districts. These financing districts will be established by the District for additional improvements and ongoing maintenance and operations.

d. As determined by the County Board of Supervisors, this subdivision will be included in the Southgate Recreation and Park District component of the North Vineyard Station Public Facilities Financing Plan. The District reserves the right to revise park land dedication requirements and financing mechanisms to adapt to changes resulting from modifications to the policy or the creation of a new Plan by the County of Sacramento.

e. The District will accept Park Lot C as identified on the revised Tentative Subdivision Map dated February 2004, with lot C being approximately 2.9± gross acres in size. The additional unmet Quimby requirements for the subdivision shall include the 11.4± gross acres adjacent to Park Lot C. The District will not give Quimby credit for property encumbered or otherwise with restrictions. Additional park site property shall be immediately adjacent to Park Lot C, as shown on the map, and conveyed to District at the ~~Same~~same time the 2.9 acres are conveyed. Since there will be an estimated over-dedication of 5.1 acres of parkland for this project, the District agrees to enter into a Developer Requirement Agreement, with the Developer, which shall address the Quimby credits for this project.

f. The District requests review of all Army Corp of Engineer, Fish and Game, Fish and Wildlife or any other State or Federal Agency comments and requirements as well as the final permit and conditions as they pertain to the

open space property, and will then determine acceptance of the conditions and respective property.

g. Open space areas shall front on a public road per County of Sacramento General Plan requirements. On areas of Open Space that front on a public street, a "setback" area of approximately 10 feet (from back of sidewalk into Open Space area) shall be minimally landscaped by Developer (to District's specifications) to provide for an aesthetic transition into the Open Space area. Similar to the landscape corridors; Developer shall bear all costs associated with the installation of related infrastructure, post and cable fencing and minimal landscaping (including drip irrigation). Any lots, including the multifamily Lot 378, backing or siding on to the open space area shall have a 6' high open, tubular steel fence constructed by Developer, and approved by the District. Fencing belongs to and is the responsibility of the residential property owner. Open space will have post and cable fencing along the back edge of the open space landscaped area, a vertical curb and connected 6-foot wide ~~cocrete~~concrete sidewalk along all Streets fronting open space area. Irrigation system to be connected to the District's maxicom computerized irrigation system inclusive of: controller, phone line and electricity. The District requests an ADA accessible drinking fountain with backflow prevention device along with an appropriate drainage inlet, be provided by the Developer on Lot B, adjacent to parcel 170. Open Space Lots A, B & E (approximately 9.5 acres) and as shown on the Tentative Map dated February 2004, shall be dedicated to the District as a gift with a clear title report, and be fully developed and improved by the developer with plans and specifications to be approved by the District. No Quimby credit or Developer Fee credit will be given for this open space or the improvements. Developer shall pay for these improvements. Location of improvements to be determined by District and Developer. The Developer shall install street lighting along streets fronting on all open space areas, on the open space side of the street. The District shall accept the completed open space area after they have passed inspections, accepted conditions required by the Army Corp of Engineers, and received a clear title report. The Developer shall agree to the inclusion in an additional assessment zone, to go towards the maintenance of the trail and open space area. The District shall maintain the trails and open space areas through assessment district zone proceeds. The District shall not own or otherwise take responsibility for creek channel maintenance or drainage functions.

h. The developer shall assure that the park land to be dedicated is appropriately graded to the District's specifications and pursuant to County standard; shall provide adjoining streets, sidewalks with vertical curbs; electrical, phone, storm drainage, sewer, and water stubs; connect to and provide water meter, reduced pressure backflow preventer; and pay all permit fees including building, sewer, water meter, water development and drainage fees for the park sites and landscape corridors in order to allow for improvements to the park lots, open space lots (limited) and landscape corridors within this

subdivision. Rain Bird maxicom controllers, with telephone line and electricity shall be connected to the District's computerized irrigation system.

i. It is understood that it is the responsibility of the property owner to care for and keep maintained the ten foot pedestrian easements and is not a part of the Landscape Corridors to be conveyed to the District, as shown on the Tentative subdivision map dated February 2004.

j. The District would appreciate the opportunity to further comment on this map after the Public Facilities Financing Plan has been approved in order to make any necessary adjustments.

k. In the event that the Central California Traction Railroad Corridor is abandoned and the County of Sacramento determines that these tracks shall become part of a Rails-to-Trails system, the District desires that the developer provide a landscaped access to this trail system from the proposed subdivision. This access should be a minimum of 30 feet in width, and be dedicated to the District, with no land dedication credits given to the developer for this acreage. The location can be determined at a future point in time, however, access points to consider could include but are not limited to access from the proposed Elder Creek Trail as it intersects the CCTRR. In lieu of the CCTRR becoming a trail, the District requests a low flow crossing across Lot B, adjacent to parcel 170 and on the west side of the CCTRR and a 50' wide easement along the southwest side of the CCTRR, to facilitate the bicycle/pedestrian trail planned for the North Vineyard Station community. This crossing is key to providing continuity to this trail system.

l. The District desires to work with the Developer and County Water Resources in identifying potential recreational uses of the 7.4 acre detention basin site. Due to the basin's relationship to the Park Lot C, active and overlapping joint use is realistic. In order to accommodate recreational uses advance planning needs to occur to address design issues including and not limited to access points and parking. A public access point and parki~~8~~ng area needs to be identified since the access point identified next to parcel 169 is for maintenance purposes only.

m. The developer shall construct a bicycle/pedestrian trail and landscaping along Gerber and Elder Creeks as required under the North Vineyard Station PFFP and as per District requirements for standards and location. The District has identified on the Drainage Corridor/Open space map the specific location of the trail, provided to MacKay and Somps in February 2004. For purposes of the Vineyard Creek subdivision, the trail shall be on the eastern/southern side of Elder Creek along the sewer interceptor path, continuing northerly to Florin Road. As mentioned above, in lieu of the CCTRR becoming a trail, the District requests a low flow crossing across Lot B, adjacent to parcel 170 and on the west side of the CCTRR and the construction of a northwesterly trail within a 50' wide easement to follow the western side of the CCTRR to Florin

Road, to facilitate the bicycle/pedestrian trail planned for the North Vineyard Station community. This crossing is key to providing continuity to this trail system. There will be 2 trails ~~convergingon~~converging on to Florin Road in order to negotiate around the CCTRR, for this subdivision. ~~Connecdtions~~Connections from the subdivision to the trail shall be provided a the locations indicated on the attached map or as determined by the District and Developer at a future date, due to changed conditions. Points of trail connections from the sidewalk to the trail shall be near the northwest corner of Lot D, at the end of H Circle by Parcel 170, between Parcels 63 and 41 on K Circle, between Parcels 20 and 21 on 11 Court, and between Parcels 5 and 6 on 12 Court. Additional trail connections shall be made from the Detention Basin and Park Lot. The trails are part of the overall Gerber Creek and Elder Creek Open Space area as identified in the Sacramento County land use plan. Improvements along bike trail and open space corridors shall compliment the design planned in the North Vineyard Station Plan. Trail and Open space area shall be gift deeded to the Southgate Recreation and Park District with no Quimby credits given for this area. Developer shall enter into a Developer Requirement Agreement for these improvements and may be credited developer ~~feess~~fees for all agreed to bike trail improvements. Due to the proximity of the creek to the subdivision the District requests a southern public access point and connection from the subdivision to the Gerber Creek trails. Location of creek access to be mutually determined by the Developer and the District. ~~Tril~~Trail alignment shall meander throughout the corridor. Trail design shall be provided to Developer by District. Typically, the trail shall not be closer than 20' from the top of bank along the creek and outside of any environmental constraints. Trail setback from the rear or side of residential property lines and streets shall be as far as possible, with a minimum distance of 50'. It is important that adequate space be provided in order to provide separation for bicycle, pedestrian and equestrian uses.

n. The District has previously had discussions with the County Sanitation District regarding the joint use, improvement and maintenance of land reserved for sewer interceptor and planned for trails. The Southgate District goes on record as supporting this joint use concept and wherever possible and feasible project planning should include and incorporate complimentary design and use of said land. A similar joint use agreement for this area is highly recommended.

2. Comments and recommendations for Vineyard Point Subdivision

a. Landscape Corridors, a minimum of 25 feet wide with soundwall, along Gerber and Bradshaw Road will be accepted by the District (proposed Lots J, K, L & M). In this revised map Landscape corridor lot K was eliminated when Lot G was added to the map. There should be a continuous corridor and sidewalk on Gerber Road. Lot K needs to be re-inserted on the map. The Developer shall dedicate the landscape corridors to Southgate as a gift deed and be fully developed by the Developer with plans and specifications to be

approved by the District. Corridors shall have a square curb and meandering pathway separated from traffic. The District shall accept the completed landscape corridors after they have passed inspections and shall maintain the landscape corridors through assessment district proceeds. It is understood that the District does not maintain subdivision signage. The District does not require subdivision entrance lighting, however, as a note we have been receiving more comments from residents requesting landscape lighting to illuminate subdivision entryways and street names. This amenity is only a suggestion and not a requirement. In lieu of lighting the District does request the installation of wiring and connection to the electric box, and the running of the wire through conduit under the following streets, on each side of 'A' Drive at Bradshaw Road and on each side of 5 Street at Gerber Road (for future installation of lighting, should it become necessary).

b. The Developer shall install a 6' high masonry wall for lots that back up or side-on to the landscape corridor along Gerber Road and Bradshaw Road. The design for all masonry walls shall be treated with graffiti-resistant coating and the design approved by the District. A Rain Bird maxicom controller, with telephone line and electricity shall be provided to tie into the District's computerized irrigation system as well as a certified reduced pressure backflow device.

c. The Developer shall consent to the inclusion of this subdivision within the North Vineyard Station Financing District, which will be a Landscaping and Lighting Assessment District or a Mello Roos Community Facilities District, and the Southgate District-wide Landscaping and Lighting Assessment District including the annexation to a new Zone in a landscaping and lighting assessment district, to ensure that adequate funding is available to pay for all costs associated with the repair, maintenance and monitoring in perpetuity for the capital development and operation and maintenance of the park facilities, open space property, trails and related improvements. The Developer shall be responsible for notification to all subsequent purchasers of parcels of land of the inclusion within said financing districts. These financing districts will be established by the District for additional improvements and ongoing maintenance and operations.

d. As determined by the County Board of Supervisors, this subdivision will be included in the Southgate Recreation and Park District component of the North Vineyard Station Public Facilities Financing Plan. The District reserves the right to revise park land dedication requirements and financing mechanisms to adapt to changes resulting from modifications to the policy or the creation of a new Plan by the County of Sacramento.

e. The District will accept Park Lot A as identified on the revised Tentative Subdivision Map dated December 15, 2003, with lot A being approximately 10.0 gross acres in size. The 1.8 gross acres previously shown as park lot D shall be removed and the acreage added to park lot A. An amendment to the

North Vineyard Station Specific Plan will still allow for a future 5.0 acre park site immediately east of the former park lot D. Any additional unmet Quimby requirements for the subdivision shall be paid to the District in in lieu fees.

f. The Developer shall install a 6' high masonry wall for lots that back up or side-on to the future park site on 11 Street (former Park Lot D). The design for all masonry walls shall be treated with graffiti-resistant coating and the design approved by the District.

g. The District will accept the removal of the formerly designated Parkway Lot E (as previously shown on the Tentative Subdivision Map dated October 10, 2002) from this map.

h. The developer shall assure that the land to be dedicated is appropriately graded to the District's specifications and pursuant to County standard; shall provide adjoining streets, sidewalks with vertical curbs; electrical, phone, storm drainage, sewer, and water stubs; connect to and provide water meter, reduced pressure backflow preventer; street lights fronting on park and open space property; and pay all permit fees including building, sewer, water meter, water development and drainage fees for the park site(s) and landscape corridors in order to allow for improvements to the park lot(s) and landscape corridors within the subdivision. Rain Bird maxicom controllers, with telephone line and electricity shall be connected to the District's computerized irrigation system. Additionally, traffic calming measures shall be initiated on 11 Street, at the points where it intersects 4 Street, in order to provide for a safe pedestrian crossing to and from the future park.

i. It is understood that it is the responsibility of the property owner to care for and keep maintained the ten-~~-~~foo~~d~~t landscaped pedestrian easements.

j. Lot N Landscape Corridor, as shown on the Tentative subdivision map dated December 15, 2003 shall also extend around the northern side of Lot C to shield the tank site lot and to provide an aesthetic view from the park site. It is understood that it is the responsibility of the property owner to care for and keep maintained this corridor. It is also understood that there will be continuous sidewalk along this corridor.

k. The District would appreciate the opportunity to further comment on this map after the Public Facilities Financing Plan has been approved in order to make any necessary adjustments.

l. In the event that the Central California Traction Railroad Corridor is abandoned and the County of Sacramento Determines that these tracks shall become part of a Rails-to-Trails system, the District desires that the developer provide a landscaped access to this trail system from the proposed subdivision. This access should be a minimum of 30 feet in width, and be dedicated to the District, with no land dedication credits given to the

developer for this acreage. The location can be determined at a future point in time. Design around the corridor and access should provide for the visibility to address security concerns, as requested by the Sheriff's Department and approved by the District.

m. The District desires to work with the Developer and County Water Resources in identifying potential recreational uses of the 9.7 acre detention basin site. In order to accommodate recreational uses an access point and parking area would need to be provided from the subdivision. This access point and parking area can be determined at a future point in time.

n. The District has master planned a trail along Gerber Creek, which is included as part of the North Vineyard Station Specific Plan. Due to the proximity of the creek to the subdivision the District requests a public access point from the subdivision to the Gerber Creek corridor and a connection to the future trail. Location of creek access to be mutually determined by the Developer and the District.

D. Recommendations/Requirements of the County Department of Transportation:

1. Vineyard Creek Subdivision

a. The spacing between A Drive and F Way must be a minimum of 420 feet apart in order to accommodate two left turn pockets on Waterman Road.

b. Construct a minimum 48-foot street section including 36 feet of pavement and a 12-foot median for the offsite right-of-way on Waterman Road per the North Vineyard Station P.F.F.P.

c. Grant the County right-of-way on Waterman Road based on either a 72-foot modified arterial without a median or a 76-foot modified arterial with a landscape median pursuant to the North Vineyard Station Specific Plan, the Sacramento County Improvements Standards, and to the satisfaction of the Department of Transportation.

d. Install public street improvements along Waterman Road pursuant to the North Vineyard Station Specific Plan, the Sacramento County Improvement Standards, and to the satisfaction of the Department of Transportation.

e. Show the required raised median on the Waterman Road street section.

f. Dedicate additional right-of-way on Waterman Road and A Drive for intersection widening per the Sacramento County Improvement Standard Drawing 4-6B and to the satisfaction of the Department of Transportation. Note: A bus turnout will be required on Waterman Road.

g. Grant the County right-of-way on Florin Road based on a 96-foot modified thoroughfare pursuant to the North Vineyard Station Specific Plan, the

Sacramento County Improvement Standards, and to the satisfaction of the Department of Transportation.

h. Install public street improvements along Florin Road pursuant to the North Vineyard Station Specific Plan, the Sacramento County Improvement Standards, and to the satisfaction of the Department of Transportation.

i. Dedicate additional right-of-way on Florin road and L Way for intersection widening per the Sacramento County Improvement Standard Drawing 4-5 and to the satisfaction of the Department of Transportation. Note: A bus turnout will be required on Florin Road.

j. No more than 100 units with access to L Way shall be constructed until there is a second point of access.

k. Lot 380 shall not be allowed to develop unless access can be provided to the west in order to avoid crossing the CCTC.

l. Reconfigure area comprising G Circle in order to bring street elbow into compliance with County standards.

m. Dedicate the landscaped lots to the County of Sacramento and provide a maintenance entity with an ongoing funding source. The maintenance entity shall be approved and found acceptable by County representatives. Annexation to a current Lighting and Landscape District or a Mello Roos Community Finance District may be possible and is the preferred course of action.

n. Traffic control devices shall be installed where needed to the satisfaction of the Department of Transportation. Traffic control locations will be determined at time of improvement plan submittal.

2. Vineyard Point Subdivision

a. Grant the County right-of-way on Gerber Road based on a 72-foot modified standard and install public street improvements pursuant to Sacramento County Improvement Standards and to the satisfaction of the Department of Transportation.

b. Grant the County right-of-way on Bradshaw Road based on a 96-foot modified standard and install public street improvements pursuant to Sacramento County Improvement Standards and to the satisfaction of the Department of Transportation.

c. Dedicate additional right-of-way on Bradshaw Road and ‘11’ Street for intersection widening per Standard Drawing 4-8 of the Sacramento County Improvement Standards and to the satisfaction of the Department of Transportation. Note: A bus turnout will be required on Bradshaw Road.

d. Dedicate additional right-of-way on Bradshaw Road and ‘9’ Street for intersection widening per Standard Drawing 4-8 of the Sacramento County Improvement Standards and to the satisfaction of the Department of Transportation. Note: A bus turnout will be required on Bradshaw Road.

e. Dedicate additional right-of-way on Gerber Road and ‘5’ Street for intersection widening per Standard Drawing 4-8 of the Sacramento County Improvement Standards and to the satisfaction of the Department of Transportation. Note: A bus turnout will be required on Gerber Road. In addition, the median at the intersection of ‘P’ Drive/’O’ Circle and ‘5’ Street will need to be redesigned to allow full turning movements at that intersection.

f. Provide a 30-foot half width along park frontages for on-street parking. Note: If the park will be providing recreational areas such as soccer fields and/or baseball fields, then on site parking will be required.

g. Stop signs should be installed where needed to the satisfaction of the Department of Transportation. Stop sign locations will be determined at time of improvement plan submittal.

h. The proposed public street entrance from Gerber Road should be a minimum of 50 feet in width, excluding median width, for a distance of 100 feet per the Sacramento County Improvement Standards and to the satisfaction of the Department of Transportation.

i. The proposed public street entrance from Bradshaw Road should be a minimum of 50 feet in width, excluding median width, for a distance of 100 feet per the Sacramento County Improvement Standards and to the satisfaction of the Department of Transportation.

j. Visibility easements should be included where needed per the Sacramento County Improvement Standards and to the satisfaction of the Department of Transportation.

k. All pedestrian access ramps affected by this project must be installed/upgraded pursuant to the State of California Title 24 Code of Regulations and to the satisfaction of the Department of Transportation.

E. Sacramento Metropolitan Air Quality Management District

1. The use of an aqueous base alternative fuel as a fuel for heavy-duty, off-road, diesel-powered equipment is also recommended. These alternative fuels will reduce NOx emissions by approximately 14% and PM10 emissions by approximately 63%.

2. Limit diesel engine idling to not more than 5 minutes, before turning off the engine.

3. During the construction phase(s) of the project, District Rule 403 – Fugitive Dust, will apply. The developer/contractor is required to control dust emissions from earth moving activities, or any other construction activity, to prevent airborne dust from leaving the project site. District Rules are available at www.airquality.org.

4. Any architectural coatings used must comply with District Rule 442 – Architectural Coatings. The developer/contractor is required to use coatings that comply with the volatile organic compound content limits specified in Rule 442. Questions regarding Rule 442 should be directed to the District's Compliance Assistance Hotline at (916) 874-4884.

5. We recommend that all required street trees be a minimum 24-inch box size. Larger trees provide shade that not only reduce heat, but also are more attractive to pedestrians for short trips to parks and neighborhood facilities.

6. If gas appliances are to be used in the dwelling units, District staff recommends the use of low NOx (Nitrogen Oxides) furnaces, water heaters, and cooking facilities.

7. We recommend that the developer install "Energy-Star" labeled roofing materials.

8. We recommend that the project comply with SMUD Advantage (Tier II or III) energy standards.

9. We recommend that an AQ-15 Air Quality Plan be developed to mitigate the air quality impacts of the project. Submission and approval of the plan should be completed as a condition of approval for the project. The AQ Plan should include, but not be limited to, the mitigation measures listed above.

F. Sacramento County Water Agency

The SCWA requires the following conditions of approval be placed on all tentative maps and vesting tentative maps within the North Vineyard Station Specific Plan Area:

1. That Simple Title ownership or sale agreements for the WTP lands are completed prior to any Tentative Map approvals within the North Vineyard Station Specific Plan area. WTP lands shall be reserved per the guidelines contained in Chapter 22.50 of the Sacramento County Code and Government Title 7, Division 2, Article 4.(1/03).

2. That well sites be identified prior to Tentative map approvals for subdivisions within the North Vineyard Station Specific Plan area and reserved per the guidelines contained in Chapter 22.50 of the Sacramento County Code and Government Title 7, Division 2, Article 4.(1/03).

3. That well sites be reserved on the Final Subdivision Maps of subdivisions within the North Vineyard Station Specific Plan area.

4. That no more than a cumulative total of 2,530 equivalent dwelling units (EDUs) in Tentative Subdivision Map lots may be approved within the North Vineyard Station Specific Plan area until either surface water supply consistent with the approved NVS Water Supply Master Plan has been secured, or the SCWA Board of Directors finds that an acceptable alternative supply consistent with the Zone 40 Water Supply Master Plan has been secured.

Comments were also provided in regards to the Vineyard Creek Tentative Subdivision Map:

1. Destroy all abandoned wells on the proposed project site in accordance with the requirements of the Sacramento County Environmental Health Division. Clearly show all abandoned/destroyed wells on the improvement plans for the project. Prior to abandoning any existing agricultural wells, applicant shall use water from agricultural wells for grading and construction.

2. Prior to tentative subdivision map approval, prepare a Water Supply Master Plan, to the satisfaction of the Sacramento County Water Agency.

3. Prior to tentative subdivision map approval, the Sacramento County Water Agency requires either fee simple title or sale agreements or reservation agreements for a water treatment plant site as identified in the most current approved North Vineyard Station Specific Plan Water Supply Master Plan. In addition, prior to final map recordation, the affected property owner, future successors or interests shall enter into an agreement with SCWA consistent with Chapter 22.50 of the Sacramento County Code and Government Code Title 7, Division 2, Article 4.

4. The Sacramento County Water Agency (SCWA) will not issue water connection permits or sign improvement plans until adequate water supplies have been secured. In addition, the final map shall not be recorded until the SCWA has secured fee simple title to the North Vineyard Station WTP.

5. Prior to the issuance of any building permits for the project, the project developer/owner shall pay Zone 40 development fees applicable at the time of building permit issuance in accordance with Sacramento County Water Agency Ordinance No. 18.

6. Prior to the issuance of any building permits for the project, the project shall conform to the specific provisions of the Sacramento County Landscape Water Conservation Ordinance (Chapter 14.10 of the Sacramento County Code) to the satisfaction of the County Landscape/Oak Tree Coordinator.

G. County Sanitation District – 1

1. Provide a revised sewer study, to the satisfaction of the County Sanitation District-1 staff, to address the increased sizing needs for the Gerber Road Trunk Sewer in order to adequately accommodate anticipated effluent flows from the

proposed water treatment facility and potential increases in dwelling units through the density bonus program.

2. Vineyard Creek

   a. Connection to the public sewer system shall be required to the satisfaction of CSD-1. Sacramento County Improvement Standards apply to any on and off-site sewer construction.

   b. CSD-1 shall require an approved sewer study prior to the submittal of improvement plans for plan check to CSD-1. Portions of the subject project shall flow into the BR Florin Road Trunk Shed and other portions shall flow into the BR Gerber Road Trunk Shed in accordance with the Sanitary Sewer Study for the North Vineyard Station Specific Plan and the Sewage Facilities Expansion Master Plan.

   c. Each lot shall have a separate connection to the public sewer system.

   d. In order to obtain sewer service, construction of on and off-site public sewer will be required to the satisfaction of CSD-1.

   e. Construction of off-site public trunk sewer will be required in conformance with approved sewer studies and to the satisfaction of CSD-1. In accordance with the Connection Fee Ordinance, it will be necessary to schedule a meeting to discuss reimbursement requirements with appropriate CSD-1 staff prior to any trunk design.

   f. Design of all public sewers shall be coordinated with and approved by CSD-1. Sewer easements may be required. All sewer easements shall be dedicated to CSD-1, in a form approved by the District Engineer. All sewer easements shall be 20 feet in width and ensure continuous access for maintenance.

   g. The trunk and collector sewer system for the project will not be accepted for maintenance and building occupancy will not be granted until the downstream sewer system serving the project is also accepted for maintenance.

   h. Prior to the recordation of the Final Map the applicant will enter into and record an agreement, in a form approved by the District Engineer and District Counsel of Sacramento Regional County Sanitation District (SRCSD), to require the property owner(s) to reserve lands for acquisition by the District to install District pipelines and facilities for public health purposes and in conformance with the District Master plan. The District shall exercise the agreement and acquire the reserved lands within two years of the completion and acceptance of required public improvements. The area of land will be 75 feet wide, or as determined by SRCSD. The applicant shall coordinate the area required with SRCSD and clearly show the area by meets and bounds on the Final Maps.

i. A Temporary Construction Easement (TCE) will be required along both sides of the future interceptor. The required TCE shall be 42.5 feet wide on each side of the permanent 75-foot wide interceptor easement. The Final Maps shall clearly show the TCE.

j. Construction of any and all improvements, including but not limited to grading, streets, utilities, houses and other structures, within the TCE shall be prohibited until such time the TCE is released by SRCSD unless approved by the District Engineer

H. Sacramento Metropolitan Fire District

1. In every new building where the total floor area exceeds 3,599 square feet an automatic fire sprinkler system shall be installed and equipped with an electronic monitoring system. The system shall be designed and installed as per the guidelines of National Fire Protection Association standard 13, latest edition, and the Fire Prevention Standards of this fire district number 442.501.

2. The minimum required fire flow for commercial developments is outlined in the Uniform Fire Code, Table A-III-A-1, but shall not be less than 1500 gallons per minute at 20 pounds per square inch residual for a duration of two (2) hours.

3. The required fire flow for the proposed project will vary depending on the type of construction, total square footage of the structure(s) and weather or not a fire sprinkler system is provided or required. This determination will be made when the appropriate information is provided to our office.

4. Every building shall be accessible to fire district fire apparatus by means of an all-weather driving surface designed to meet Traffic Index 5.5. The access shall be a minimum of 20 feet wide and have a minimum turning radius of 40 feet inside and 60 feet outside. The minimum vertical clearance 13 feet 6 inches. The access roadways are to be extended within 150 feet of all portions of the exterior walls of the first story. Dead-end fire Department access roads in excess of 150 feet shall be provided with an approved means for turning around the fire apparatus. This fire apparatus access lane and turnaround shall be identified in accordance with the California Vehicle Code. The access roadways are to be provided prior to any construction or storage of combustible materials on site.

5. All fire department connections for the automatic fire extinguishing system shall be located within forty feet of a fire hydrant and a minimum of forty feet from any openings within the protected building.

6. Commercial buildings exceeding 5,000 square feet must be tested to verify adequate transmission and reception of public safety radio signals. These signals operate on the 800 MHz frequency. If reception or transmission is not adequate, 800 MHz radio amplification systems shall be installed in the building.

7. If the crossing of a creek is going to be included, the installation of a private bridge shall be required and shall be designed for a minimum of HS20-44 loading as prescribed by the American Association of State Highways and Transportation Officials. The width shall be minimum of twenty (20) feet. The maximum allowable grade change of the approach to and the departure from the bridge will not exceed eight (8) percent for a distance of ten (10) feet.

8. Fire hydrants are to spaced every three hundred (300) feet and located as approved by the Fire District. Water main inter-ties may be required. The type and kind of fire hydrants shall be approved by the Fire District. The hydrant shall be within (8) feet of fire department access. (reference UFC 903.4 and SCC 1240).

9. All fire hydrants are to be installed and made serviceable prior to any construction or storage of combustible materials on the site. The fire hydrants are to be accessible via an all weather-driving surface approved by the Fire District, during all phases of construction.

10. The approved civil plans shall be submitted in the approved electronic format (DXF or DWG Auto CAD version 2000 or later.

11. Any traffic signal modifications planned at Elk Grove Florin Rd, Gerber Rd, Bradshaw Rd, and Florin Rd and any new signals devices compatible with those employed by the fire department in changing those signals “green” for our direction of travel during an emergency response. Any new signal lights is required to install “Opticom.””

The Fire District also provided the following comments for the proposed subdivisions:

1. “Provide approved steamer type fire hydrants for residential areas located as follows:

    A. Maximum 500 feet between hydrants: Provide steamer type fire hydrants as follows:

        1. One fire hydrant shall be located between 150 and 250 feet from the end of the access roadway or cul-de-sac.

        2. A hydrant installed at the end of an access roadway, as a “blow off” for the water district does not meet the fire department requirements.

        3. Existing “wharf” fire hydrants are not acceptable to meet the requirements for new construction.

        4. Each steamer hydrant shall have a minimum flow of 1000 gpm at 20 pounds of residual pressure for residential areas where the total square feet of the building and garage is no more than 3600 square feet. UFC App. III A, Sect. 5.1

NOTE: Specifications for fire hydrants are available at the Fire Prevention office.

2. Fire department notes and details shall be shown on the Civil Drawings. Copies of the standards are included with the Engineers copy of this letter. See c.c.'s UFC 903.2.

3. An approved water supply capable of supplying the required fire flow for fire protection shall be provided to all premises upon which facilities, buildings or portions of buildings are hereafter constructed or moved into or within the jurisdiction. When any portion of the facility or building protected is in excess of 150 feet from a water supply facility or building, on-site fire hydrants and mains capable of supplying the required fire flow shall be provided when required by the Chief. UFC 903.2

   For residential subdivisions, the required fire flow is 1000 gallons per minute for dwellings with attached garages having no more than 3,600 square feet. For dwellings with garages over 3,600 square feet, additional flow is required starting at 1750 gallons per minute.

   EXCEPTION:

   A. Group R, Difvision 3 Occupancies provided with an approved automatic fire sprinkler system, per NFPA 13D, in areas not provided with a public water supply.

   B. Group U, Division 1 Occupancies.

4. In Group R Occupancies, the roof covering shall not be less than Class "C" when there is no public water supply source with a distribution system conforming to County Standards. Sacramento County Code 16.04.060.

5. Provide access roadways with all-weather driving surface of not less than 20 feet of unobstructed width, with a minimum turning radius of 22 feet inside/40 feet outside dimension. It shall be capable of supporting the imposed loads of fire apparatus and having a minimum of 13 feet, 6 inches of vertical clearance. The access roadway shall be extended to within 150 feet of all portions of the exterior walls of the first story of any building. Dead-end fire department access roads in excess of 150 feet long shall be provided with approved provisions for the turning around of fire apparatus. Submit a detailed drawing to this office showing the "turnaround," when required, for review and approval prior to construction. UFC 902.

6. If there are no immediate plans for new construction or storage of combustible materials on this site, the above mentioned requirements may be held in abeyance until such time that development occurs. It is important to note that if the property is sold, the seller of the property is encumbered to disclose the above requirements to the buyer.

7. There shall be no parking on any street narrower than 28 feet. Parking shall be allowed only on one (1) side on streets from 28 feet to 36 feet wide. Streets that are wider than 36 feet, parking shall be allowed on both sides. Measurements shall be from edge of pavement to edge of pavement. UFC 901.4. On private streets, marking of the fire lanes per the County Fire Marshals' standard may be required.

8. Provide approved address numbers on the building in such a position as to be plainly visible and legible from the street or road fronting the property. Said numbers shall contrast with their background and on all new buildings, shall be illuminated at night. UFC 901.4.4.

   NOTE: In order to meet this requirement the following methods are acceptable:

   A. Name the access road and ensure that the new addresses be listed for the newly named "street, and meet the requirement above or …

   B. Provide approved address numbers on the homes and for each of the homes on the access drive, provide approved address numbers posted next to the entrance to the access drive, facing the public street in an approved manner to meet the above requirement.

9. Should security gates be considered for this project, the developer shall contact this office for approval of specific clearances, locking mechanisms, or systems, which will accommodate emergency fire department use and then follow established permit procedures pursuant to Sacramento County Code, Chapter 16.70. Further information can be obtained by calling the Crime Prevention Unit of the Sacramento county sheriff's Office at (916) 440-5151. UFC 1208.

10. Remove from any roof, court, yard, vacant lot or open space all accumulations of wastepaper, hay, grass straw, weeds, litter or combustible or flammable waste material, waste petroleum products or rubbish of any kind. All weeds, grass, vines or other growth, when same endangers property or is liable to be fired shall be cut down and removed by the owner or occupant of the property. When total removal of growth from a piece of property if impractical due to size or to environmental factors, approved fuel breaks may be established between the land and the endangered property. The width of the fuel break shall be determined by height, type and amount of growth, wind conditions, geographical conditions and type of exposures threatened, UFC 1103.2.4 (Minimum width of clearance shall be 30 feet or to the property line, whichever is less. Specific conditions may require additional clearance width. UFC APPENDIX II-A, 16).

11. All fire protection equipment to be maintained in operative condition. UFC 1001.5.1

3 PROJECT CHARACTERISTICS

PROJECT DESCRIPTION

The subject ~~to~~ of this Supplement Draft EIR consists of amendments to the specific plan water treatment and storage facilities, and two separate rezones and subdivision maps. Each is described in detail below.

SPECIFIC PLAN AMENDMENT (03-CPB-0082)

Proposed amendments to the land use designations of the North Vineyard Station Specific Plan accommodate stormwater detention and drainage facilities, internal street and park site modifications, and addition of a water treatment facility. Minor internal residential density adjustments result in a slight change in overall holding capacity, which increases from 5,732 dwelling units to 6,063 dwelling units (Plate A and Table 3-1).

The following policies will be added to the Specific Plan:

> "In order to increase opportunities to provide affordable housing projects within the Plan Area which address the needs of low or very low income individuals or families, affordable Multifamily Residential ("MFR") housing projects otherwise allowed as set forth in Section 4.4 of this Plan shall be an allowed use in any residential land use designation of the Plan provided that 1) at such time as a landowner applies for a small lot tentative subdivision map, such application clearly designates any property for which such affordable multifamily housing project is intended, and 2) such application clearly states that such site is proposed for dedication to the Sacramento Housing and Redevelopment Authority (SHRA) for such purpose. If a small lot tentative subdivision map is approved which does not meet either of the requirements in the foregoing sentence, no multifamily project shall be permitted thereon unless it is located on land designated "MFR" on the Land Use Diagram of this Plan."
>
> "In the event a landowner agrees to dedicate a site to SHRA for development of an affordable housing project, the landowner shall be entitled to receive a density bonus on its remaining property comprising the subject tentative subdivision map for the housing units otherwise lost due to the dedication."

The following would be inserted towards the end of Section 604.13(A) of the Zoning Ordinance for North Vineyard Station:

3. Uses permitted in the RD-25 residential land use zone shall also be permitted in the RD-1, RD-2, RD-3, RD-4, RD-5, RD-7, RD-10, RD-15, and RD-20 residential land use zones provided that (1) such use shall only be permitted if the site on which the RD-25 use is proposed is designated within and in

conjunction with the approval of a small lot tentative subdivision map, and (2) the application for such tentative map clearly states that such site or the applicable portion of such site, is proposed for dedication and the approved tentative subdivision map shall include a condition requiring that such site or portion thereof be dedicated to the Sacramento Housing and Redevelopment Authority ("SHRA") for development of an affordable housing project.

In the event that a landowner agrees to dedicate a site to SHRA for development of an affordable housing project, the landowner shall be entitled to receive a density bonus on its remaining property comprising the subject tentative subdivision map for the housing units otherwise lost due to the dedication.

WATER TREATMENT AND STORAGE FACILITIES (04-PWE-0144)

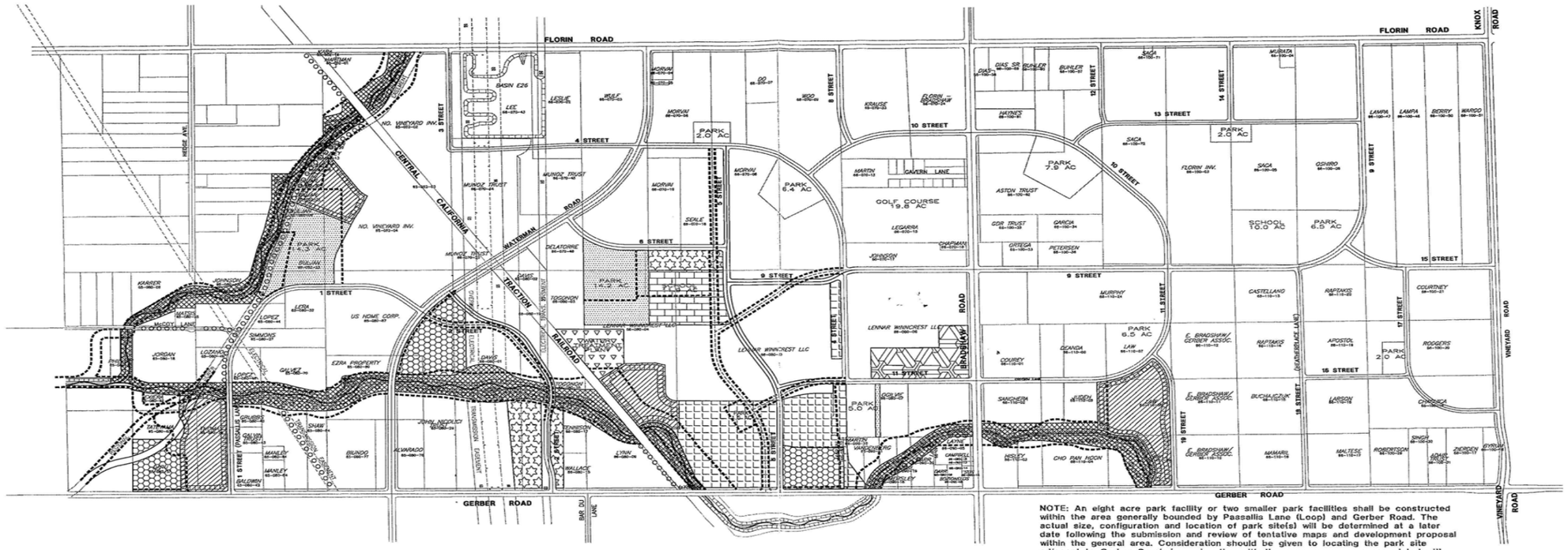
The requested work for the North Vineyard Water System has been divided into two projects:

PROJECT 1 – GROUND WATER TREATMENT AND STORAGE PLANT, AND ONE ON-SITE WELL PUMP STATION

Project 1 would be located in an area of new development bounded roughly by Elk Grove-Florin Road, Gerber Road, Vineyard Road, and Florin Road. The treatment, storage, and booster facility and on-site well would be constructed on a 6-acre parcel. A preliminary site plan is shown in Plate B. Project 1 will consist of the following components:

1. Two 1,500 gallon per minute (gpm) filter units with provisions for a third filter
2. One 2,000,000 gallon (2 MG) welded steel tank with provisions for a second tank
3. One 150,000 gallon welded steel backwash tank with provisions for a second backwash tank
4. Booster pumps
5. Chemical treatment facilities
6. Operations, chemical storage, and control building
7. On-site well pump station

Plate A
Specific Plan Amendment



NOTE: An eight acre park facility or two smaller park facilities shall be constructed within the area generally bounded by Paasalila Lane (Loop) and Gerber Road. The actual size, configuration and location of park site(s) will be determined at a later date following the submission and review of tentative maps and development proposal within the general area. Consideration should be given to locating the park site adjacent to Gerber Creek in conjunction with the open space area associated with Gerber Creek. Developing property owners shall contact the Southgate Park and Recreation District to determine the size, configuration and location of the park site(s).

LAND USE LEGEND

- BUSINESS / PROFESSIONAL
- COMMERCIAL
- SINGLE FAMILY RESIDENTIAL (1-3)
- SINGLE FAMILY RESIDENTIAL (3-5)
- SINGLE FAMILY RESIDENTIAL (4-7)
- MEDIUM DENSITY RESIDENTIAL (7-12)
- MULTI-FAMILY RESIDENTIAL (12-22)
- ADOPTED LAND USE DIAGRAM
- REVISED LAND USE DIAGRAM
- LANDSCAPE CORRIDOR
- DRAINAGE PARKWAY
- PARKWAY
- STORM WATER DETENTION BASIN
- OPEN SPACE
- PUBLIC SERVICES
- SCHOOLS
- PARKS

* NOTE: AREAS SHOWN IN WHITE HAVE NOT BEEN REVISED.

LAND USE SUMMARY - COMPARISON

RESIDENTIAL SUMMARY			EXISTING		PROPOSED		DIFFERENCE	
LAND USE	DENSITY RANGE	DENSITY FIXED COUNT	AREA NET/GROSS	UNITS	AREA NET/GROSS	UNITS	AREA NET/GROSS	UNITS
MULTI-FAMILY RES.	12 to 22	18 (net)	37.8 / 30.7	680	52.3 / 45.0	1,110	14.4 / 25.3	430
MEDIUM DENSITY RES.	7 to 12	10 (net)	18.7 / 19.4	187	30.9 / 32.7	309	12.2 / 13.3	122
SINGLE FAMILY RES.	4 to 7	6 (gross)	204.8	1,227	193.1	1,158	(11.5)	(69)
SINGLE FAMILY RES.	3 to 5	5 (gross)	611.7	3,058	585.0	2,925	(26.7)	(133)
SINGLE FAMILY RES.	1 to 3	2 (gross)	283.4	567	269.8	539	(13.6)	(28)
EXISTING RESIDENTIAL			5.6	13	5.6	13	0	0
SUB-TOTAL:			1,164.6	5,732	1,151.4	6,063	(13.2)	331

NON-RESIDENTIAL SUMMARY	EXISTING		PROPOSED		DIFFERENCE	
LAND USE	AREA NET/GROSS		AREA NET/GROSS		AREA NET/GROSS	
GOLF COURSE	19.8	20.1	19.8	20.1	0	0
COMMERCIAL	29.9	30.5	30.1	30.7	0.2	0.2
BUSINESS / PROFESSIONAL	7.1	7.9	7.1	7.9	0	0
SCHOOLS	20.0	21.5	20.9	22.4	0.9	0.8
PARKS	63.5	68.3	66.9	71.5	3.4	3.3
PARKWAYS	---	2.5	---	0.8	---	(1.7)
DRAINAGE PARKWAY	---	75.5	---	73.7	---	(1.8)
OPEN SPACE / STORM WATER DETENTION	---	104.7	---	112.5	---	7.8
LANDSCAPE CORRIDORS	---	23.2	---	21.8	---	(1.4)
PUBLIC SERVICES	5.3	5.5	11.3	11.5	6.0	6.0
MAJOR STREETS	---	57.6	---	57.6	---	0
RAILROAD	---	14.6	---	14.6	---	0
SUB-TOTAL:	431.9		445.1		13.2	
TOTAL:	1596.5		1596.5		0	

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SPECIFIC PLAN AMENDMENT

MACKAY & SOMPS
CIVIL ENGINEERS, INC.
SACRAMENTO, CALIFORNIA (916) 929-6092
Job Number: 7536-10 Date: 02/06/04

0 300' 600'
SCALE IN FEET

NORTH VINEYARD STATION
LAND USE COMPARISON
ADOPTED NOVEMBER 4, 1998 REVISED 12/24/02, 5/5/03, 12/12/03, 2/3/04,
COUNTY OF SACRAMENTO REVISED FEBRUARY 6, 2004

DONN C. REINERS INC
SPECIALISTS IN SITE PLANNING

Table 3-1
Land Use Summary - Comparison

LAND USE SUMMARY - COMPARISON

RESIDENTIAL SUMMARY			EXISTING			PROPOSED			DIFFERENCE		
LAND USE	DENSITY RANGE	DENSITY FIXED COUNT	AREA NET/GROSS		UNITS	AREA NET/GROSS		UNITS	AREA NET/GROSS		UNITS
MULTI-FAMILY RES.	12 to 22	18 (net)	37.8	39.7	680	62.2	65.0	1,119	24.4	25.3	439
MEDIUM DENSITY RES.	7 to 12	10 (net)	18.7	19.4	187	30.9	32.7	309	12.2	13.3	122
SINGLE FAMILY RES.	4 to 7	6 (gross)		204.6	1,227		193.1	1,158		(11.5)	(69)
SINGLE FAMILY RES.	3 to 5	5 (gross)		611.7	3,058		585.0	2,925		(26.7)	(133)
SINGLE FAMILY RES.	1 to 3	2 (gross)		283.4	567		269.8	539		(13.6)	(28)
EXISTING RESIDENTIAL				5.8	13		5.8	13		0	0
SUB-TOTAL:			1,164.6		5,732	1,151.4		6,063	(13.2)		331

NON-RESIDENTIAL SUMMARY	EXISTING		PROPOSED		DIFFERENCE	
LAND USE	AREA NET/GROSS		AREA NET/GROSS		AREA NET/GROSS	
GOLF COURSE	19.8	20.1	19.8	20.1	0	0
COMMERCIAL	29.9	30.5	30.1	30.7	0.2	0.2
BUSINESS / PROFESSIONAL	7.1	7.9	7.1	7.9	0	0
SCHOOLS	20.0	21.6	20.9	22.4	0.9	0.8
PARKS	63.5	68.2	66.9	71.5	3.4	3.3
PARKWAYS	---	2.5	---	0.8	---	(1.7)
DRAINAGE PARKWAY	---	75.5	---	73.7	---	(1.8)
OPEN SPACE / STORM WATER DETENTION	---	104.7	---	112.5	---	7.8
LANDSCAPE CORRIDORS	---	23.2	---	21.8	---	(1.4)
PUBLIC SERVICES	5.3	5.5	11.3	11.5	6.0	6.0
MAJOR STREETS	---	57.6	---	57.6	---	0
RAILROAD	---	14.6	---	14.6	---	0
SUB-TOTAL:	431.9		445.1		13.2	
TOTAL:	1596.5		1596.5		0	

ITEM 1: WATER TREATMENT PLANT

A water treatment plant, consisting of filter units, backwash pumps, and recycle pumps will be provided to remove manganese (and possibly iron and arsenic) from groundwater wells using a greensand and anthracite base media. Two 1,500-gpm filter units are to be provided initially, with provisions for an additional 1,500-gpm filter vessel. The filter vessels would be automated, backwashed in series and would incorporate recycled backwash water as a portion of the influent flow. The initial phase of the filter system installation will include two filters, each matching the capacity of a single production well. Separate backwash pumps will be used to backwash and clean the filters and to send the backwash water to the backwash tank. Separate recycle pumps will pump the water from the backwash tank, minus the filtered iron and manganese solids, back through the filter.

ITEMS 2 AND 3: WATER STORAGE AND BACKWASH TANKS

The proposed storage and treatment facility would include two welded steel storage tanks; one for storage of treated water, the other for backwash water settling, recycling, and disposal. The treated water storage reservoir would hold approximately 2.0 million gallons of water, and have a diameter of about 140 feet, and an overall height of about 22 to 24 feet at the center of the roof. The backwash tank, would have a diameter of approximately 40 to 45 feet in diameter and a height of about 16 to 18 feet, and would include a gravity drain for removal of accumulated solids removed by the filtration process. Both the treated water and backwash water storage tanks would be furnished with manways, vents, safety ladders, control valves, and corrosion control equipment. Space will be provided and provisions will be made during the design and construction phase to add an identical future storage tank and future backwash tank.

ITEM 4: BOOSTER PUMPS

The proposed facility will utilize vertical turbine booster pumps to deliver water from the storge reservoir into the water distribution system for public consumption. Initially, the facility would incorporate 3 boosters at 2,000 gpm each. Accommodations would be made for future inclusion of three additional booster pumps, for a total capacity of 12,000 gpm.

ITEM 5: CHEMICAL TREATMENT FACILITIES

Chlorine (sodium hypochlorite) will be added into the raw water pipeline used to convey water from the production wells, prior to the iron and manganese filter vessels in order to oxidize and enhance the removal of iron and manganese present in the pumped groundwater. Provisions would also be made to introduce ferric chloride into the same pipeline to reduce arsenic concentrations, if present in groundwater at concentrations that would require treatment. Finally, provisions may also be made to add fluoride. Should fluoride treatment occur, the fluoride would be added into the treated water stream from the water storage tank, just before being introduced into the water distribution system. All chemicals used in the treatment process will be stored inside a

sheltered structure or building, with containment provisions to limit the potential for a chemical release to the surrounding environment.

ITEM 6: BUILDING

A building will be designed to house the booster pumps, motor control center, chemical treatment facilities, and an emergency generator. The building will limit noise impacts, improve aesthetics, and increase security.

ITEM 7: ON-SITE WELL PUMP STATION

The production well, equipped with a vertical turbine pump, will be housed in the same building discussed previously, or in a separate station building on the site. The pump station will contain the well, lineshaft turbine pump, discharge head and station piping and controls. This on-site pump station will have a design capacity of 1,500 gpm.

PROJECT 2 – ~~REMOVE~~ REMOTE WELL PUMP STATIONS NO. 1 AND NO. 2

Additional sources of groundwater will be provided by two additional production wells to be installed at remote locations. The proposed remote well sites are each located approximately one-quarter mile from the treatment facility. A location map is shown in Plates C through E. These two remote wells (well sites No. 1 and No. 2) will pump water to the North Vineyard Station treatment, storage, and booster facility through a "raw-water" connection pipeline to be constructed as part of the Subdivision Project. The supply wells will each be equipped with vertical turbine pumps designed for a 1,500 gpm capacity each. Water quality from nearby existing wells indicates a likelihood of iron and manganese (and possibly arsenic) at levels above the MCL in the raw water. Therefore, the raw water from the wells will be routed through the treatment plant to produce water that meets drinking water standards. The remote well pump stations will be housed in a building to reduce noise impacts, improve aesthetics, and increase security. The pump stations would have concrete masonry buildings with removable roof sections containing the well pump, motor, and associated controls. The two remote pump stations would be equipped with a telemetry system for remote operation and they would be graded, paved, and surrounded with a concrete masonry wall for additional sound attenuation as well as for neighborhood esthetics and security of the sites.

Plate B
Conceptual Layout – Water Treatment Plant Site

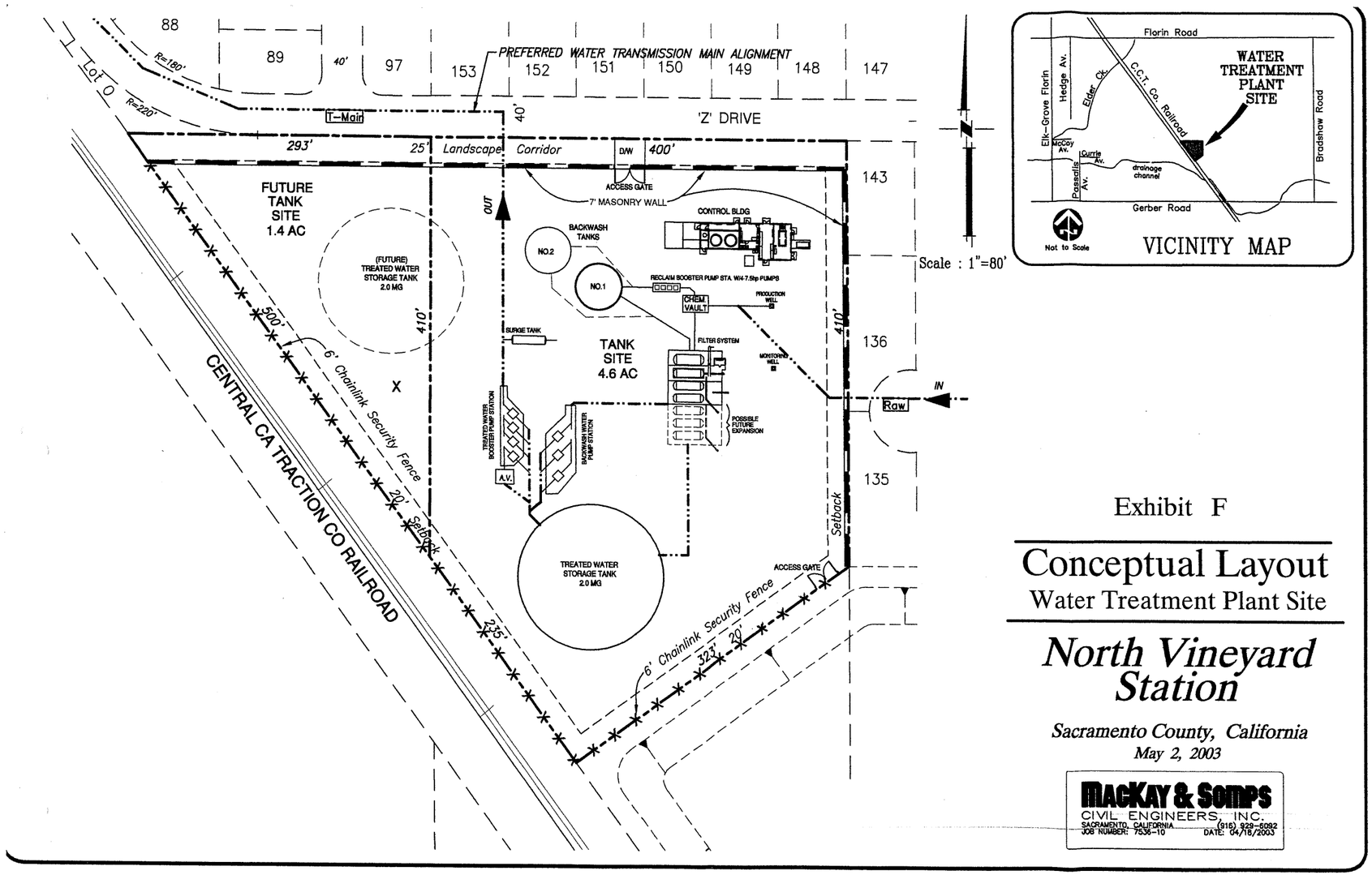


Plate C
Water Treatment Facilities – Alternate 1

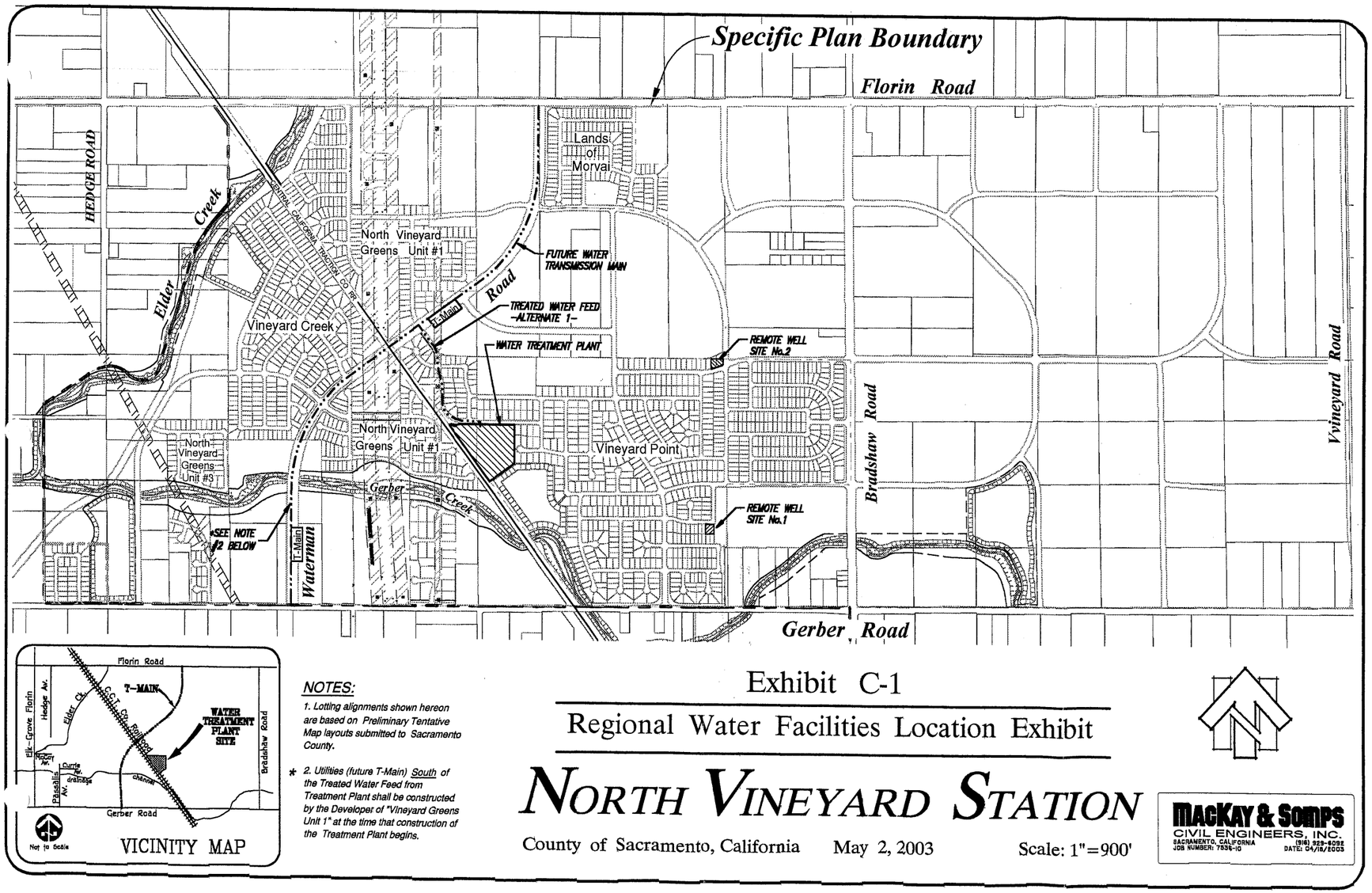


Plate D
Water Treatment Facilities – Alternate 2

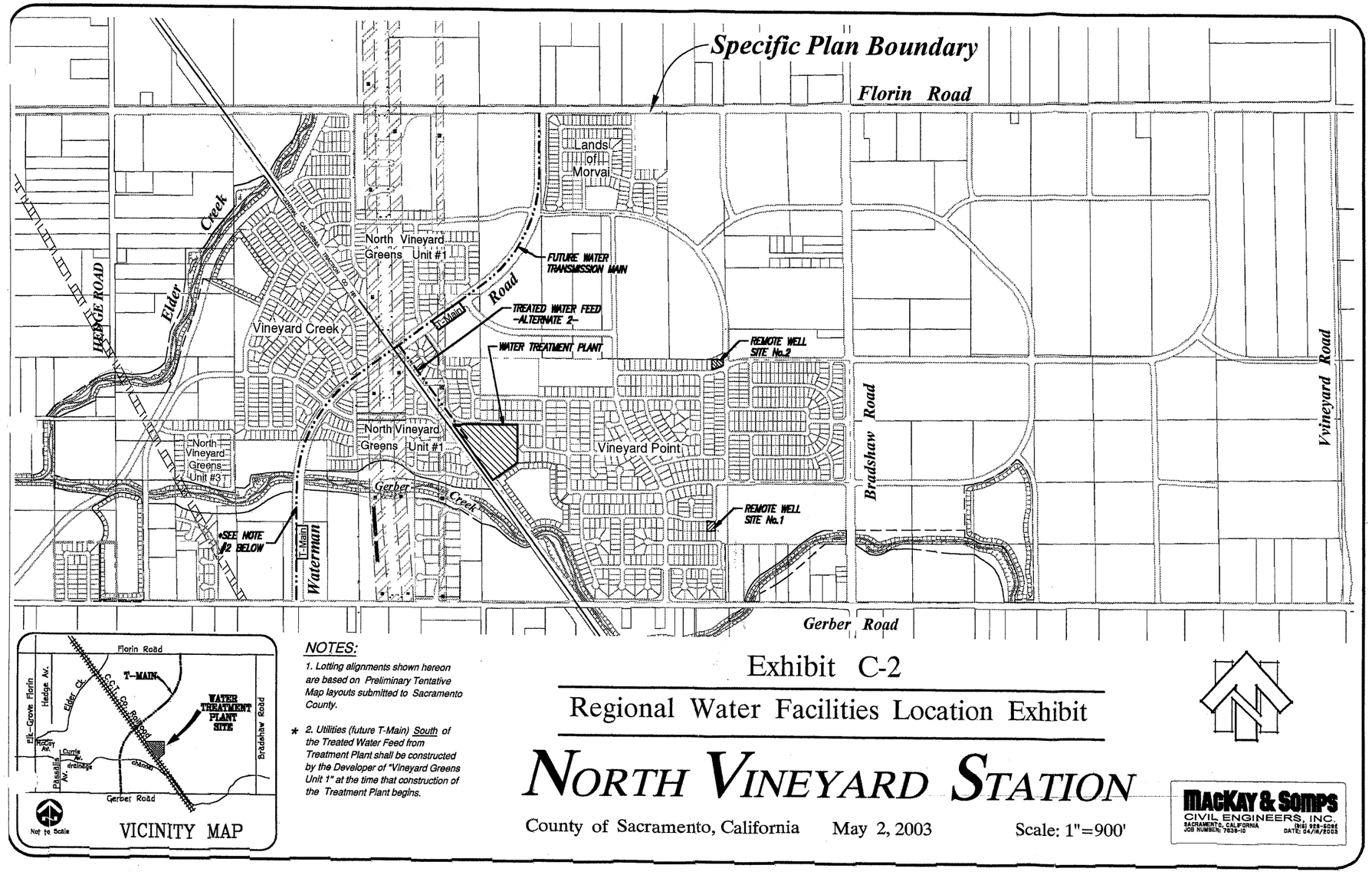
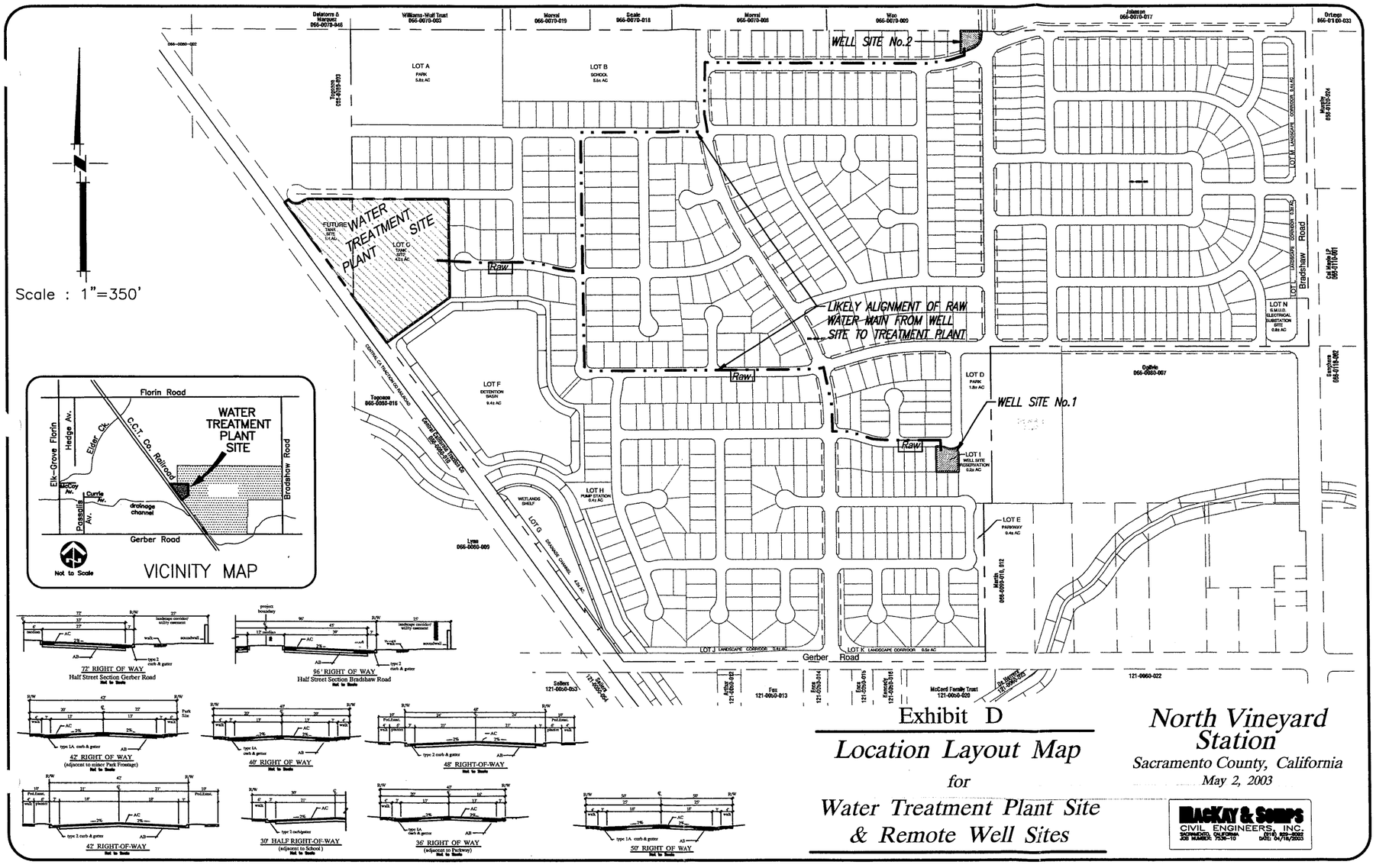


Plate E
Location Layout Map



VINEYARD CREEK SUBDIVISION (03-RZB-SVB-0385)

1. A **Rezone** of 104.8 gross acres from AG-20 to RD-5 residential-maximum 5 dwellings per acre (approximately 60.4 acres), RD-7 residential-maximum 7 dwellings per acre (approximately 18.2 acres), RD-10 residential-maximum 10 dwellings per acre (approximately 5 acres), RD-20 multi-family residential-maximum 20 dwellings per acre (approximately 7.5 acres), and O recreation (approximately 13.7 acres) (Plate F).

2. A **Vesting Tentative Subdivision Map** to create 390 total lots including: 377 residential lots, 1 park site lot, 3 open space lots, 1 detention facility lot, 2 future residential lots (5.0 acres of RD-10 and 2.1 acres of RD-5), 1 multi-family lot (7.0 acres), and 6 landscape corridor lots (Plate G).

3. A **Tentative Subdivision Map** to create 14 large lots from the same 104.8 acres for financing and marketing purposes (Plate H).

VINEYARD POINT SUBDIVISION (03-RZB-SDB-SVB-0293)

1. A **Rezone** of approximately gross181.8 acres from AG-20 to RD-5 residential-maximum 5 dwellings per acre (approximately 73.3 acres), RD-7 residential-maximum 7 dwellings per acre (approximately 80.1 acres), RD-10 residential-maximum 10 dwellings per acre (approximately 11.5 acres), RD-20 multi-family residential-maximum 20 dwellings per acre (approximately 6.9 acres), and O recreation (approximately 10.0 acres) (Plate I).

2. A **Vesting Tentative Subdivision Map** to a total of 769 lots – 754 residential lots, 1 multi-family lot, 1 park site lot, 1 pedestrian access lot, 1 school site lot, 1 water tank site lot, 2 well site lots, 1 detention basin lot, 1 drainage channel lot, 1 pump station lot, 1 SMUD site lot, and 4 landscape corridor lots (Plate J).

3. A **Tentative Subdivision Map** to create 14 large lots for the purposes of financing and/or phasing of the project (Plate K).

4. A **Special Development Permit** to allow deviations from various development standards of the North Vineyard Station Specific Plan and/or Zoning Code. Standards include public street frontage, lot area, lot width, lot depth, and setback (Plate L).

Plate F
Vineyard Creek – Rezone

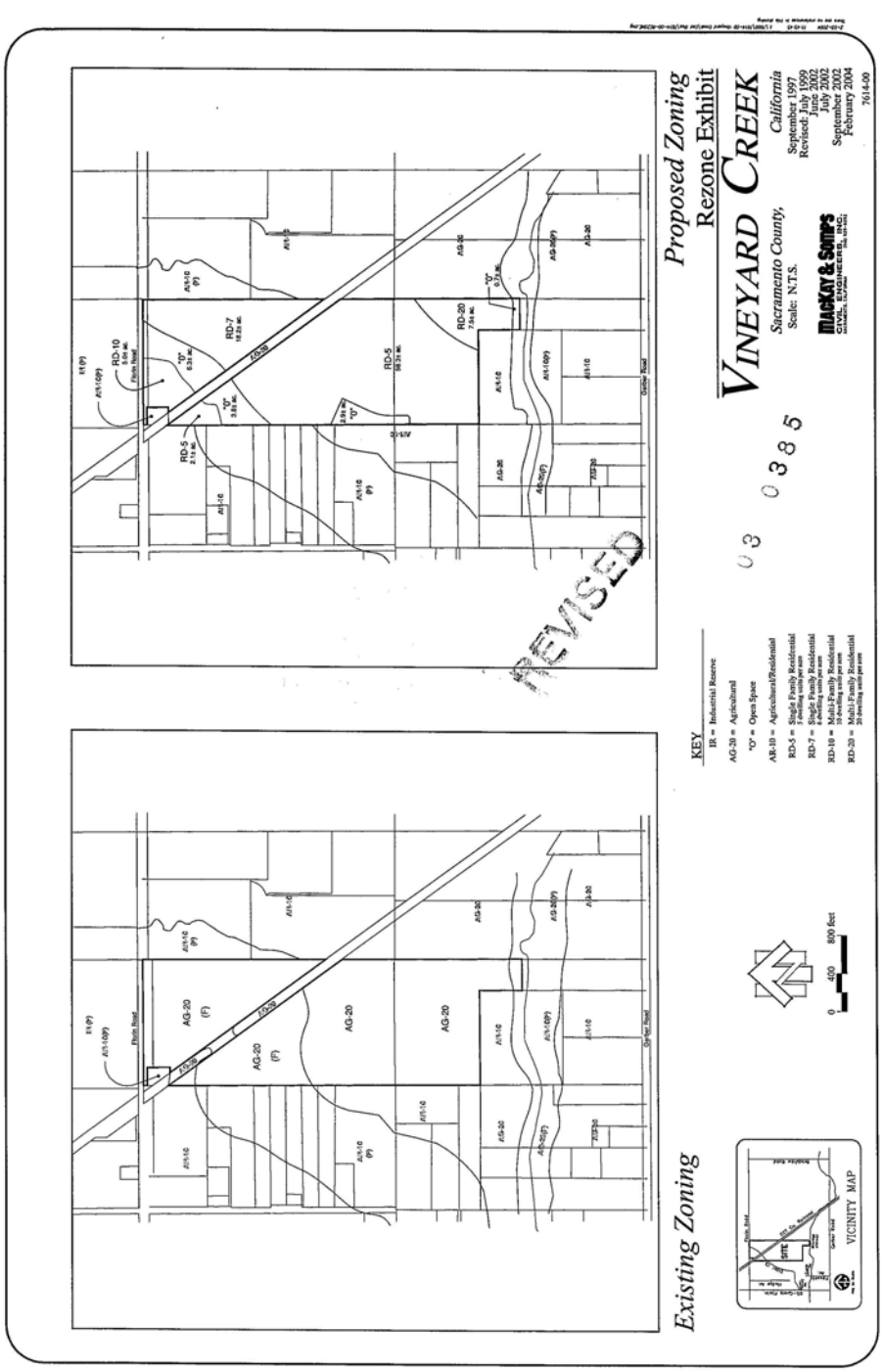


Plate G
Vineyard Creek – Tentative Subdivision Map

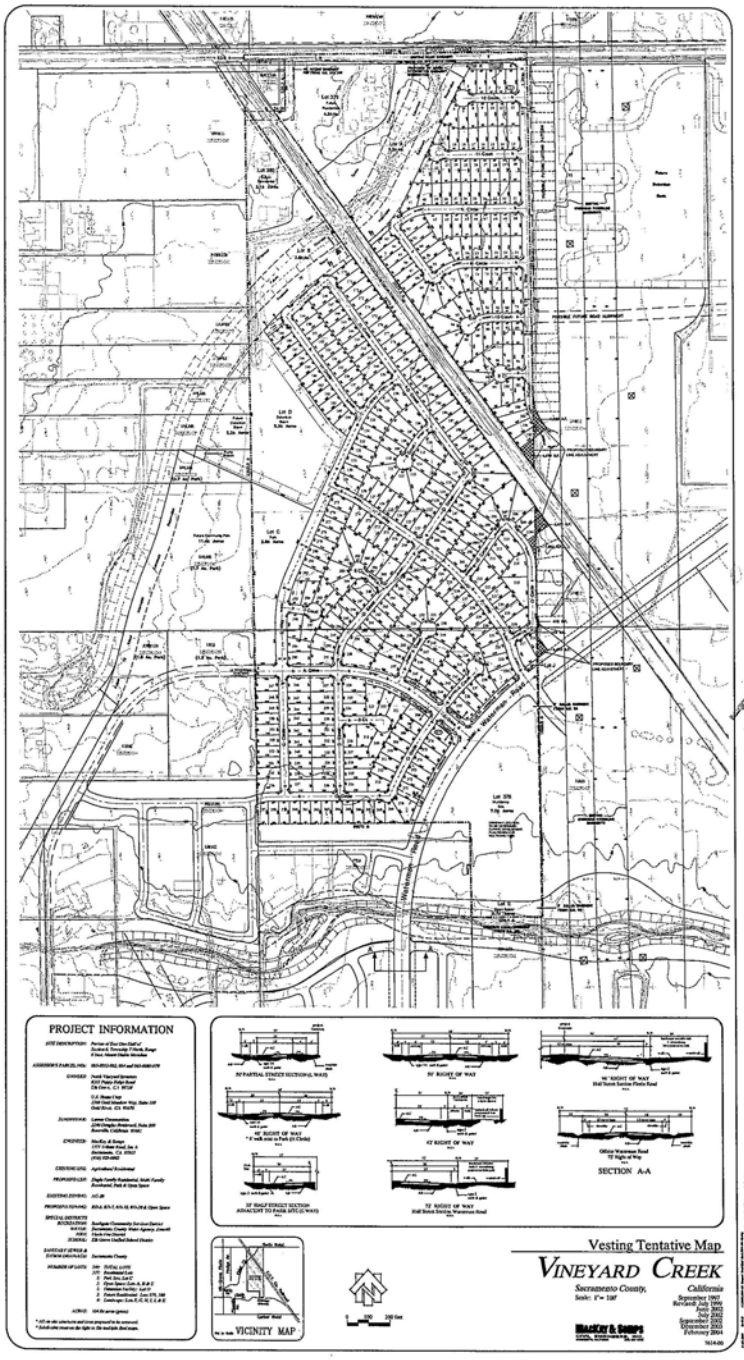


Plate H
Vineyard Creek – Large Lot Map

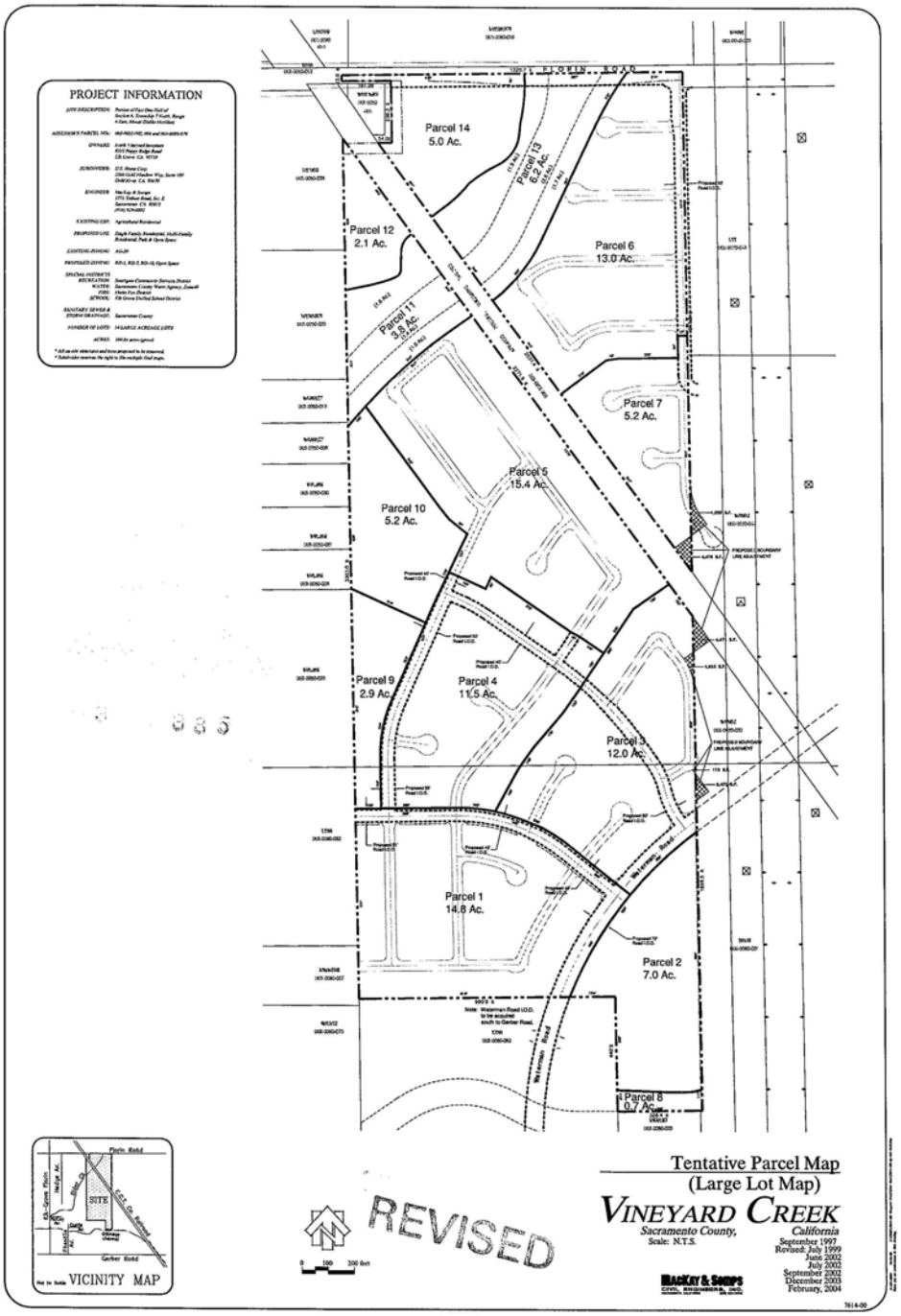


Plate I
Vineyard Point – Rezone

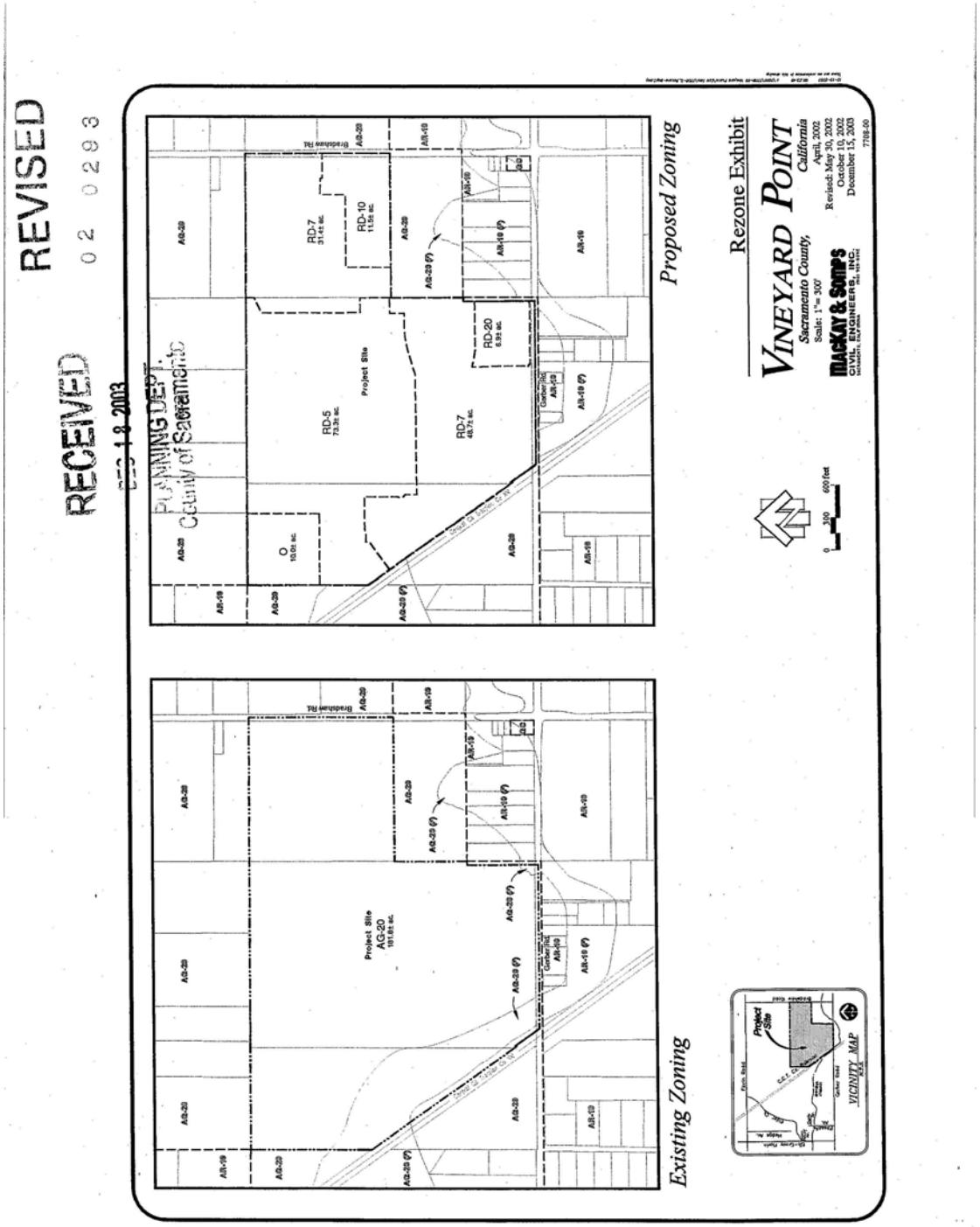


Plate J
Vineyard Point – Vesting Tentative Map

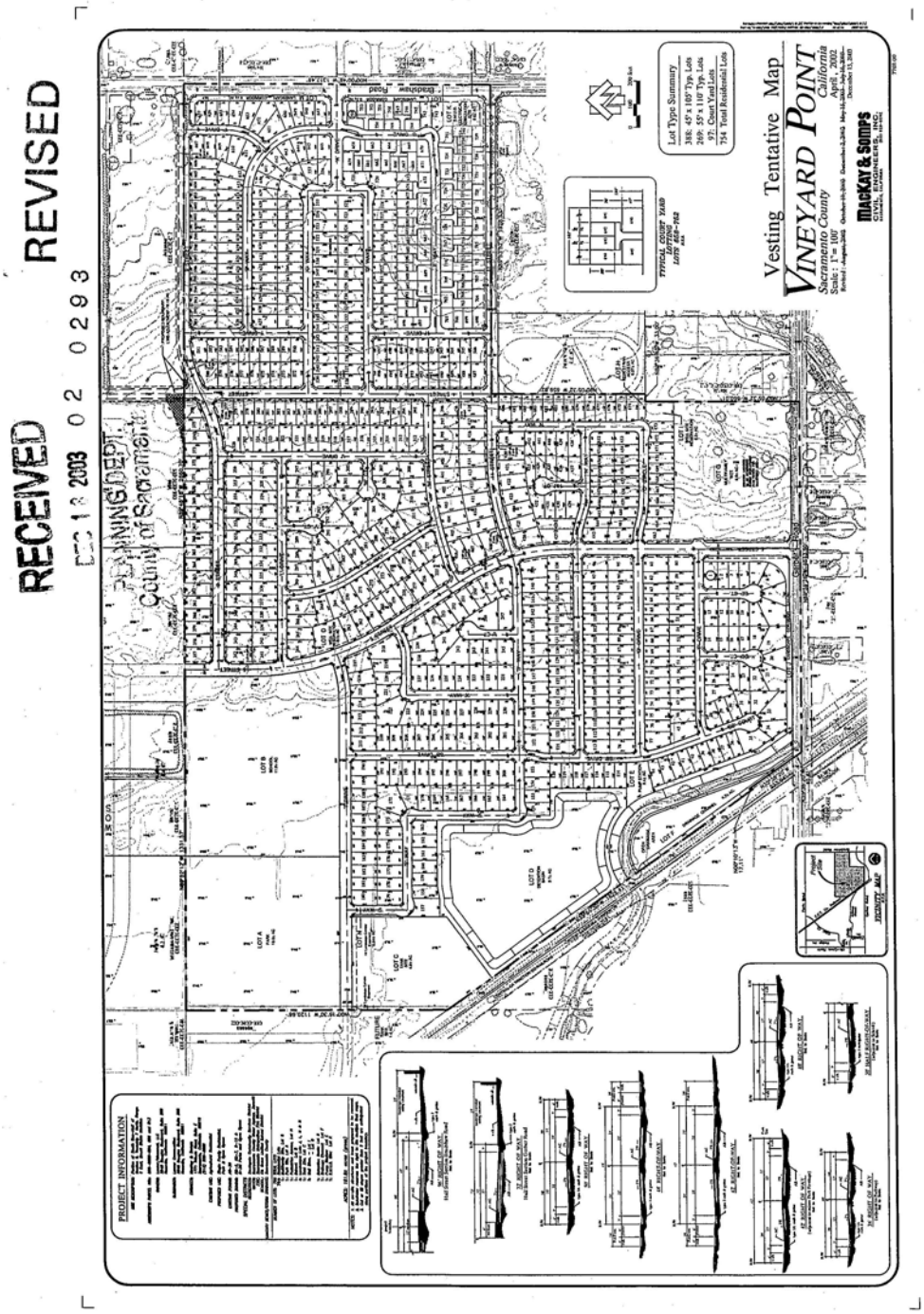


Plate K
Vineyard Point – Large Lot Map

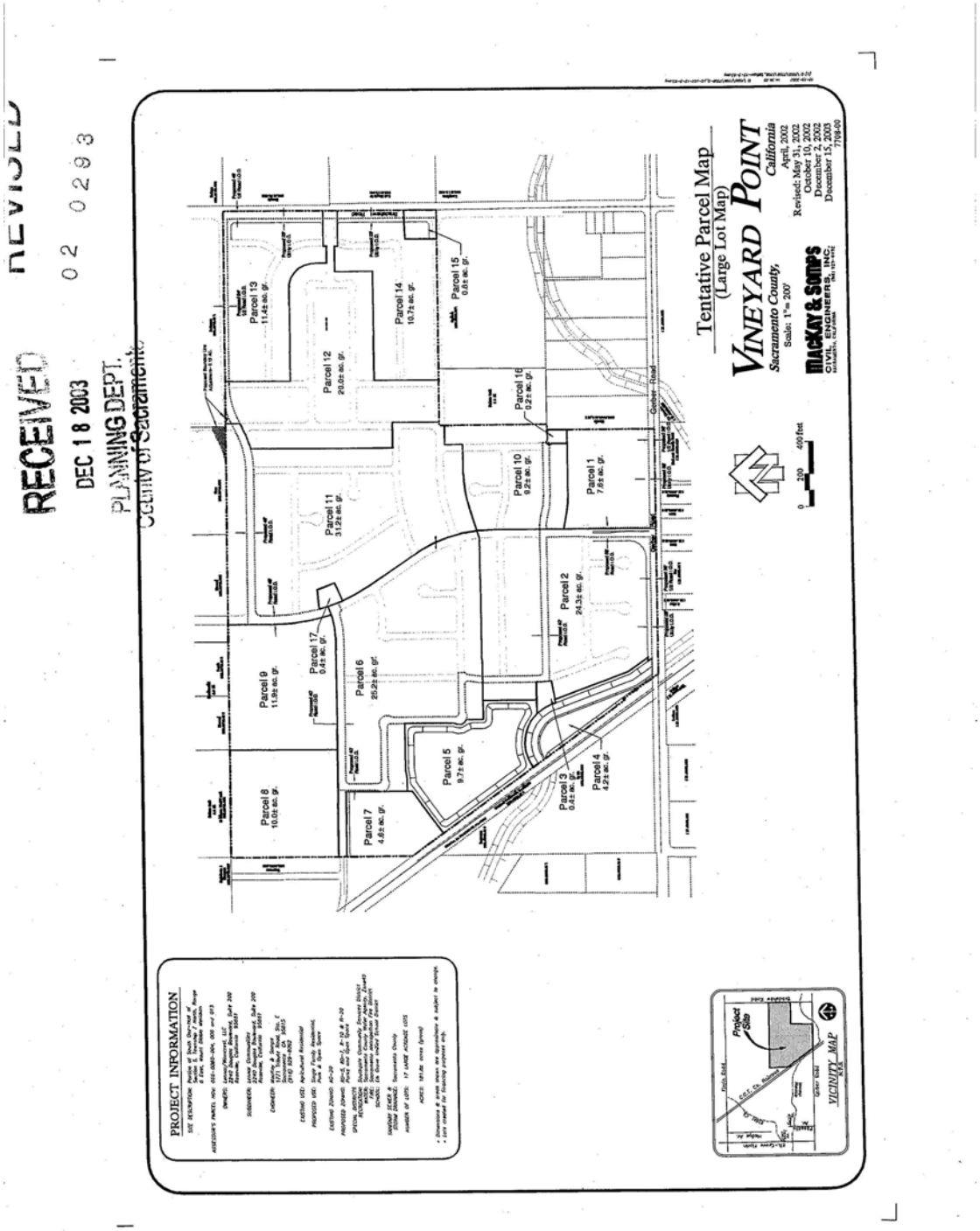
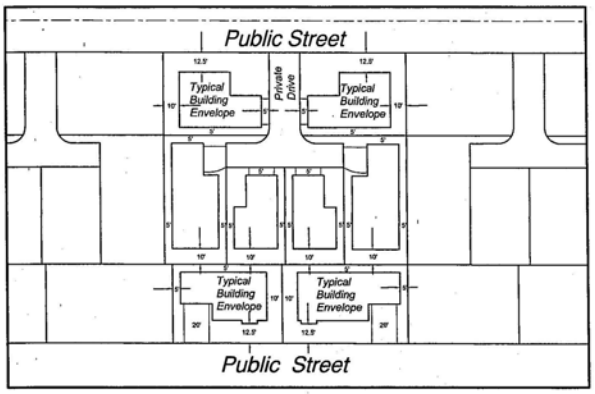


Plate L
Vineyard Point – Special Development Permit



02 0293

COURT YARD LOTS
RD-10
Scale: 1"= 40'

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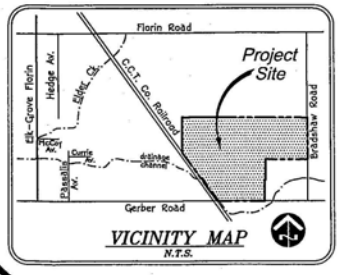
RESIDENTIAL DEVELOPMENT STANDARDS
(from North Vineyard Station Specific Plan)

	EXISTING	PROPOSED
	SFR/7-12	SFR/7-12
	RD-10	RD-10
LOT DIMENSIONS (min.)		
Area (sq. ft.)(1)	3,200	2,000
Area, Corner (sq. ft.)(1)	4,000	3,000
Width	35'	35'
Public Street Frontage(2)	30'	0'
Width, Corner(2)	45'	40'
Depth(3)	60'	55'
SETBACKS (min.)		
Front, Living Area (4) (5)	15'(6)	12.5'(6)
Front, Porch (5)	10'	10'
Front Garage (7)	20'(8)	5'
Side, Interior (4)	5'(9)	5'(9)
Side, Total Bldg Separation (9)	10'	10'
Rear, Living Area (4)	15'	15'
Rear, Ancillary Unit (10)	5'	5'
Detached Garage (11)	0'	0'

FOOTNOTES

(1) The minimum half-plex lot area is 3,000 sq. ft. for interior lots and 4,000 sq. ft. for corner lots. Half-plex lots have no minimum lot dimension requirements.
(2) The public street frontage for lots fronting on a curved street or the curved portion of a cul-de-sac or elbow may be measured along an arc located within the from 50 feet of the lot.
(3) The minimum lot depths listed herein supersede the minimum lot depth provisions in the Zoning Code.
(4) Architectural projections are allowed to extend two (2) feet into the required interior side yard and rear yard setbacks. Architectural projections are also allowed to extend two (2) feet into required 20-foot front yard setbacks. Architectural projections include eaves, bay windows (cantilevered and extending from the foundation), fireplaces, media bays, and architectural box-outs. Rear yard projections are allowed pre Zoning Code, Section 305-02 (b).
(5) Vehicular visibility requirements must be met.
(6) May be reduced to 10 feet where adjacent to detached sidewalk.
(7) Where swing driveways are used, the front yard garage setback may be reduced to 15 feet.
(8) Driveway length may be reduced to 19 feet where automatic roll-up doors are used.
(9) Zero-lot line units are permitted where the total building separation requirement is met.
(10) Ancillary units have the same front, side, and street sideyard setback requirement as the primary unit. If attached, the required rear yard is the same as for the primary unit. If detached, the separation from the primary unit is governed by the Uniform Building Code and the Uniform Fire Code. Ancillary units may be placed above attached or detached garages. One (1) on-site parking space is required per unit in addition to the two (2) garage and two (2) driveway spaces required for the primary unit.
(11) Side and rear setback dimension.
(12) Refer to Sacramento County Zoning code for applicable lot dimensions and building setbacks.

Special Development
Permit Exhibit



VINEYARD POINT
Sacramento County, California
Scale: 1"= 40'
April, 2002
Revised: December 15, 2003

MACKAY & SOMPS
CIVIL ENGINEERS, INC.
SACRAMENTO, CALIFORNIA (916) 929-6092
7708-00

PUBLIC FACILITIES FINANCING PLAN (02-PWE-0532)

The Public Facilities Financing Plan sets forth a strategy to finance the backbone infrastructure and other public facilities required to serve the proposed land uses in the North Vineyard Station Specific Plan (NVSSP). The strategy proposed is designed to be flexible enough to accommodate the development plans of a diverse set of multiple NVSSP property owners, while assuring the County of Sacramento that the required facilities are constructed when necessary. The Financing Plan includes a combination of existing fee programs, the development of the North Vineyard Station Fee Program (NVSFP), the possible use of Mello-Roos bond financing, and other funding mechanisms.

ENVIRONMENTAL SETTING

The North Vineyard Station Specific Plan (NVSSP) area includes several existing land uses including 13 residences, the 20-acre Bradshaw Golf Center, a convenience store/gas station/bar at the northwest corner of Bradshaw and Gerber Roads, a feed store, an equestrian center on Bradshaw, and a small nursery on Gerber Road. Other existing land uses include five separate easements that contain high voltage power lines, and the out of service 100-foot-side Central California Traction Railroad (CCTR) right-of-way traversing the NVSSP.

The NVSSP project area is predominantly utilized for agricultural-residential uses, with some urban development within the surrounding Vineyard area. Grassy fields and pastures characterize the project site. There are a number of single-family dwellings located within the planning area, along with barns and other outbuildings. The small amount of agricultural activity that occurs is generally limited to dry farming. Over the years, the majority of the site has been subdivided into parcels of one-half to thirty acres in size.

There are several existing commercial sites with the Plan Area, including the Bradshaw Golf Center occupying a 20-acre parcel on the west side of Bradshaw Road. There is also a convenience store/gas station/bar at the northwest corner of Bradshaw and Gerber Roads, a feed store and an equestrian center on Bradshaw, and a small nursery on Gerber Road.

Other existing land uses include five separate easements that contain high voltage power lines, with four truss tower transmission lines, a wood pole line and a steel pole line. The easements traverse the western side of the Plan area, oriented in a north-south direction. The Central California Traction Railroad owns a 100-foot wide right-of-way traversing the Plan area diagonally in a northwest-southeast direction. The tracks have been taken out of service.

Elder Creek and Gerber Creek flow through the Plan area. Elder Creek forms the northwestern boundary of the Plan area and has a watershed of approximately 5,000

acres at its confluence with Gerber Creek at the western boundary of the Plan area. Approximately 500 acres of that shed are within the boundary of the Plan area. Gerber Creek has a drainage area of approximately 3,100 acres, approximately 960 acres of which are within the plan area. The creek crosses Gerber Road several times, flowing in and out of the Plan area before draining into Elder Creek at the western boundary of the Plan area.

There are five categories of wetlands and waters of the United States within the Plan area, including vernal pool, seasonal wetland, freshwater marsh, drainage swale, and perennial creek, totaling approximately 51 acres. Stock ponds also occur in several locations within the Plan area.

The Plan area vegetation is characterized primarily by annual grasses and forbs. Very few native woody plant species occur, except for where water is at or near the surface. Following are descriptions of the principal terrestrial habitats within the Plan area:

The dominant habitat type in the Plan area is non-native annual grassland. These areas are typically not irrigated and occur in several forms including historically disturbed fallow ground, dry pasture (primarily used for cattle and horses), and “buffer” areas along r~~9~~oads and near houses. Flood irrigation of pastures occurs during the dry months in many parts of the Plan area. Plant species (forage) consists of a mixture of typical dryland species, as well as many species that occupy the margins of wetlands.

Numerous trees are scattered throughout the Plan area, typically associated with homesites or situated along fence lines. Predominant species are eucalyptus, black walnut, and fruitless mulberry. Other species include Italian stone pine, catalpa, Modesto ash, box elder, Japanese black pine, silver maple, London plane, weeping willow, and Monterey pine. Most of the vegetation around the residences consists of ornamental species.

PROJECT LOCATION

NORTH VINEYARD SPECIFIC PLAN AREA

The NVSSP planning area is located in the south-central unincorporated area of Sacramento County, at the western edge of the Vineyard community. The City of Sacramento’s Central Business District is located approximately eleven miles to the northwest. The Plan Area lies entirely within Sections 4 and 5 of Township 7 North, Range 6 East and within the USGS Elk Grove quadrangle map.

The Plan Area encompasses 1,590± acres of the Vineyard Community Planning Area. The Plan Area is bounded by Florin Road to the north, Gerber Road to the South, the northerly extension of the Vineyard Road on the east, and generally by Elder Creek’s north and south forks. Bradshaw Road transects the Plan Area in a north/south

alignment. The right-of-way of the Central California Traction Railroad transects the western portion of the planning area.

WATER TREATMENT FACILITY

The 6-acre site is located on the east side of the Central California Traction Railroad tracks, approximately 100 feet north of Gerber Road.

VINEYARD CREEK

The property is located on the south side of Florin Road, 1,300 feet east of Hedge Avenue, in the Vineyard community.

VINEYARD POINT

The property is generally located on the north side of Gerber Road and the east side of the Central California Traction Railroad, in the Vineyard community.

PROJECT OBJECTIVES

The overall goal of the North Vineyard Station Specific Plan is to provide for the orderly and systematic development of the planning area through the establishment of a comprehensive planning program that is consistent with the Sacramento County General Plan and to respond to opportunities and constraints in the local community area. The North Vineyard Station Land Use Plan has been developed in accordance to this objective and compliance with adopted goals, policies and diagrams of the Sacramento County General Plan, as adopted December 15, 1993. Staff from the Planning Department assisted the North Vineyard Station Citizens Advisory Committee (CAC) in the formation of a development strategy to characterize the type and form of development within the study area. This development strategy was articulated in the form of guiding principles. These principles were developed to ensure that a high quality land use plan would be developed to provide for the orderly and systematic development of the planning area that meets the objectives of the General Plan. These principles are as follows:

1. Plan, develop and maintain a comprehensive, balanced, integrated, safe and efficient transportation system to ensure mobility for all residents.

2. Promote efficient traffic patterns and effective levels of transit service, which connects the project area to surrounding neighborhoods and provide access to larger market areas throughout the County while minimizing congestion on residential streets.

3. Prepare a Comprehensive Drainage Master Plan to mitigate the threat of flooding within the project area.

4. Provide and maintain an adequate level of public services to the project area including water, sewer, parks, schools, police, fire and library services.

5. Promote the location of desirable~~s~~ land uses to minimize land use compatible conflicts.

6. Locate desirable future land uses to maximize the opportunity to create an overall pattern of planned orderly development containing a system of land use adequately and sufficiently served by a balanced system of transportation and community services and facilities.

7. The project area should have a center focus that combines commercial, civic, cultural and recreational uses.

8. As many activities as possible should be located within easy walking distance of transit stops or within core area.

9. All Planning Should be in the form of complete and integrated communities containing housing, shops, work places, parks and civic facilities essential to the daily life of the residents.

10. Provide a diversity of housing types to enable citizens from a wide range of economic levels and age groups to live within the area.

11. Encourage a housing production mix the sizes, types and price range of units and allow for innovative housing construction technologies to provide amenities requested by area residents, including large garages and larger homes.

12. Provide a well defined edge, such as agricultural green belts or wetland corridors, and avoid urban encroachment to such areas.

13. Allow for agricultural residential use as a buffer between urban areas and agricultural or constrained areas such as floodplain and wetland resource areas.

14. The area should contain an ample supply of specialized open space in the form of squares, greens and parks whose frequent in encouraged through placement and design.

15. Provide opportunities for open space, recreation and visual relief by planning for parks, trails and parkways. Establish a loop trail that encircles the area and promote open space and recreation use of the areas creeks and sloughs.

16. Whenever possible, the natural terrain, drainage & vegetation of the area should be utilized in conjunction with parks, greenbelt & open space.

17. Counter increasing crime/perception of crime through design improvements and crime prevention activities to increase the safety of residents, business,

employees and customers and to maintain and promote neighborhood patronage.

18. Incorporate crime prevention techniques in the urban design of all new developing area within the community. Development plans shall address crime prevention measures including increased visibility and interaction between uses

19. Encourage the concentration ~~i~~of employment and activity centers, particularly in relation and proximity with higher density residential areas, in order to facilitate shorter distances and the use of non-auto modes of travels.

20. Streets, pedestrian paths and bike paths should contribute to a system of fully connected routes to all destinations. Their design should encourage pedestrian and bicycle use by being small and spatially defined by buildings, trees and lighting.

21. Establish development standards that foster compatible design solutions and are aimed at improving how new development projects will fit into the area with the overall intent of defining the area's character.

22. Ensure that a Public Infrastructure Plan and Infrastructure Financing Plan is adopted, as a component of the Specific Planning program, Prior to the occurrence of any new urban development within that area.

23. Public facilities constructed and completed timely with the constru~~i~~ction of new residential projects.

24. Improve the quality of life for current and future residents of the project area by ensuring that adequate level of public services are provided.~~;~~

INTENDED USE OF THE EIR

The SEIR will be used as an informational document to the public and by the Sacramento County Subdivision Review Committee, Policy Planning Commission and Board of Supervisors in evaluating the proposed project and rendering a recommendation or decision to approve, or deny the proposed project.

In addition, the EIR will be used as an informational document to the public and by other responsible agencies including, but not limited to: the California Department of Fish and Game, Regional Water Quality Control Board, U.S. Corps of Engineers, U.S. Fish and Wildlife Service, and the Board of Directors for: the Sacramento County Water Agency; the Sacramento Regional County Sanitation District; and the County Sanitation District No. 1.

4 LAND USE

BACKGROUND

The NVSSP area consists of approximately 1,595± acres. The Specific Plan provides a comprehensive plan for development of an area that was designated for Urban Growth by the Sacramento County General Plan. It refines the policy direction provided by the General Plan and replaces or supplements the Zoning Map and regulations. The Plan includes development standards and zoning to address the unique situations within the Plan area, sets forth a Land Use Diagram for future development, and contains programs for the provision of public facilities. As such, the Plan serves as a policy and regulatory document, with policy direction and project development concepts consistent with the County's General Plan. The current project is an amendment to the previously approved 1998 plan.

The prior Final EIR for the North Vineyard Station Specific Plan (certified on August 12, 1998; County Control Number: 93-SFB-0238) summarized impacts to land use in the following manner:

> "The County General Plan Land Use Element recognizes that the demand for land has created a number of problems in Sacramento County. These problems include an increased consumption of open space, deteriorating air quality, decrease in housing affordability, degradation of public facilities, and increase in traffic congestion. The General Plan also notes that efficient land and resource use in Sacramento County can best be achieved by being committed to a mitigating pattern of land use that concentrates development in configurations designed to protect valuable agricultural lands, conserve natural resource areas, reduce automobile travel distances and related air pollution, as well as conserve energy, and enhance the efficient provision of infrastructure and services.
>
> The Preferred Plan and Alternatives may not meet several General Plan goals, objectives and policies which are intended to maximize efficiency in land use and improve community identity as the projected growth needs of the County are accommodated during the 20-year planning horizon. The densities and land use patterns proposed are similar to the low density development typical of other suburban communities. The Preferred Plan and Alternatives are land consumptive and auto-oriented, which tends to exacerbate traffic and air quality impacts; however, these impacts were acknowledged during the update of the County General Plan when the subject Specific Plan area was designated for growth. In order to minimize further environmental degradation, it is essential that the projected growth needs of the General Plan are met within approved urban growth areas. If the designated growth areas are not developed to their full potential, direct, adverse physical impacts to the environment could occur

> through the further loss of agricultural lands and open space/natural habitat areas.
>
> In conclusion, potential land use compatibility impacts associated with holdover agricultural-residential or general agricultural uses located both within and just outside the Urban Development Area ***can be mitigated to less than significant levels*** through implementation of General Plan policies, proposed Specific Plan policies and established Zoning Code development standards.
>
> Land use impacts resulting from non-compliance with General Plan goals, objectives and policies are considered ***potentially significant and adverse.*** Mitigation of potential land use impacts to a less than significant level would require redesign of the Plan are to be consistent with the intent of the General Plan for new growth areas. "

This Supplemental EIR focuses on land use impacts associated with the proposed amendments to the Specific Plan, the adoption of new land use policy, and the development of land within the Specific Plan Area.

SPECIFIC PLAN AMENDMENTS

The proposed amendments to the NVSSP consist of a slight increase in residential density, as well as designating the drainage parkway corridor. The residential density adjustments result in an overall holding capacity increase from 5,732 dwelling units to 6,063 dwelling units, or about a 6% increase.

The increase in density is in response to the need for more affordable housing sites within the County, as outlined in the current General Plan Housing Element Update process. Legal Services of Northern California challenged the May 2002 vacant land inventory, suggesting that there is a lack of vacant multi-family land of suitable size and location to accommodate very low and low-income housing within the unincorporated area of the County. The vacant land inventory acknowledges that there is an inadequate supply of multi-family zoned land to met the demand for very low and low-income housing needs identified in the Regional Housing Needs Assessment.

The Sacramento County Planning and Community Development Department (Planning Department) has identified the need to create more multi-family land (multi-family development is generally seen as the most feasible way for meeting the affordability index) to ensure a viable affordable housing program through the new community and specific plans now being processed. New development areas are seen as offering the best opportunity to accommodate affordable housing needs. The Planning Department is working with communities and development interests to identify more multi-family land within the Florin-Vineyard Gap Comprehensive Plan, the Elverta Specific Plan, and the North Vineyard Station Specific Plan.

The proposed Affordable Housing Program, the implementation tool for the Housing Element policies, is currently in the draft stage. The Affordable Housing Program is being developed by the Planning Department and the Sacramento Housing and Redevelopment Agency (SHRA) with significant input from affordable housing stakeholders which includes market rate residential developers and builders, affordable housing builders, and affordable housing advocates.

The primary scope of the Affordable Housing Program is that all new residential development in the unincorporated county will be required to provide affordable housing and the goal is to have 15% of all new housing units constructed to be affordable to targeted low-income groups. As originally proposed, the Housing Element update Policy HE-45 had called for a 10% affordability factor; however the Policy Planning Commission has recommended a 15% affordability factor and the current Draft Affordable Housing Program has followed through with a 15% requirement.

The June 2004 Draft Affordable Housing Program currently states:

> ***Scope:*** ***All new residential construction in the unincorporated county will contribute to affordable housing.***
>
> - *The affordable units will be within the same growth area (e.g., specific plan. Community plan) as the market rate housing.*
> - *New construction seeking tentative subdivision maps,parcel maps, zoning of rezoning, and multifamily development plan review are subject to the program's requirements.*
> - *The market rate developer may choose between land dedication and construction to meet the affordable housing obligation. If the County determines there are no viable sites for land dedication, the market rate developer may also choose to pay an in-lieu fee.* (June 23, 2004)

In anticipation of this requirement, the applicants for the NVSSP are attempting to meet affordable housing component by increasing multi-family residential sites in three areas of the Plan effectively adding 439 more multi-family units for a total of 1,119 units on 65 acres. In addition, another site has been redesignated as medium-density residential (7 to 12 units per acre), adding another 122 units for a total of 309 medium density units on 32.7 acres for development as possible affordable units. These increases in higher density units are offset by slightly fewer single-family units, resulting in a net increase of 331 units for the NVSSP area for a gross holding capacity of 6,063 units on 1,595 acres. This represents just under a 6% increase in units in the Plan area from the previously approved 5,732 units.

Realizing that some of the multi-family and medium density sites will be developed for market rate housing, the applicants have proposed the following amendment to the NVSSP policies in order to encourage additional affordable housing opportunities:

"In order to increase opportunities to provide affordable housing projects within the Plan Area which address the needs of low or very low income individuals or families, affordable Multifamily Residential ("MFR") housing projects otherwise allowed as set forth in Section 4.4 of this Plan shall be an allowed use in any residential land use designation of the Plan provided that 1) at such time as a landowner applies for a small lot tentative subdivision map, such application clearly designates any property for which such affordable multifamily housing project is intended, and 2) such application clearly states that such site is proposed for dedication to the Sacramento Housing and Redevelopment Authority (SHRA) for such purpose. If a small lot tentative subdivision map is approved which does not meet either of the requirements in the foregoing sentence, no multifamily project shall be permitted thereon unless it is located on land designated "MFR" on the Land Use Diagram of this Plan.

In the event a landowner agrees to dedicate a site to SHRA for development of an affordable housing project, the landowner shall be entitled to receive a density bonus on its remaining property comprising the subject tentative subdivision map for the housing units otherwise lost due to the dedication."

The following language would be inserted towards the end of Section 604.13(A) of the Zoning Ordinance for the North Vineyard Station Specific Plan:

3. Uses permitted in the RD-25 residential land use zone shall also be permitted in the RD-1, RD-2, RD-3, RD-4, RD-5, RD-7, RD-10, RD-15, and RD-20 residential land use zones provided that (1) such use shall only be permitted if the site on which the RD-25 use is proposed is designated within and in conjunction with the approval of a small lot tentative subdivision map, <u>and</u> (2) the application for such tentative map clearly states that such site or the applicable portion of such site, is proposed for dedication and the approved tentative subdivision map shall include a condition requiring that such site or portion thereof be dedicated to the Sacramento Housing and Redevelopment Authority ("SHRA") for development of an affordable housing project.

   In the event that a landowner agrees to dedicate a site to SHRA for development of an affordable housing project, the landowner shall be entitled to receive a density bonus on its remaining property comprising the subject tentative subdivision map for the housing units otherwise lost due to the dedication.

VINEYARD CREEK AND VINEYARD POINT SUBDIVISIONS

Two separate subdivision maps and rezone projects are proposed along with the Specific Plan modifications. The Vineyard Creek project is a request for a Rezone from AG-20 to RD-5, RD-7, RD-10, RD-20, and O; and a tentative Vesting Subdivision Map to create 390 total lots including: 377 residential lots, one park site, three open space

lots, one detention facility lot, two future residential lots, one multi-family lot, and six landscape corridor lots. The project site is currently designated as an Urban Development Area by the Sacramento County General Plan, and for single-family residential (3-5 units per acre), single family residential (4-7 units per acre), medium-density residential (7-12 units per acre), multi-family residential (12-22 units per acre), and open space (O) uses by the amended North Vineyard Station Specific Plan.

The Vineyard Point project is a request for a Rezone from AG-20 to RD-5, RD-7, RD-10, RD-20, and O; and a tentative Vesting Subdivision Map to create 769 total lots including: 754 residential lots, one park site, one pedestrian access lot, one school site lot, one water tank site lot, two well site lots, one detention facility lot, one drainage channel lot, one pump station lot, one SMUD site lot, and four landscape corridor lots. The project site is currently designated as an Urban Development Area by the Sacramento County General Plan, and for single-family residential (3-5), single family residential (4-7), medium-density residential (7-12), multi-family residential (12-22), public services, and open space (O) uses by the amended North Vineyard Station Specific Plan.

IMPACTS AND ANALYSIS

INCREASED DENSITY OF PLAN

The increase in the number of units in the Plan area does not affect the planned infrastructure for the NVSSP as is discussed in subsequent sections of this SEIR. In fact, the increased holding capacity bring the Plan in line with the original Preferred Specific Plan for 6,339 units as analyzed in certified Final EIR in 1998.

The addition of units from the density bonus program should not have a significant effect on the Plan Area. Historically, in Sacramento County, most development does not occur at the zoned maximum densities. Typically developments tend to net 75% to 90% of their holding capacity. Those applicants that choose to participate in the density bonus program would more than likely exceed their unit allocation. However, this would be offset by those properties that develop conventionally with results under their allocated units. Furthermore, efficient use of land, which has urban services, that steers development pressures from the urban fringe areas is considered environmentally superior.

PROPOSED SUBDIVISION MAPS

SPECIFIC PLAN CONSISTENCY

The proposed land use designations for the Vineyard Creek Subdivision are consistent with the amended North Vineyard Station Specific Plan Land Use Diagram. In addition to land use designations, the NVSSP contains a dwelling unit cap of 6,063 units. This

cap is enforced via the Specific Plan Allocation Table 4.1.2, which contains a cap on the number of dwelling units that can be developed on specific parcels within the NVSSP area. The dwelling unit allocation for the single-family residential area is 400. The NVSSP requires development at density of no less than 75% of the unit allocation, in this case 300 units. The applicant is proposing the creation of 377 single-family lots (94% of the maximum). Vineyard Creek is, therefore, consistent with the density requirements of the NVSSP.

The proposed land use designations for the Vineyard Point Subdivision are consistent with the amended North Vineyard Station Specific Plan Land Use Diagram. The dwelling unit allocation for the single-family and medium-density residential area is 855. The NVSSP requires development at density of no less than 75% of the unit allocation, in this case 640 units. The applicant is proposing the creation of 754 residential units (88% of the maximum). Vineyard Point is, therefore, consistent with the density requirements of the NVSSP.

The NVSSP contains the following policies regarding residentially designated areas:

1. Preserve the integrity of existing neighborhoods by preventing the encroachment of incompatible land uses and associated activities (e.g., excessive through traffic).

2. Rear and side yards shall face streets designated as Arterial and Thoroughfare streets on the Circulation Plan. Subdivisions shall be separated from Arterial and Thoroughfare streets by landscaped areas, sound walls, fences, and/or berms that conform to the Design Guidelines included in this Plan.

3. Subdivisions shall be designed in order to reduce through traffic; however, multiple linkages for pedestrians and bicyclists are encouraged.

4. Residential subdivisions shall be designed to facilitate pedestrian and bicycle travel.

5. Design and architecture of proposed residential projects should consider the Design Guidelines included in the Specific Plan.

6. Private open space and recreation amenities that will meet the needs of the resident population shall be provided in multi-family residential projects.

7. Residential lotting patterns should promote opportunities for public access into public open spaces. Parks and other community open spaces should be accessible at points along the street systems.

8. Residential subdivisions shall be designed to facilitate surveillance of parks and open space areas by residents and Sheriff patrols.

9. Single Family and Medium Density Residential dwellings shall have frontage on, and driveway access to, Collector Streets only in accordance with average daily traffic counts described in Section 7.5.1.

10. Provide a range of land use densities within newly developing areas to enhance community vitality and create a mix of lot and housing types.

11. Variation of housing within neighborhoods is encouraged, provided the mix is architecturally compatible.

12. Long stretches of backup lots along parkways and drainage/creek corridors should be discouraged. The use of front on streets, side yard lotting patterns and open-ended cul-de-sacs are appropriate.

13. Provide adequate buffering within the urban-residential areas where adjacent land uses differ significantly. Appropriate buffering techniques include larger lots, additional setbacks, landscape corridors or any appropriate combination.

The NVSSP also contains residential development and design standards. The proposed project would be expected to comply with the standards set forth in the NVSSP. The proposed project appears to be generally consistent with the policies listed above.

The other land use proposed on the project sites is Open Space. The NVSSP contains the following policies regarding Open Space:

1. Storm drainage in open space areas shall be by means of natural or natural-appearing stream courses, rather than closed culverts, except where in conflict with other planned facilities.

2. Except where wetlands mitigation, drainage channel, or stormwater detention construction is proposed and where necessary to prevent erosion, grading and construction shall be prohibited in designated open space areas. In instances where grading is permitted, the minimum necessary shall be allowed.

3. Pedestrian and bicycle trails and pathways are encouraged within open space areas to the extent possible. Such facilities shall be located and designed to minimize disturbance of natural features.

4. To the maximum extent feasible, uses abutting Open Space shall be oriented and designed to permit surveillance of these areas in order to discourage unlawful activities.

5. Where residential development abuts Parkways and Drainage Parkways, fences shall adhere to the following design: six (6) feet in height, consisting of three (3) feet of wrought iron on top of three (3) feet of masonry wall.

Again, the NVSSP contains further guidelines regarding the development of open space. The guidelines vary depending on the specific type of open space proposed. Several types of open space are proposed on the subject site, including a park, drainage parkway, and storm water detention. Project development would be expected to comply with specific requirements contained in the NVSSP associate with each of the proposed open space areas. The projects appear generally consistent with the Open Space Policies contained in the NVSSP.

ZONING CONSISTENCY

Both the Vineyard Creek and Vineyard Point sites are currently zoned AR-20 for agricultural uses on minimum 20-acre lots. Approval of the proposed zoning change from AG-20 to various residential and open space zones would allow substantially more intensive uses than could otherwise be developed pursuant to the existing zoning. Potential impacts due to the intensification of land uses, including land use conflicts and growth inducement, were analyzed in the Final EIR for the North Vineyard Station Specific Plan. The FEIR pointed out that although the Plan Area and much of the surrounding properties are currently zoned for agricultural-residential and general agricultural uses, the conversion of this land for urban development was committed during the General Plan approval process and the related land use impacts were also acknowledged at that time.

The evolution of the project area from rural setting to an urban one will result in some inherent land use conflicts that, albeit temporary in some situations, could last for several years. Those residents choosing to maintain a rural lifestyle will feel the pressures of encroaching urbanization, while some urban dwellers may find adjacent agricultural practices to be annoying. Some small scale farming operations may find some of their activities will have to be curtailed or substantially modified in order to mitigate impacts to adjacent urban uses. Conversely, urban uses can bring undesirable influences to agricultural uses such as trespass, vandalism, domestic pets, and traffic congestion.

The previous EIR concluded that potential land use compatibility impacts associated with holdover agricultural-residential or general agricultural uses located both within and just outside the Urban Development Area can be mitigated to less than significant levels through implementation of General Plan policies, proposed Specific Plan policies, and established Zoning Code development standards.

CONCLUSION ON LAND USE IMPACTS

The proposed developments are generally consistent with the General Plan, North Vineyard Station Specific Plan, and the Sacramento County Zoning Code. The proposed amendments to the Specific Plan are in response to a need throughout the unincorporated County for affordable housing. The number of potential additional units that may be developed in the Plan area as a result of these changes represents only a small overall increase in the total number of units within the NVSSP.

Impacts to Land Use are considered less-than-significant.

MITIGATION MEASURES:

None required.

5 PUBLIC FACILITIES FINANCING PLAN

INTRODUCTION

The NVSSP area is designated as an urban growth area in the County of Sacramento General Plan. A land use plan has been prepared to accommodate future development while corresponding public facility master plans have been prepared to identify the major facilities required for NVSSP to develop. This chapter discusses the NVSSP Financing Strategy which identifies the major infrastructure improvements necessary to support the proposed level of development, analyzes phasing constraints, provides the costs per acre for infrastructure categories, and identifies existing and potential funding sources.

State Planning and Zoning Laws (California Government Code) require specific plans to identify in detail the essential infrastructure and services needed to support the land uses described in the plan, as well as a program of implementation and financing measures necessary to carry out those improvements (Section 65451).

The project site is not included in any existing Public Facilities Financing Plan area and will therefore require a financing strategy to fund public facilities needed to serve new development in the Plan Area. The requirement for a financing strategy is established by Policy LU-8 of the County General Plan, which states:

> Policy LU-8. Infrastructure financing plans which specify the extent, timing, and estimated cost of all necessary infrastructure shall be approved by the Board of Supervisors, together with the approval of zoning for any urban uses in urban growth areas. The resulting financing mechanisms shall be implemented prior to the approval of all entitlements in urban growth areas.

Because the proposed project includes requests for rezoning and tentative subdivision map entitlements, preparation and approval of a financing plan for the NVSSP area is required at this time.

DESCRIPTION OF PROPOSED FINANCING PLAN

The NVSSP Public Facilities Financing Plan provides the following summary of the Financing Plan:

INTRODUCTION

This Public Facilities Financing Plan sets forth a strategy to finance the backbone infrastructure and other public facilities required to serve the proposed land uses in the

North Vineyard Station Specific Plan (NVSSP). The strategy proposed is designed to be flexible enough to accommodate the development plans of a diverse set of multiple NVSSP property owners, while assuring the County of Sacramento that the required facilities are constructed when necessary. The Financing Plan includes a combination of existing fee programs, the development of the North Vineyard Station Fee Program (NVSFP), the possible use of Mello-Roos bond financing, and other funding mechanisms.

PROJECT SUMMARY

The NVSSP is located in Sacramento County approximately 13 miles southeast of Downtown Sacramento and two miles north of Elk Grove. The NVSSP is approximately 1,597 acres in size and is bounded by Florin Road on the north, Gerber Road on the south, the extension of Vineyard Road on the east, and Elder Creek (west side, top of channel) which roughly constitutes the western border.

The NVSSP is characterized as a primarily underdeveloped, semi-rural area containing a scattering of 13 older residences and a few non-residential uses. Buildout within the NVSSP is planned for 5,732 housing units (includes the 13 older residences for a net new buildout of 5,719 units), including 4,852 single family units, 187 medium density units, and 680 multi-family units. The NVSSP also includes 64 acres of parks, 21 acres of schools, 39 acres of commercial and business professional, a 20-acre (existing) golf course, a 10-acre transit center and 264 acres designated as streets, parkway, railroad right of way (ROW), and drainage.

The NVSSP is anticipated to buildout over a ten to twenty-year period. During this period, it is anticipated that development within the NVSSP will likely occur in six phases: Phase A-1, Phase A-2, Phase B, Phase C, Phase D, and Phase E. The actual phases of development may be different from that outlined in the Financing Plan. Plate PF -1 shows the phasing plan.

BACKBONE INFRASTRUCTURE AND PUBLIC FACILITIES SUMMARY

Buildout of the NVSSP will require construction of $106.4 million in roadway, frontage lane improvements, water, sewer and drainage backbone infrastructure costs, including ROW acquisition and $95.8 million in other public facility improvements.

Total improvements are estimated to be $202.2 million at buildout, $26.7 million in Phase A-1, $52.4 million in Phase A-2, $32.5 million in Phase B, $37.0 million in Phase C, $29.2 million in Phase D, and $24.3 million for Phase E of development as summarized in Table 5-1. A brief summary of the key components of each phase is shown in the Phase Summary in Table 5-2.

Plate PF -1
North Vineyard Station Specific Plan
Development Phasing

North Vineyard Station Specific Plan

Development Phasing Exhibit for Entire Plan Area

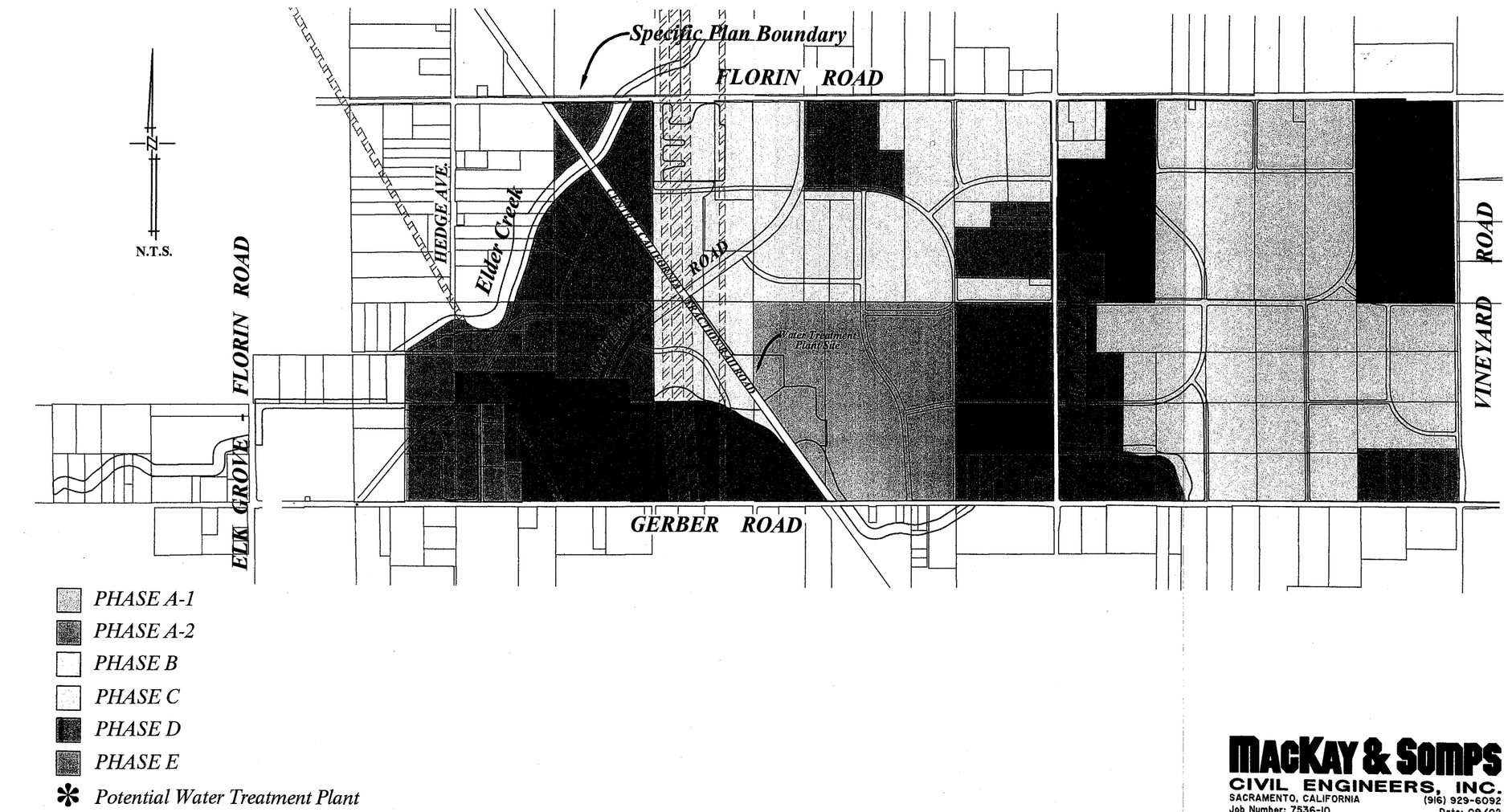


Table 5-1
North Vineyard Station Financing Plan
Preliminary Cost Estimates by Phase (2003 $)

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Figure 1
North Vineyard Station Financing Plan
Preliminary Cost Estimates By Phase (2003 $)

Facility	Reference: Appendix A	Reference: Financing Plan Chapter	Phase A-1	Phase A-2	Phase B	Phase C	Phase D	Phase E	Buildout
Major Infrastructure									
Roadway	A - 1	V	$7,091,200	$10,194,100	$11,431,000	$3,443,700	$4,998,200	$7,712,600	$44,870,800
Frontage Lane Improvements	A - 2	V	$280,800	$2,767,100	$1,212,900	$1,142,700	$1,819,400	$947,700	$8,170,600
Water	A - 3	VI	$2,756,800	$10,131,500	$347,200	$1,640,500	$490,500	$0	$15,366,500
Sewer	A - 4	VII	$3,823,000	$1,937,000	$1,206,000	$3,654,000	$1,197,000	$0	$11,817,000
Drainage - Zone 11A	A - 5	VIII	$1,780,900	$5,163,300	$0	$3,377,200	$2,636,800	$707,900	$13,666,100
Drainage - NVSSP Supp.	A - 5	VIII	$979,900	$6,269,800	$0	$2,619,700	$1,894,800	$712,800	$12,477,000
Subtotal Major Infrastructure			**$16,712,600**	**$36,462,800**	**$14,197,100**	**$15,877,800**	**$13,036,700**	**$10,081,000**	**$106,368,000**
Public Facilities									
Parks and Recreation	A - 6	IX	$1,029,800	$2,044,200	$1,264,400	$2,330,900	$1,799,900	$3,725,800	$12,195,000
Schools	A - 7	X	$7,654,000	$12,047,000	$13,275,000	$16,027,000	$11,726,000	$8,633,000	$69,362,000
Library	A - 8	XI	$171,000	$272,000	$320,400	$371,400	$267,200	$192,000	$1,594,000
Fire Protection	A - 9	XII	$650,900	$901,300	$1,033,900	$1,453,200	$1,010,700	$655,200	$5,705,200
Transit	A - 10	XIII	$452,500	$715,600	$2,418,800	$1,007,900	$1,351,100	$1,031,900	$6,977,800
Subtotal Public Facilities			**$9,958,200**	**$15,980,100**	**$18,312,500**	**$21,190,400**	**$16,154,900**	**$14,237,900**	**$95,834,000**
TOTAL COSTS			**$26,670,800**	**$52,442,900**	**$32,509,600**	**$37,068,200**	**$29,191,600**	**$24,318,900**	**$202,202,000**

"Total_cost"

Source: MacKay & Somps and EPS.

Table 5-2
North Vineyard Station
Phasing Summary

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Figure 1a
North Vineyard Station
Phasing Summary

	Phase A-1	Phase A-2	Subsequent Phases (B, C, D & E)
Roadway	**Construction:** Reconstruct Gerber Rd. from Elk Grove-Florin to west of Bradshaw at Gerber Creek Crossing #3. Consisting of two travel lanes, shoulders and a center turn lane. **Notes:** Two points of access will be required. **Estimated Cost** $7,091,200 **Estimated Fee Revenue** $4,238,600	**Construction:** 2-lane roadway with center turn lane for Waterman Rd. between Gerber Rd. and southwest of CTRR crossing for development of the portion of the Phase A-2 property that is immediately southwest of the CTRR crossing. For property northeast of the CTRR crossing, Waterman Rd. will be constructed from Florin Rd. south for the length which abuts the developing property. Construction of full intersection improvements at Waterman Rd. & Gerber Rd. and 450' in length from each side of the intersection will also be required. **Notes:** The full length of Waterman Rd. is required to be constructed prior to recordation of maps for 2,200 cumulative equivalent dwelling units. Adequate secondary access will be required. Subsection A-1.2 identifies offsite roadway improvements required in this phase with cumulative dwelling unit thresholds to identify timing during the buildout of this phase. **Estimated Cost** $10,194,100 **Estimated Fee Revenue** $6,718,500	**Construction:** On-site and offsite roadway improvements have been identified and cumulative unit thresholds established to provide necessary roadway access and capacity. **Notes:** Refer to Figure A-1.2 for details of the unit threshold indicating the timing of construction of roadway capacity improvements **Estimated Cost** $27,585,500 **Estimated Fee Revenue** $33,913,700
Frontage Lane	**Construction:** The north side of Gerber Rd. between the CCTC RR crossing and Gerber Creek Crossing #3 will be fully improved. **Estimated Cost** $280,800 **Estimated Fee Revenue** $771,800	**Construction:** Full improvement to the south side of Florin, Waterman and west side of Bradshaw frontage will be required. **Estimated Cost** $2,767,100 **Estimated Fee Revenue** $1,223,500	**Construction:** Full improvement of major road frontages associated with each phase. **Estimated Cost** $5,122,700 **Estimated Fee Revenue** $6,175,300
Sewer	**Construction:** A trunk sewer will be required in Gerber Rd. from Elk Grove-Florin Rd to the area needing sewer service **Estimated Cost** $3,823,000 **Estimated Fee Revenue** $1,317,000	**Construction:** The Regional Sanitation District is programmed to construct the Bradshaw Interceptor Sewer along Gerber Creek that serves this phase. To serve the northern portion of this phase a trunk sewer must be constructed in Florin Rd. east of and connecting to the Bradshaw Interceptor. **Estimated Cost** $1,937,000 **Estimated Fee Revenue** $1,920,000	**Construction:** Subsequent phases will need to construct trunk sewers to serve each development phase extending from previous trunk sewers or the Bradshaw Interceptor. **Estimated Cost** $6,057,000 **Estimated Fee Revenue** $10,020,300

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Figure 1a
North Vineyard Station
Phasing Summary

	Phase A-1	Phase A-2	Subsequent Phases (B, C, D & E)
Water	**Construction:** Initial water supplyprovided by SCWA from existing sources outside the NVSSP on a first come first serve basis. Availability of water from existing system subject to change, reflecting ongoing development & increasing water demands outside the NVSSP area. SCWA will re-evaluate available capacity prior to approval of infrastructure improvement plans. Water transmission main will be extended past the so-western boundary of the NVSSP along Gerber Road and connect to the Zone 40 transmission facilities in Elk Grove Florin Road. A fire well facility will be constructed on-site to supplement emergency water supplies. **Notes:** Tentative Map approvals will be required to comply with General Plan Policy CO-20. Staff of Zone 40 will review, at the time of approval of any development improvement plans, the need for additional water supply facilities. **Estimated Cost** $2,756,800 **Estimated Fee Revenue** $2,510,300	**Construction**: Upon exhaustion of available water from the existing Zone 40 system, the water supply system will require expansion to include two additional groundwater wells, conversion of the previously constructed fire well to a domestic supply well, a water treatment facility and storage tank within the Plan Area. Phase A-2 includes water transmission lines extending north from the Phase A-1 construction to the new treatment/storage facility and into the NVSSP. It includes construction along Bradshaw Road. **Notes:** Groundwater production will be limited to a maximum pumping rate of 2,220 gpm. Tentative Map approvals will be required to comply with General Plan Policy CO-20. **Estimated Cost** $10,131,500 **Estimated Fee Revenue** $3,955,500	**Construction:** Prior to cumulative development of approximately 2,600 units (resulting in a maximum day demand of 2,220 gpm) increased surface water deliveries from SCWA supplies must occur. **Estimated Cost** $2,478,200 **Estimated Fee Revenue** $16,853,100
Drainage	**Construction:** Due the geographical location of this phase, the necessary improvements consist of construction of Detention Basin G41 with pumping facilities and improvement of Gerber Creek between the CTRR crossing and Gerber Rd. **Estimated Cost** $2,760,800 **Estimated Fee Revenue** $2,361,000	**Construction:** Consistent with the NVSSP Master Drainage Plan (January, 2003), the following is required: construction of Detention Basin E24B for development areas which drain to this basin. Elder Creek channel must be improved from upstream of Florin Rd. to Detention Basin E24B. Detention Basin E26 to be constructed for development areas draining to this basin, together with an adequate outfall to Elder Creek. A portion of Detention Basin E24A for the most southwestern portion of the planned development within Phase A-2 which drains into this basin. Full Channel Improvements for Gerber Creek from the easterly end of the existing channel near the eastern boundary of the Champions Golf Course to approximately 600 ft. east of the new Waterman Rd. bridge. **Estimated Cost** $11,433,100 **Estimated Fee Revenue** $3,655,200	**Construction:** As subsequent phases proceed, each phase must comply with the Master Drainage Plan (January 2003) or demonstrate through a detailed hydraulic analysis to the satisfaction of the Department of Water Resources that any proposed modification of the phasing contained in the Master Drainage Plan can achieve the original objectives. **Estimated Cost** $11,949,200 **Estimated Fee Revenue** $16,140,800
Other Facilities and Services	**Construction:** Park facilities will be improved within this phase as Southgate P&R programs the onsite park land. School fees will be provided in the phase for the Elk Grove Unified School District to utilize in the implementation of its Master Plan. Fees will be contributed for new capital facilities for library, fire protection, and transit. The respective service providers will determine the timing of actual construction of needed facilities. **Estimated Cost** $9,958,200 **Estimated Fee Revenue** $7,906,400	**Construction:** Park facilities will be improved within this phase as Southgate P&R programs the onsite park land within this phase. School fees will be provided in the phase for the Elk Grove Unified School District to utilize in its Master Plan. Respective service providers will determine the timing of construction of their respective facilities. **Estimated Cost** $15,980,100 **Estimated Fee Revenue** $11,337,200	**Construction:** Park facilities and school facilities will be dedicated, acquired and improved or constructed as subsequent phases develop. Fee contributions to a regional library facility, regional fire facilities and a transit park and ride will occur phase by phase. Timing of providing these facilities will be determined by the respective agencies. **Estimated Cost** $69,895,700 **Estimated Fee Revenue** $52,318,900

Source: MacKay & Somps
The NVSSP Financing Plan contains a possible phasing plan based upon logical infrastructure phasing and at least in the initial phases, expected development timing. This represents only one possible phasing scenario. The NVSSP Financing Plan is proposed to permit other phasing approaches but is structured to ensure timely construction of necessary infrastructure. The following description is the approach for Phases A-1 & A-2 together with key thresholds identified for infrastructure to serve subsequent phases (B, C, D, & E).
Prepared by EPS

FINANCING SUMMARY

PURPOSE

The purpose of the NVSSP Financing Plan is to recommend the appropriate financing mechanisms to fund the necessary backbone infrastructure and other public facility costs required to serve the NVSSP. The goal is to identify financing mechanisms that are flexible enough to ensure the required improvements are constructed when necessary. The financing mechanisms utilized will be dependent upon the types of facilities and when the facilities are needed. Construction will be phased so that facilities are available when needed.

This Financing Plan recommends a combination of existing fee programs, the proposed NVSFP, bond funding mechanisms, and other financing mechanisms to fund the backbone infrastructure and public facilities costs required to serve the NVSSP at buildout as shown in Table 5-3. Existing fee programs will be used extensively; however, it is not anticipated that these mechanisms will fully fund all of the needed improvements. Therefore, in order to provide for funding for the total cost of improvements, the Financing Plan recommends the establishment of a new NVSFP.

The Financing Plan also anticipates the use of other funding mechanisms such as developer advances, the Elk Grove Unified School District's (EGUSD's) existing Mello Roos Community Facilities District (CFD) No. 1, and matching State school funding. Developer advances or bond financing through a NVSSP Mello-Roos CFD formed by the County will be used to fund infrastructure improvements needed during the development of the NVSSP before the collection of fees or other revenue reimbursement sources.

EXISTING FEE PROGRAMS

Existing fee programs include Sacramento County development impact fee programs and the EGUSD's mitigation fees as outlined below.

Sacramento County District IV Road and Transit Fees
Sacramento County Water Agency (SCWA) Zone 40 Water Fees
County Sanitation District No. 1 (CSD-1) Sewer Fees
Sacramento County Regional Sanitation District (SCRSD) Sewer Fees
Sacramento County Zone 11A Drainage Fees
Sacramento Metro Fire District Capital Facilities Fee
EGUSD School Fee Program

Existing fees are shown in Table 5-4. The Financing Plan assumes that these existing mechanisms will be used as primary funding sources. It is estimated that the NVSSP will generate $125.2 million in existing fee program revenue at buildout as shown in Table 5-5. A mapping factor of 90 percent was used to estimate the total amount of fee revenue anticipated from the plan area. Fee revenue was calculated by multiplying the existing fee per unit by the reduced, mapping factor number of units.

Table 5-3
North Vineyard Station Financing Plan
Sources and Uses – Buildout

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Figure 2
North Vineyard Station Financing Plan
Sources and Uses - Buildout

Facility	Estimated Costs At Buildout	Existing Fee Programs		Proposed Fee Program	Difference
		Program	Amount		
Major Infrastructure					
Roadway	$44,870,800		$0	$44,870,800	**$0**
Frontage Lane Improvements	$8,170,600		$0	$8,170,600	**$0**
Water [1]	$15,366,500	Zone 40	$23,318,900	$0	**$7,952,400**
Sewer [1]	$11,817,000	CSD-1	$13,257,300	$0	**$1,440,300**
Drainage - Zone 11A [2]	$13,666,100	Zone 11A	$9,680,000	$0	**($3,986,100)**
Drainage - NVSSP Supplemental	$12,477,000		$0	$12,477,000	**$0**
Subtotal Major Infrastructure	**$106,368,000**		**$46,256,200**	**$65,518,400**	**$5,406,600**
Public Facilities					
Parks and Recreation	$12,195,000		$0	$12,195,000	**$0**
Schools [3]	$69,362,000	Elk Grove USD/State Funding	$69,362,000	$0	**$0**
Library	$1,594,000		$0	$1,594,000	**$0**
Fire Protection	$5,705,200	Sac Metro Fire	$5,705,200	$0	**$0**
Transit	$6,977,800		$0	$6,977,800	**$0**
Subtotal Public Facilities	**$95,834,000**		**$75,067,200**	**$20,766,800**	**$0**
TOTAL	**$202,202,000**		**$121,323,400**	**$86,285,200**	**$5,406,600**

"sources_buildout"

[1] Any surplus at buildout in actual fees collected over actual cost of facilities needed to serve the NVSFP will be applicable to other benefitting areas in the Zone 40 or CSD-1 system.
[2] Any negative difference at buildout will be funded by Zone 11A fees collected from other benefitting areas outside the plan area.
[3] Includes funding from Elk Grove Unified School District Level 2 fees, EGUSD CFD 1 and the State. See Chapter X for details.

Table 5-4
North Vineyard Station Financing Plan
Fee Summary – Buildout
Existing Conditions

Figure 3a
North Vineyard Station Financing Plan
Fee Summary - Buildout
Existing Fee Programs

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Buildout	Total	SFR 1-3	SFR 3-5	SFR 4-7	MDR 7-12	MFR 12-22	Commercial	Business Professional
LAND USE INFORMATION								
Estimated Units	5,147	510	2,752	1,104	168	612		
Acres	1,156	283	612	205	19	38	30	7
Typical Units Per Acre		1.8	4.5	5.4	9.0	16.2		
Assumed Average Sqft of Structures		3,500	3,000	2,200	1,500	1,000	325,502	105,598
EXISTING FEE PROGRAMS		*Per Unit [1]*					*Per Acre*	
County of Sacramento Applicable to Region								
Roadway - District IV		$749	$749	$749	$749	$567	$23,740	$25,918
Sewer - SRCSD		$4,500	$4,500	$4,500	$4,500	$3,375	$4,901	$13,329
Transit - District IV		$117	$117	$117	$117	$117	$5,554	$6,961
Sacramento Metro Fire Fee		$1,435	$1,230	$902	$615	$410	$5,990	$8,146
County of Sacramento Applicable to NVSFP								
Water - Zone 40		$4,641	$4,641	$4,641	$4,641	$3,481	$3,816	$3,816
Sewer - CSD-1 [1]		$6,172	$2,470	$2,058	$1,235	$685	$11,112	$11,112
Drainage - Zone 11A		$2,010	$2,010	$1,788	$1,131	$657	$15,010	$15,010
Subtotal County of Sacramento		**$19,624**	**$15,717**	**$14,755**	**$12,988**	**$9,292**	**$70,123**	**$84,292**
Elk Grove School District		$11,795	$10,110	$7,414	$5,055	$3,370	$3,703	$5,036
Total Existing Fees Per Unit		**$31,419**	**$25,827**	**$22,169**	**$18,043**	**$12,662**		
Total Existing Fees Per Acre							**$73,825**	**$89,327**

[1] The CSD-1 is a per acre fee that was adjusted to a per unit equivalent based on actual units per acre for purposes of this summary.

"Feesumunit"

Table 5-5
North Vineyard Station Financing Plan
Fee Revenue Summary – Buildout

Figure 4a
North Vineyard Station Financing Plan
Fee Revenue Summary - Buildout

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Buildout

Buildout	Total	SFR 1-3	SFR 3-5	SFR 4-7	MDR 7-12	MFR 12-22	Commercial	Business Professional
				Units			*Acres*	
LAND USE INFORMATION								
Units	5,147	510	2,752	1,104	168	612		
Acres		283	612	205	19	40	29.89	7.13
Assumed Average Sqft of Structures		3,500	3,000	2,200	1,500	1,000	325,502	105,598
EXISTING FEE PROGRAMS								
County of Sacramento Applicable to Region								
Roadway - District IV	$4,638,000	$382,000	$2,061,000	$827,000	$126,000	$347,000	$710,000	$185,000
Sewer - SRCSD	$22,714,000	$2,296,000	$12,385,000	$4,969,000	$757,000	$2,066,000	$146,000	$95,000
Transit - District IV	$819,000	$60,000	$322,000	$129,000	$20,000	$72,000	$166,000	$50,000
Sacramento Metro Fire Fee	$5,705,000	$732,000	$3,385,000	$996,000	$104,000	$251,000	$179,000	$58,000
County of Sacramento Applicable to NVSSP								
Water - Zone 40 [1]	$23,318,000	$2,368,000	$12,773,000	$5,125,000	$781,000	$2,130,000	$114,000	$27,000
Sewer - CSD-1	$13,257,000	$3,149,000	$6,797,000	$2,273,000	$208,000	$419,000	$332,000	$79,000
Drainage - Zone 11A	$9,680,000	$1,026,000	$5,532,000	$1,974,000	$190,000	$402,000	$449,000	$107,000
Subtotal County of Sacramento	**$80,131,000**	**$10,013,000**	**$43,255,000**	**$16,293,000**	**$2,186,000**	**$5,687,000**	**$2,096,000**	**$601,000**
Elk Grove School District	**$45,091,000**	$6,019,000	$27,825,000	$8,187,000	$851,000	$2,062,000	$111,000	$36,000
Total Existing Fee Programs	**$125,222,000**	**$16,032,000**	**$71,080,000**	**$24,480,000**	**$3,037,000**	**$7,749,000**	**$2,207,000**	**$637,000**
PROPOSED NVSFP								
North Vineyard Station Fee Program								
Roadway	$44,870,800	$4,975,000	$21,555,500	$8,759,100	$995,300	$3,412,800	$4,319,700	$853,400
Frontage Lane Improvements	$8,170,600	$906,000	$3,925,100	$1,595,100	$181,200	$621,400	$786,400	$155,400
Supplemental Drainage	$12,477,000	$1,386,100	$6,524,200	$2,670,900	$300,300	$692,500	$729,100	$173,900
Parks and Recreation	$12,195,000	$1,384,700	$6,517,900	$2,669,200	$299,500	$1,084,100	$183,600	$56,000
Library	$1,594,000	$184,800	$869,000	$355,900	$40,000	$144,300	$0	$0
Transit	$6,977,800	$531,900	$2,301,700	$930,700	$120,700	$1,356,100	$1,488,600	$248,100
Total Proposed NVSFP	**$86,285,200**	**$9,368,500**	**$41,693,400**	**$16,980,900**	**$1,937,000**	**$7,311,200**	**$7,507,400**	**$1,486,800**
TOTAL FEE REVENUE	**$211,507,200**	**$25,400,500**	**$112,773,400**	**$41,460,900**	**$4,974,000**	**$15,060,200**	**$9,714,400**	**$2,123,800**

"Feerevsum"

[1] Commercial and Business Professional are estimated using an average per acre fee. The actual is fee based on a calculation of the fee per acre plus the fee per building.

[2] NVSFP fees are based on fees per acre as established by DUE factors as shown in the individual infrastructure chapters and Appendix E.

PROPOSED NVSFP

A new NVSFP is recommended to fund roadway, frontage lane improvements, drainage, parks and recreation, the fair share of a library, and transit facilities. Proposed fees are shown in Table 5-4and are estimated on a per acre basis based on DUE factors provided by Sacramento County. The total funding by the new NVSFP is estimated at approximately $86.3 million at buildout as shown in Table 5-5.

OTHER FUNDING MECHANISMS

DEVELOPER ADVANCES

This Financing Plan anticipates that developer advances will be used to advance fund any infrastructure improvements needed in the initial phases of the NVSSP and before the collection of fees or other revenue sources.

EGUSD'S CFD NO. 1 AND STATE FUNDING

The school fee revenue differences will be funded by expected revenue from the EGUSD's existing districtwide CFD No. 1 and State funding.

BOND FUNDING MECHANISMS

Although the NVSSP infrastructure and public facilities are primarily included in fee programs to ensure that each development pays its fair share of these costs, many major improvements will be required at the onset of each phase of development. One or more CFDs will likely be formed to provide public debt financing for improvements needed early in the development of each phase. Fee credits will be provided for appropriate facilities that are also funded by the existing and new fee programs.

The amount of available CFD bond proceeds for construction is estimated to be $55.9 million assuming that all NVSSP development participates in the CFDs.

FINANCING PLAN IMPLEMENTATION

The last requirement of General Plan Policy LU-8 is that the resulting financing mechanisms be implemented before the approval of Final Maps in the NVSSP. Implementation of the Financing Plan ensures that new development will be committed to pay its fair share of the cost of backbone infrastructure and other public facilities required to serve the project area. Facilities will be constructed as they are needed to serve new development. The Sacramento County Public Works Infrastructure Finance Section (IFS) will administer implementation of the Financing Plan, which will require:

- Preparation of a Nexus Study and Ordinances to implement the NVSFP;
- Formation of the Mello-Roos CFD(s) and administration of subsequent bond sales and tax collection;

- Reviewing the CIPs;
- Monitoring identified revenue sources;
- Estimating fee program cash flows;
- Accounting for fee payments, fee credits and/or reimbursements;
- Close coordination with all appropriate County departments to implement the Financing Plan;
- Updating and adjusting the fee program as new infrastructure cost, land use, and revenue information become available.

NVSSP FINANCING STRATEGY

The financing strategy and funding sources for NVSSP at buildout are summarized in Table 5-5. Approximately $125.2 million will be funded through the existing fee programs, including Elk Grove School District Fees. Approximately $86.3 million will be paid through the new NVSFP for roadways, frontage lan~~ed~~e improvements, parks, libraries, and transit. In addition, a portion of school costs will be funded through the EGUSD CFD No. 1 and State funding. The NVSFP also includes a supplemental Drainage fee that is proposed as a sub zone of Zone 11.

Table 5-3 compares projected NVSSP buildout funding revenues from all sources to buildout cost estimates. This comparison shows that projected NVSSP buildout fee revenue will cover buildout costs with a $7.9 million surplus from Zone 40 water fees, a $1.4 million surplus from CSD-1 sewer fees and a $4.0 million difference in Zone 11A fees. Any difference in actual fees collected over the actual cost of facilities needed to serve the NVSSP will be applicable to other regional facilities benefiting areas as described in each individual infrastructure section. It is anticipated that actual fees collected for drainage improvements will be less than the estimated cost of improvements. However, the difference will be funded by fees collected from other areas benefiting from regional facilities within the Zone 11 program.

Developers will privately finance the construction of many of the facilities needed during the first three development phases. After constructing such facilities, developers may be reimbursed for their advances from NVSFP revenues as well as from existing fee program revenues should Phase 1 CFD bonding capacity be insufficient.

Because of the diverse ownership patterns in the NVSSP and the uncertain development phasing, the financing strategy includes a provision for the formation of one or more Mello-Roos CFDs for bond financing of some facilities needed in each development phase of the NVSSP. The proposed initial CFD would fund all or a portion of the infrastructure improvement costs for roadways, water, sewer, and drainage for the areas described in Phases A-1 and A-2. Property owners in other phases may join the initial CFD or set up additional sub-area Mello-Roos CFDs which would be formed for an individual project or group of projects to fund facilities. To the extent that bond financing is utilized, the developer may receive credits and reimbursements against the

appropriate fees. Some development projects or phases may not require bond funding and would handle their infrastructure cost responsibilities through either payment of fees and/or developer advances.

The proposed cost estimates and funding sources are only estimates. The actual costs funded under each category may be adjusted as information regarding project phasing and the facility construction schedule becomes available. Fee credits will be determined by each responsible agency before the sale of CFD bonds.

PHASE A-1 AND A-2 FINANCING STRATEGY

Phase A-1 and A-2 are assumed to be the first development areas of the NVSSP. The funding sources and infrastructure and public facilities costs are outlined in Table 5-6 and Table 5-7. Facilities will be constructed as they are needed to serve new development. As in all development fee programs, however, there is a lag between when the fees are generated and construction of the facilities. Development projects will be conditioned to construct facilities as needed. Developers will receive either fee credits or construct facilities as needed. Developers will receive either fee credits or reimbursements for eligible projects based on the County's reimbursement policies. Properties participating in the Mello-Roos CFD will receive fee credits for eligible facilities funded by the CFD, as determined by each responsible agency.

In Phase A-1, there are approximately $26.7 million in major infrastructure and public facilities costs. It is estimated that $13.2 million will be funded through existing fee programs. The proposed NVSFP will fund $8.2 million. The difference in the amount of fee revenue compared to the cost of infrastructure improvements for this phase will be made up from other funding sources such as Mello-Roos CFD bond funding or developer funding.

In Phase A-2, there are approximately $52.4 million in major infrastructure and public facilities costs. It is estimated that $30.4 million will be funded through existing fee programs. The proposed NVSFP will fund $13.0 million. The difference in the amount of fee revenue compared to the cost of infrastructure improvements for this phase will be made up from other funding sources such as Mello-Roos CFD bond funding or developer funding.

Because of large up-front costs, a Mello-Roos CFD is planned to finance these facilities with land secured bonds. Table 5-8 shows the total bond proceeds available by phase. Table 5-9 shows Phase A-1 and A-2 infrastructure and facility costs proposed to be eligible for CFD bond funding. The total of amount of facilities costs identified exceeds the amount of bond proceeds at this time. It is expected that the facilities list and bond amounts will be fine tuned during the process of forming the Mello-Roos CFD.

The Financing Plan also anticipates that developer advances may be used to fund any infrastructure improvements needed in the initial phases of the NVSSP and before the collection of fees or other revenue reimbursement sources. This Financing Plan assumes that fee credits and/or reimbursements for facilities otherwise funded by the

County fee programs may be available if developers fund and construct fee-funded facilities. Fee credits for completed improvements may be offset against fees until the fee credits are expended. If the cost of the facility exceeds the potential credits for a developer, the County may enter into reimbursement agreement with the developer. Fee credits and reimbursements are available within different time frames depending upon the type of facilities constructed.

INFRASTRUCTURE FACILITY IMPROVEMENTS

ROADWAY

Development within the NVSSP area will have impacts on the entire local circulation network. Portions of roadway improvements benefiting the NVSSP will also benefit other plan areas. For example, the NVSSP is located immediately north of the Elk Grove/West Vineyard Public Facilities Financing Plan Area (EGWV) and some improvements will benefit both areas.

The roadway Capital Improvement Program (CIP) is based on traffic mitigation measures identified in the previously approved NVSSP Environmental Impact Report (EIR) and additional traffic analysis based on the proposed phasing of project development conducted since the approval of the EIR. The additional analysis identified roadway segments and intersections that would be adversely impacted by buildout of the NVSSP under existing plus proposed project conditions. It has been estimated that the NVSSSP will be responsible for $44.9 million of the total local and regional roadway improvements.

In conjunction with the County of Sacramento Transportation Division, the roadway CIP projects will be prioritized based on traffic study results, availability of other funding sources, and the County's overall transportation priorities. The CIP lists a prioritized estimate of roadway improvements for each phase of development.

WATER

The NVSSP will ultimately be served by wells, surface water, distribution mains, treatment and storage facilities located within the NVSSP and in conjunction with other sources provided by Zone 40.

The NVSSP is located within the boundaries of SCWA Zone 40, which usually constructs the necessary water facilities. Development within the NVSSP will be required to pay the Zone 40 fee. Fee revenue generated from this fee is meant to fund water supply, treatment, and transmission facilities within Zone 40.

The NVSSP is expected to generate approximately $23.3 million Zone 40 fee revenue for buildout, or a surplus of $7.9 million. Any surplus in actual fees collected over the actual cost of facilities needed to serve the NVSSP will be applicable to other areas benefiting from regional facilities within the Zone 40 system.

Table 5-6
North Vineyard Station Financing Plan
Sources and Uses – Phase A-1 (2002 $)

DRAFT

Figure 9
North Vineyard Station Financing Plan
Sources and Uses - Phase A-1 (2002 $)

Facility	Estimated Costs At Buildout	Existing Fee Programs		Proposed Fee Program	Difference
		Program	Amount		
Major Infrastructure					
Roadway	$7,091,200		$0	$4,238,600	**($2,852,600)**
Frontage Lane Improvements	$280,800		$0	$771,800	**$491,000**
Water [1]	$2,756,800	Zone 40	$2,510,300	$0	**($246,500)**
Sewer [1]	$3,823,000	CSD-1	$1,317,000	$0	**($2,506,000)**
Drainage - Zone 11A [2]	$1,780,900	Zone 11A	$1,077,300	$0	**($703,600)**
Drainage - NVSSP Supplemental	$979,900		$0	$1,283,700	**$303,800**
Subtotal Major Infrastructure	**$16,712,600**		**$4,904,600**	**$6,294,100**	**($5,513,900)**
Public Facilities					
Parks and Recreation	$1,029,800		$0	$1,282,500	**$252,700**
Schools [3]	$7,654,000	Elk Grove USD/State Funding	$7,654,000	$0	**$0**
Library	$171,000		$0	$171,000	**$0**
Fire Protection	$650,900	Sac Metro Fire	$650,900	$0	**$0**
Transit	$452,500		$0	$452,500	**$0**
Subtotal Public Facilities	**$9,958,200**		**$8,304,900**	**$1,906,000**	**$252,700**
TOTAL	**$26,670,800**		**$13,209,500**	**$8,200,100**	**($5,261,200)**

"sources_a1"

[1] Any surplus at buildout in actual fees collected over actual cost of facilities needed to serve the NVSFP will be applicable to other benefitting areas in the Zone 40 or CSD-1 system.
[2] Any negative difference at buildout will be funded by Zone 11A fees collected from other benefitting areas outside the plan area.
[3] Includes $5.9 million in funding from Elk Grove Unified School District Level 2 Fees and $2.6 million funded by EGUSD CFD 1 and the State. See Chapter X for details.

Table 5-7
North Vineyard Station Specific Plan
Sources and Uses – Phase A-2 (2002 $)

DRAFT

Figure 10
North Vineyard Station Financing Plan
Sources and Uses - Phase A-2 (2002 $)

Facility	Estimated Costs At Buildout	Existing Fee Programs		Proposed Fee Program	Difference
		Program	Amount		
Major Infrastructure					
Roadway	$10,194,100		$0	$6,718,500	**($3,475,600)**
Frontage Lane Improvements	$2,767,100		$0	$1,223,500	**($1,543,600)**
Water [1]	$10,131,500	Zone 40	$3,955,500	$0	**($6,176,000)**
Sewer [1]	$1,937,000	CSD-1	$1,920,000	$0	**($17,000)**
Drainage - Zone 11A [2]	$5,163,300	Zone 11A	$1,613,700	$0	**($3,549,600)**
Drainage - NVSSP Supplemental	$6,269,800			$2,041,500	**($4,228,300)**
Subtotal Major Infrastructure	**$36,462,800**		**$7,489,200**	**$9,983,500**	**($18,990,100)**
Public Facilities					
Parks and Recreation	$2,044,200		$0	$2,040,100	**($4,100)**
Schools [3]	$12,047,000	Elk Grove USD/State Funding	$12,047,000	$0	**$0**
Library	$272,000		$0	$272,000	**$0**
Fire Protection	$901,300	Sac Metro Fire	$901,300	$0	**$0**
Transit	$715,600		$0	$715,600	**$0**
Subtotal Public Facilities	**$15,980,100**		**$12,948,300**	**$3,027,700**	**($4,100)**
TOTAL	**$52,442,900**		**$20,437,500**	**$13,011,200**	**($18,994,200)**

"sources_a2"

[1] Any surplus at buildout in actual fees collected over actual cost of facilities needed to serve the NVSFP will be applicable to other benefitting areas in the Zone 40 or CSD-1 system.
[2] Any negative difference at buildout will be funded by Zone 11A fees collected from other benefitting areas outside the plan area.
[3] Includes $8.2million in funding from Elk Grove Unified School District Level 2 fees and $5.2 million funded by EGUSD CFD 1 and the State. See Chapter X for details.

Table 5-8
North Vineyard Station Financing Plan
Summary of Bonding Capacity by Phase

Figure 8
North Vineyard Station Financing Plan
Summary of Bonding Capacity By Phase

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Bonding Capacity	Assumption	Phase A-1	Phase A-2	Phase B	Phase C	Phase D	Phase E	Buildout
UNIT INFORMATION								
Plan Area Units		541	852	1,136	1,133	828	657	5,147
Plan Area Acres		118.5	172.8	165.3	348.6	227.9	123.0	1,156.1
Annual Special Tax Revenue		**$616,000**	**$972,000**	**$1,058,000**	**$1,291,000**	**$931,000**	**$674,000**	**$5,545,000**
Less Delinquency	10.0%	$62,000	$97,000	$106,000	$129,000	$93,000	$68,000	$554,000
Less Administrative	2.5%	$15,000	$25,000	$27,000	$32,000	$23,000	$17,000	$138,000
Remaining Left for Debt Service		**$539,000**	**$850,000**	**$925,000**	**$1,130,000**	**$815,000**	**$589,000**	**$4,853,000**
BOND SIZING [1]								
Total Bond Size		**$6,575,000**	**$10,368,000**	**$11,283,000**	**$13,783,000**	**$9,941,000**	**$7,184,000**	**$59,196,000**
Term (Years)	25							
Less Estimated Issuance Costs	5.0%	$329,000	$519,000	$564,000	$689,000	$498,000	$360,000	
Less Bond Reserve Fund	10.0%	$658,000	$1,037,000	$1,128,000	$1,379,000	$993,000	$718,000	
Less Capitalized Interest for 12 Months	6.5%	$427,000	$674,000	$733,000	$896,000	$646,000	$466,000	
Construction Proceeds		**$5,161,000**	**$8,138,000**	**$8,858,000**	**$10,819,000**	**$7,804,000**	**$5,640,000**	**$46,467,000**
Construction Proceeds per Unit								
Assuming 2% Annual Escalator								
Total Bond Size (rounded)		**$7,908,000**	**$12,470,000**	**$13,569,000**	**$16,578,000**	**$11,956,000**	**$8,641,000**	**$71,193,000**
Cumulative Bond Size (rounded)		**$7,908,000**	**$20,378,000**	**$33,947,000**	**$50,525,000**	**$62,481,000**	**$71,122,000**	**$71,193,000**
Construction Proceeds (rounded)		**$6,207,000**	**$9,789,000**	**$10,652,000**	**$13,014,000**	**$9,385,000**	**$6,784,000**	**$55,887,000**
Cumulative Construction Proceeds (rounded)		**$6,207,000**	**$15,996,000**	**$26,648,000**	**$39,662,000**	**$49,047,000**	**$55,831,000**	**$55,887,000**

[1] Assuming levels of debt service listed above.

"bond_cap_sum"

Table 5-9
North Vineyard Station Financing Plan
Proposed Authorized Facilities for Phase A-1 and Phase A-2

DRAFT

Figure 11
North Vineyard Station Financing Plan
Proposed Authorized Facilities For Phase A-1 and Phase A-2

Facility	Source	Phase A-1	Phase A-2	Total	Estimated Fee Revenue	Difference
Facility Cost						
Roadways	Appendix A-1 Table A-1.1	$7,091,200	$10,194,100	$17,285,300	$10,957,100	$6,328,200
Frontage Lane Improvements	Appendix A-1 Table A-1.1	$280,800	$2,767,100	$3,047,900	$1,995,300	$1,052,600
Water	Appendix A-3 Table A-3.1	$2,756,800	$10,131,500	$12,888,300	$6,465,800	$6,422,500
Sewer	Appendix A-4 Table A-4.1	$3,823,000	$1,937,000	$5,760,000	$3,237,000	$2,523,000
Drainage - Zone 11A	Appendix A-5 Table A-5.1	$1,780,900	$5,163,300	$6,944,200	$2,691,000	$4,253,200
Drainage - Supplemental	Appendix A-5 Table A-5.1	$979,900	$6,269,800	$7,249,700	$3,325,200	$3,924,500
Improvement Costs Proposed To Be Eligible for CFD Funding				**$53,175,400**		**$24,504,000**
Bond Construction Proceeds Available	Figures B-2 and B-3			**$15,996,000**		
Shortfall in Estimated Bond Proceeds To Be Developer Advanced For CFD Eligible Facilities [1] [2]				**($37,179,400)**	**$28,671,400**	**($8,508,000)**

"auth_facilities"

[1] At this stage of planning for the CFD, the eligible facilites list is larger than the amount of estimated bond proceeds. The list of eligible facilities will be updated based on the conditions at the time of CFD formation.

[2] Developer advances in excess of available CFD funds will be eligible for standard fee credits or reimbursements through the NVSFP.

In cases where developers advance fund the initial phases of Zone 40 infrastructure construction required to serve the NVSSP, they are subject to reimbursement within a five-year time period. Two hundred dollars (per residential unit) of the Zone 40 water fees is paid before improvement plan approval. The remainder of the fee is paid before building permit issuance.

This Financing Plan anticipates that developer advances or bond financing will be used to advance fund any infrastructure improvements needed in the initial phases of the NVSSP and before the collection of fees or other revenue sources. This Financing Plan assumes that fee credits and/or reimbursements for facilities otherwise funded by fee programs may be available if developers fund and construct fee-funded facilities. It is anticipated that the Zone 40 fee program will cover the Phase A-1 costs. However, there is a $6.4 million cumulative difference estimated in Phase A-2. This difference will have to be funded by Mello-Roos CFD bond funding or by developer funding.

SEWER

The County of Sacramento has established a countywide policy to provide public sewer service to all new residential developments of densities greater than one dwelling unit per acre. The NVSSP area is currently within the sphere of influence of the Sacramento CSD-1 and SRCSD. The NVSSP must be annexed to both CSD-1 and SRCSD. The NVSSP has been divided into two major sheds which are the BR Gerber Road Shed and the BR Florin Road Shed. The sewer sheds do not necessarily coincide with the drainage sheds.

The total estimated cost of NVSSP sewer infrastructure is approximately $11.8 million at buildout. This estimate includes trunk sewer lines, removal and replacement of existing pavement, and erosion control.

Installation of sewer improvements will be determined by the phasing of development projects to be served by sewer facilities. Individual projects will be required to complete sewer facility improvements as conditions of project approval. CSD-1 will ensure adequate sewer facility improvements are constructed in order to meet the demands of new development.

DRAINAGE

The Sacramento County Water Resources Department requires new development to follow specific guidelines to protect new and existing structures from the possibility of a 100-year flood event. The NVSSP must provide storm drainage facilities to modify peak flows such that they do not exceed pre-development flows.

The NVSSP lies in the drainage sheds of Elder and Gerber Creeks. Elder Creek enters the NVSSP from the north crossing under Florin Road approximately 1,000 feet east of the CCTR tracks. Gerber Creek enters the NVSSP from the south approximately 1,700 feet west of Bradshaw Road. The two creeks converge and leave at the western edge

of the NVSSP. The entire Elder and Gerber Creek watershed lies within the County Urban Services boundary.

SCWA Zone 11A will assume responsibility for providing storm drainage service to the NVSSP.

The NVSSP will ultimately be served by a drainage system that includes channel improvements, flood control detention ponds, storm water quality basins, new bridges, and trunk pipes and appurtenances. The total estimated cost of the NVSSP drainage improvements is $26.1 million at buildout, which includes the estimated cost of right-of-way acquisition for drainage improvements. Of this, $13.6 million is Zone 11A construction.

The phasing of drainage improvements is highly dependent upon the geographic location and timing of development. If development does not proceed in the sequence anticipated to make the following phasing estimates, a detailed hydraulic analysis will need to be prepared to demonstrate to the satisfaction of Sacramento County Department of Water Resources that the current 100-year elevations have been maintained.

PARKS AND RECREATION

The Southgate Recreation and Park District requires land dedication of 5 acres per 1,000 population. According to the NVSSP and as revised based on comments from the Parks District, a total of one regional park, six neighborhood parks, three mini-parks and a conceptual park designation in the Pasallis Lane area are planned. The parks-and-recreation CIP also includes drainage parkway facilities, linear parkway facilities, and a community center in the NVSSP.

The total cost of parks is estimated to be $12.2 million. This amount includes $7.8 million for park development, $2.8 million for a community center, $686,000 for drainage parkway facilities, and $138,000 for linear parkway improvements, open space acquisition, pedestrian signals and crosswalks, and Park Recreation and Open Space Master Plan preparation, and $670,000 for contingency. Basic improvements include finished grading, drainage, turf, irrigation, walkways, trees, signage, lighting, tot lots, and other items including engineering, inspection, contract administration, and water fees.

Park development phasing will be the responsibility of Southgate Recreation and Park District. The level of park improvements will correspond to the intensity of development. Historically, development has not fronted the cost of park improvements within the District. Agreements for developer-funded park improvements will be determined on a case-by-case basis with the district.

Historically properties along creeks and drainage channels have been obtained for open space uses through project dedication and condition of approval. The NVSFP proposes a supplemental fee for acquisition of the drainage corridor, including open space buffers

located immediately adjacent to the drainage channel. Acquisition of the open space buffer will be a part of the overall drainage corridor acquisition as detailed in the ROW acquisition program.

Ultimately, the open space areas will include the joint use trail system that will serve as a drainage maintenance path and a pedestrian bicycle path. The gravel maintenance road improvements that are in the Drainage CIP and are funded by the Water Agency channel improvements. The District will construct the joint use trail from park fee proceeds after sufficient development has occurred so that large stretches of the trail can be constructed at one time. Here again, the District may choose to enter into Developer agreements for developer-funded improvements to be determined on a case-by-case basis with the District. The extent of frontage improvements adjacent to parks, open space, and parkways required for each project will be determined as each project is processed for tentative map approval.

SCHOOLS

The Elk Grove Unified School District (EGUSD) has determined the need for two elementary school sites within the NVSSP. EGUSD has also determined the need for a new high school and/or middle school, however construction and timing is dependent on State funding. The EGUSD has determined the need for $69.4 million in school facilities. The elementary school portion is $34.1 million.

The EGUSD will manage the construction of school facilities. At this time, phasing information is not available. Phasing for the two elementary schools and the proposed high school or middle school will depend on State funding.

LIBRARY

Typical Library Authority standards require one 12,000 square foot library to serve 50,000 residents. Based on the estimated build-out population of the NVSSP and this standard, the NVSSP would not justify its own new library, but rather would likely be required to contribute toward library facilities created to serve a larger community area. According to a letter dated November 14, 2001 from Rich Hiseley, Fiscal Officer Sacramento Public Library, to Susan Goetz, County of Sacramento Public Infrastructure Finance, the NVSSP will be served by a 13,500 square foot library facility that will also serve the Vineyard Springs Plan Area.

The total estimated cost for the joint use library is $6.4 million and the NVSSP share allocation is $1.6 million. The total estimated cost includes construction, site work, books, furniture, and site acquisition.

The Library Authority will manage the phasing of library facilities. As the NVSSP will likely be contributing fee revenue for library facilities, the phasing of development within the NVSSP will not likely have an impact upon the phasing of library facility construction.

FIRE PROTECTION

The Sacramento Metropolitan Fire District will provide initial fire protection services from Station 55. As the build-out progresses, an additional station may be necessary. The District estimated that new fire protection facilities anticipated to serve the NVSSP would cost an estimated $5.5 million. This cost estimate was provided before the adoption of the new Sacramento Metro Fire Fee as discussed below and has been included in this financing plan for reference purposes only. It is anticipated that the 5.5-acre Public Services site in the NVSSP could accommodate a fire station.

Sacramento Metropolitan Fire District will be responsible for phasing. The District has determined that fire-station construction would begin when the area is occupied by 2,500 single family residences, valued at an average sale price of $200,000 per unit. Based on this requirement, construction for the station is estimated to start in Phase C.

TRANSIT

Regional Transit's 20-year *Transit Master Plan* and *Vision Document* specify that enhanced bus service is planned on Elk Grove Florin Road and Bradshaw Road, and bus trunk line service is planned on Bradshaw and Calvine Roads. In addition to bus service, RT plans to utilize the existing CCTR alignment for possible extension of light rail service or high occupancy vehicle (HOV) thoroughfare for buses. RT has indicated that these services are planned but not guaranteed. The provision of future transit services will be dependent upon community-wide land use patterns, densities/intensities, street configurations, and the availability of capital and operating funds.

The NVSSP conceptually designates a ten-acre Transit Center to ultimately provide parking for carpools and buses. The site may also be used as a possible light rail station.

RT will manage the installation of transit facilities. Phasing of the bus stop facilities will be dependent upon the construction of adjacent projects with frontage on these major arterial or thoroughfare roadways. RT will determine the construction timing of the transit center/park-and-ride facility based on RT's implementation of bus routes and possible extension of light rail to serve the area. RT does not see the need for the park-and-ride in the early stages of development. In addition, this facility could be constructed in stages consistent with fee collections. The park-and-ride could also be split into several smaller park-and-rides. If it is ultimately determined that all, or a portion, of the transit center/park-and-ride facility will not be required, then the fee proceeds may be used for other public transit related improvements that serve the NVSSP area including, but not limited to, light rail facilities.

COUNTY INFRASTRUCTURE FINANCING SECTION COMMENTS

The County Infrastructure Financing Section provided the following comments to the Notice of Preparation:

> "The General Plan Land Use Policy, LU-8 states: "Infrastructure financing plans which specify the extent, timing and estimated cost of all necessary infrastructure shall be approved by the Board of Supervisors together with the approval of zoning for any urban uses in urban growth areas. The resulting financing mechanisms shall be implemented prior to the approval of all entitlements in urban growth areas."
>
> In order to ensure that development within the specific plan area comply with this policy, and fully participate in the North Vineyard Station Specific Plan Public Facilities Financing Plan, the following mitigation measures are recommended:
>
> No rezone shall be approved prior to the approval of the North Vineyard Station Specific Plan Public Facilities Financing Plan and any rezone agreement and/or tentative map within the specific plan area should include the following condition:
>
>> "No final map shall be recorded until the financing mechanisms recommended in the North Vineyard Station Specific Plan Public Facilities Financing Plan (Financing Plan) have been implemented. The property owners shall comply with the implementation financing mechanisms recommended in the Financing Plan."
>
> In addition, to ensure the timely delivery of the required facilities, more specific zoning conditions that set the thresholds based upon individual facilities' requirements will be developed by the Departments of Transportation, Water Resources, and Water Quality in cooperation with the Infrastructure Finance Section prior to approval of any rezone."

IMPACTS AND ANALYSIS

Impact:

A Public Facilities Financing Plan is tangible to environmental impacts in that it provides the mechanism to ensure that needed improvements to mitigate a project's traffic, drainage, water supply, sewer and other infrastructure/service impacts can be implemented in a timely manner. Implementation of the following mitigation measures will reduce the Specific Plan's potential impacts associated with infrastructure financing to a less than significant level.

MITIGATION MEASURES:

No final map shall be recorded until the financing mechanisms recommended in the North Vineyard Station Specific Plan Public Facilities Financing Plan (Financing Plan) have been implemented. The property owners shall comply with the implementation financing mechanisms recommended in the Financing Plan.

6 PUBLIC SERVICES

INTRODUCTION

The following is a discussion of public facilities and service supply/demand issues related to the project. Some of the service providers have submitted comments pertaining to their ability to provide service to the project, including recommended conditions of approval that must be satisfied by the developer before service can be adequately provided. It should be noted that the Public Facilities Financing Plan, Drainage, Water Supply, and Sewer Service are discussed in separate sections of this EIR.

FIRE PROTECTION

The Sacramento Metropolitan Fire District provided the following comments and conditions of approval in response to the NOP and subdivision maps:

> *"The Sacramento Metropolitan Fire District (District) has recently completed a review of the proposed development within the North Vineyard Community Plan and surrounding areas and concludes that upon a build out of the area an additional fire station will be required to provide emergency response services within the community. The current plan depicts a Public Services parcel on the Delatorre property (APN 066-0070-046) that was proposed as a potential future fire station location. The District concludes upon a review of the proposed development contained within the Plan and the surrounding areas that the new fire station location should be located near Bradshaw Road, south of Florin Road, on the proposed road labeled "10 Street", preferably just east of Bradshaw Road. The exact location of the future fire station will need to be determined by the District following a review of the final land use diagram and roadway circulation. The final site selection will also be subject to real property negotiations to acquire property for a fire station. The District will require a minimum of 2.5 net acres of level property with a minimum of 330' of frontage and 330' of depth complete with utilities adequate to support the fire stations."*

The District has also provided the following recommended conditions for the proposed project:

1. *"In every new building where the total floor area exceeds 3,599 square feet an automatic fire sprinkler system shall be installed and equipped with an electronic monitoring system. The system shall be designed and installed as per the guidelines of National Fire Protection Association standard 13, latest edition, and the Fire Prevention Standards of this fire district number 442.501.*

2. *The minimum required fire flow for commercial developments is outlined in the Uniform Fire Code, Table A-III-A-1, but shall not be less than 1500 gallons per minute at 20 pounds per square inch residual for a duration of two (2) hours.*

3. *The required fire flow for the proposed project will vary depending on the type of construction, total square footage of the structure(s) and weather or not a fire sprinkler system is provided or required. This determination will be made when the appropriate information is provided to our office.*

4. *Every building shall be accessible to fire district fire apparatus by means of an all-weather driving surface designed to meet Traffic Index 5.5. The access shall be a minimum of 20 feet wide and have a minimum turning radius of 40 feet inside and 60 feet outside. The minimum vertical clearance 13 feet 6 inches. The access roadways are to be extended within 150 feet of all portions of the exterior walls of the first story. Dead-end fire Department access roads in excess of 150 feet shall be provided with an approved means for turning around the fire apparatus. This fire apparatus access lane and turnaround shall be identified in accordance with the California Vehicle Code. The access roadways are to be provided prior to any construction or storage of combustible materials on site.*

5. *All fire department connections for the automatic fire extinguishing system shall be located within forty feet of a fire hydrant and a minimum of forty feet from any openings within the protected building.*

6. *Commercial buildings exceeding 5,000 square feet must be tested to verify adequate transmission and reception of public safety radio signals. These signals operate on the 800 MHz frequency. If reception or transmission is not adequate, 800 MHz radio amplification systems shall be installed in the building.*

7. *If the crossing of a creek is going to be included, the installation of a private bridge shall be required and shall be designed for a minimum of HS20-44 loading as prescribed by the American Association of State Highways and Transportation Officials. The width shall be minimum of twenty (20) feet. The maximum allowable grade change of the approach to and the departure from the bridge will not exceed eight (8) percent for a distance of ten (10) feet.*

8. *Fire hydrants are to spaced every three hundred (300) feet and located as approved by the Fire District. Water main inter-ties may be required. The type and kind of fire hydrants shall be approved by the Fire District. The hydrant shall be within (8) feet of fire department access. (reference UFC 903.4 and SCC 1240).*

9. *All fire hydrants are to be installed and made serviceable prior to any construction or storage of combustible materials on the site. The fire hydrants*

are to be accessible via an all weather-driving surface approved by the Fire District, during all phases of construction.

10. *The approved civil plans shall be submitted in the approved electronic format (DXF or DWG Auto CAD version 2000 or later.*

11. *Any traffic signal modifications planned at Elk Grove Florin Rd, Gerber Rd, Bradshaw Rd, and Florin Rd and any new signals devices compatible with those employed by the fire department in changing those signals "green" for our direction of travel during an emergency response. Any new signal lights is required to install "Opticom.""*

The Fire District also provided the following comments for the proposed subdivisions:

1. *"Provide approved steamer type fire hydrants for residential areas located as follows:*

   A. *Maximum 500 feet between hydrants: Provide steamer type fire hydrants as follows:*

      1. *One fire hydrant shall be located between 150 and 250 feet from the end of the access roadway or cul-de-sac.*

      2. *A hydrant installed at the end of an access roadway, as a "blow off" for the water district does not meet the fire department requirements.*

      3. *Existing "wharf" fire hydrants are not acceptable to meet the requirements for new construction.*

      4. *Each steamer hydrant shall have a minimum flow of 1000 gpm at 20 pounds of residual pressure for residential areas where the total square feet of the building and garage is no more than 3600 square feet. UFC App. III A, Sect. 5.1*

   NOTE: Specifications for fire hydrants are available at the Fire Prevention office.

2. *Fire department notes and details shall be shown on the Civil Drawings. Copies of the standards are included with the Engineers copy of this letter. See c.c.'s UFC 903.2.*

3. *An approved water supply capable of supplying the required fire flow for fire protection shall be provided to all premises upon which facilities, buildings or portions of buildings are hereafter constructed or moved into or within the jurisdiction. When any portion of the facility or building protected is in excess of 150 feet from a water supply facility or building, on-site fire hydrants and mains capable of supplying the required fire flow shall be provided when required by the Chief. UFC 903.2*

For residential subdivisions, the required fire flow is 1000 gallons per minute for dwellings with attached garages having no more than 3,600 square feet. For dwellings with garages over 3,600 square feet, additional flow is required starting at 1750 gallons per minute.

EXCEPTION:

A. Group R, Difvision 3 Occupancies provided with an approved automatic fire sprinkler system, per NFPA 13D, in areas not provided with a public water supply.

B. Group U, Division 1 Occupancies.

4. *In Group R Occupancies, the roof covering shall not be less than Class "C" when there is no public water supply source with a distribution system conforming to County Standards. Sacramento County Code 16.04.060.*

5. *Provide access roadways with all-weather driving surface of not less than 20 feet of unobstructed width, with a minimum turning radius of 22 feet inside/40 feet outside dimension. It shall be capable of supporting the imposed loads of fire apparatus and having a minimum of 13 feet, 6 inches of vertical clearance. The access roadway shall be extended to within 150 feet of all portions of the exterior walls of the first story of any building. Dead-end fire department access roads in excess of 150 feet long shall be provided with approved provisions for the turning around of fire apparatus. Submit a detailed drawing to this office showing the "turnaround," when required, for review and approval prior to construction. UFC 902.*

6. *If there are no immediate plans for new construction or storage of combustible materials on this site, the above mentioned requirements may be held in abeyance until such time that development occurs. It is important to note that if the property is sold, the seller of the property is encumbered to disclose the above requirements to the buyer.*

7. *There shall be no parking on any street narrower than 28 feet. Parking shall be allowed only on one (1) side on streets from 28 feet to 36 feet wide. Streets that are wider than 36 feet, parking shall be allowed on both sides. Measurements shall be from edge of pavement to edge of pavement. UFC 901.4. On private streets, marking of the fire lanes per the County Fire Marshals' standard may be required.*

8. *Provide approved address numbers on the building in such a position as to be plainly visible and legible from the street or road fronting the property. Said numbers shall contrast with their background and on all new buildings, shall be illuminated at night. UFC 901.4.4.*

   NOTE: In order to meet this requirement the following methods are acceptable:

A. Name the access road and ensure that the new addresses be listed for the newly named "street, and meet the requirement above or …

B. Provide approved address numbers on the homes and for each of the homes on the access drive, provide approved address numbers posted next to the entrance to the access drive, facing the public street in an approved manner to meet the above requirement.

9. Should security gates be considered for this project, the developer shall contact this office for approval of specific clearances, locking mechanisms, or systems, which will accommodate emergency fire department use and then follow established permit procedures pursuant to Sacramento County Code, Chapter 16.70. Further information can be obtained by calling the Crime Prevention Unit of the Sacramento county sheriff's Office at (916) 440-5151. UFC 1208.

10. Remove from any roof, court, yard, vacant lot or open space all accumulations of wastepaper, hay, grass straw, weeds, litter or combustible or flammable waste material, waste petroleum products or rubbish of any kind. All weeds, grass, vines or other growth, when same endangers property or is liable to be fired shall be cut down and removed by the owner or occupant of the property. When total removal of growth from a piece of property if impractical due to size or to environmental factors, approved fuel breaks may be established between the land and the endangered property. The width of the fuel break shall be determined by height, type and amount of growth, wind conditions, geographical conditions and type of exposures threatened, UFC 1103.2.4 (Minimum width of clearance shall be 30 feet or to the property line, whichever is less. Specific conditions may require additional clearance width. UFC APPENDIX II-A, 16).

11. All fire protection equipment to be maintained in operative condition. UFC 1001.5.1" (April 21, 2004)

Compliance with District requirements should ensure that impacts associated with fire protection services are less than significant.

LAW ENFORCEMENT

The County Executive provided the following comments regarding funding for law enforcement services within the Plan Area:

"The North Vineyard Station Specific Plan adopted November 4, 1998, examined law enforcement services and included the following discussion:

'The Department's adopted service standard is 1.0 patrol officer per 1,000 residents. In 1994, there were insufficient patrol officers to meet the

> *Departments service standard on a Countywide basis, including District No. 7.'*

The service standard ratio discussed above is 1.00/1000. Currently, the Sacramento County Unincorporated Area is below this standard and has a ratio of .74/1000. During Budget Hearings in May 2004, it is anticipated that the County Board of Supervisors may reduce Sheriff's Patrol/Investigative Services as much as $25.0 million in annual spending. This is irrespective of any future cuts that may be necessary as a result of potential 2004-05 State Budget reductions.

This $25.0 million potential annual spending decrease may be a permanent reduction to the base level of Patrol/Investigative Services in the Unincorporated Area. According to County staff, there is no plausible scenario for alternative funding to backfill these reductions without additional revenue sources for the foreseeable future. A cut of this magnitude would reduce the funding base for Patrol/Investigative Services from its current base level of 375.0 deputies to 187.0 deputies (a reduction of 188.0 deputies) to serve the Unincorporated Area. This reduction of service will result in an even further worsening of the County's service level (Ratio of .36/1000).

Given the current fiscal situation, it will not be possible to provide development within the North Vineyard Station Specific Plan area with adequate law enforcement as measured by the service standard of 1.0 patrol officer per 1000 residents. Also, new development results in a negative impact on General Fund services including law enforcement services. New development will not generate sufficient revenues to offset the impact of increased demand for law enforcement services. Approval of new development without any additional revenue sources will only worsen the current situation and will further reduce the County's average service level.

Therefore, it is recommended that any rezone in the North Vineyard Station Specific Plan area be conditioned as follows:

> *"No final map shall be recorded until an analysis is prepared that addresses the negative impact on the County General Fund of providing law enforcement services to the North Vineyard Station Specific Plan area and a Mello-Roos Community Facilities District, or other financing mechanism, is in place to fund law enforcement services."*

It is anticipated that following this year's Budget Hearings, the Board of Supervisors will engage in discussions regarding possible tax/fee options for services that have been or will be cut. As part of this discussion, my office will seek direction from the Board for conceptual approve of a Mello-Roos Community Facilities District (or other mechanism) to fund police services in newly developing areas." (May 3, 2004)

Although law enforcement service is available to serve the Plan area, staffing ~~will~~ does not meet service standard levels. Although not considered a significant environmental effect, the project will place increased demands on law enforcement services that are currently limited. To assist in reducing crime levels and the strain on law enforcement resources, the Plan area should be designed with safety as a prime consideration. Coordination with the Sheriff's Department, planners and developers for future development with the Plan area will lessen impacts to police protection services. ~~to less-than-significant.~~

SCHOOLS

The project sites for the Vineyard Creek and Vineyard Point projects are located within the Elk Grove Unified School District, which has been heavily impacted by the high rate of growth occurring within its boundaries during recent years. The project proponent will be required to provide developer fees as mandated by current state law. In March 2003, the Board of Education adopted a new residential development fee in accordance with Senate Bill 50. The new fee ($3.43/square foot) became effective on March 18, 2003, and is subject to change annually. This fee becomes due at the building permit stage of development.

The Elk Grove Unified School District reviewed the subject application and provided comments and estimates of student generation and financial impacts. The comments indicate that the Vineyard Creek project would impact enrollment on the Elk Grove Unified School District by adding 236 students in K-6th; 64 students in 7th and 8th; and 111 students in 9th-12th. The comments also indicate that the Vineyard Point project would impact enrollment on the Elk Grove Unified School District by 374 students in K-6th; 103 students in 7th and 8th; and 173 students in 9th-12th.

The comments also refer to General Plan policies that describe alternatives for addressing overcrowded schools, as follows:

> *County Planning policies PF-39, 40, 43, 45 and 46 are stated in the Public Facilities Element of the Sacramento County General Plan adopted by the Board of Supervisors on December 15, 1993. These policies describe several alternatives for addressing overcrowded schools. We request the Planning Commission and/or the Board of Supervisors comply with these provisions on this project.* (February 19, 2004 comment letter to Planning Department)

Although the project would result in increases to student population, established case law indicates that school overcrowding, standing alone, is not a change in the physical conditions, and cannot be treated as an impact on the environment[1].

[1] Goleta Union School District v. The Regents of the University of California (36 Cal-App. 4th 1121, 1995)

PARKS AND RECREATION

The Southgate Park and Recreation District (SPRD) is the local governing body for management of public park land in the Plan Area. SPRD provided the following comments in response to the Notice of Preparation:

- ***"Reasonable Foreseeable Construction of Recreational Facilities.***
  A project is defined as the whole of an action that results in a reasonably foreseeable physical change in the environment. Pursuant to Appendix G of the California Environmental Quality Act (CEQA) Guidelines, projects that include recreational facilities or require the construction or expansion of recreational facilities, which may have an adverse physical effect on the environment, are considered to have a significant impact on recreation and require a discussion of the impacts and an evaluation of potential mitigation measures. The Supplemental EIR should identify reasonably foreseeable development of dedicated park space and recreational trails and analyze the potential of such development to result in significant environmental impacts. Potential impacts areas include biological resources, hydrology and water quality, noise and transportation/traffic. The trail placement and alignments were further defined and provided to the County of Sacramento Planning Department with their Vineyard Creek Map Comments contained in Resolution 03-120. Descriptions of the other recreation, park and trail facilities/improvements have also previously been provided to the County and are attached for your reference.

- ***Land Use Policy Conflicts***
  The District's required standard for land dedication is 5 acres per 1,000 individuals. Further, the District is responsible for maintaining landscape corridors throughout the project area. Pursuant to Appendix G of the State CEQA Guidelines, projects that conflict with an applicable land use policy are considered to have a significant impact on land use and require the evaluation of mitigation measures. The County of Sacramento should evaluate and present this impact, require dedication of sufficient parkland, identify the easements for landscape corridors, and include a requirement to restore the landscape corridors to preproject conditions at the completion of construction. All construction within 200 feet of an open space preserve or a recreational area should be coordinated with the preserve or recreational area manager.

- ***Recreation Facility User Hazards***
  The District Master Plan Map dated July 1, 2003, includes park areas and trail alignments in the proposed project area. In accordance with Appendix G of the State CEQA Guidelines, the proposed project may substantially increase hazards to pedestrians and cyclists using these recreational facilities, thus requiring the consideration of mitigation measures. Of particular concern are the bicycle/pedestrian trail crossings at roadways, especially at Bradshaw Road. The District recommends that the County of Sacramento analyze these impacts

and include mitigation measures to reduce the potential safety hazard to below the threshold for significance.

- ***Water Treatment Plant Impacts***
  The proposed project has the potential to result in significant impacts related to aesthetics, noise, and recreation due to the water treatment plant. The District recommends that the County of Sacramento analyze these impacts and include mitigation measures to reduce the potential safety hazard to below the threshold for significance. Potential mitigation measures include directing all outdoor lighting away from the perimeter of the property with cutoff shields and prismatic glass coverings to prevent illumination from spilling onto adjacent residential areas, landscaping on all sides of the water treatment plant, pedestrian/bicycle access across the water treatment plant area from the park to the detention basin, "decorating" the detention basin with native plantings and improving the basin with recreational amenities such as a walking trail and benches. The financing plan needs to be updated to provide for such improvements. The District would be willing to accept responsibility for maintenance of the trail and landscaped/improved areas with the appropriate funding mechanism in place and with final design approval." (April 20, 2004)

  (NOTE: The comment writer references Appendix "G" of the CEQA Guidelines. Appendix G is now a suggested checklist and no longer defines mandatory findings of significance as implied by the comments.)

Improvements, such as trail alignment and landscaping, associated with the Drainage Parkway are considered to be an element of the overall Drainage Master Plan. Impacts associated with these recreational improvements are considered in the context of evaluating the DMP.

Future development may have the potential to impact existing and planned park site facilities in the area, as well as creating the need for additional facilities, due to increased resident population. However, until specific development proposals are made, it is difficult to accurately assess impacts to specific sites and/or facilities. However, no environmentally significant impacts to recreational opportunities for existing and future residents are expected.

The Draft NVSSP Financing Plan includes a line item to construct a signalized crossing where the bike/pedestrian trail crosses Bradshaw Road. The need for crossings at Waterman Road, Gerber Road, and at interior collectors will be evaluated at the time detailed specifications for those roadway segments are submitted. Appropriate parkland acreage will be dedicated within the Plan area and no significant impacts with regard to recreational facilities are anticipated.

PUBLIC TRANSIT

Regional Transit provided the following comments in response to the NOP and subdivision maps:

> *"Currently RT does not provide transit in the vicinity of the project. RT's 20-year Vision identifies Bradshaw Road as a future transit corridor. It also identifies the California Traction Railroad alignment as a light rail corridor. The property north of Gerber Road adjacent to the railroad alignment has the potential of being a good location for a station and transit-oriented development.*
>
> *An effective transit system is dependent upon land use patterns within ½ mile of a station. Transit supportive development densities need to be in the medium density range, street configurations and lot patterns need to support the major investment. It is important for this development proposal to either be designed to support transit, or not preclude future opportunities in its design. Property near the potential station site may be identified as open space for a time, physical barriers such as walls, cul-de-sacs etc. should not impede access to the potential station area."* (April 7, 2004)

VINEYARD CREEK COMMENTS

> *"RT does not currently provide service to this area, however the RT 20-Year Vision (enclosed) has proposed the provision of the following transit services:*
>
> - *Enhanced bus service on Elk Grove-Florin Road.*
> - *Bus trunk service on Calvine and Bradshaw Roads.*
> - *Extending light rail along the Central California Traction Company railroad alignment.*
>
> *These transit services are not guaranteed, they represent services RT would like to be able to provide. The provision of these future transit services will be dependent upon community-wide land use patterns, densities/intensities, street configurations, and the availability of transit capital and operating funds. This project as well as other development projects within the North Vineyard Station Specific Plan reviewed by RT staff indicate that the area will be developed primarily with low-density single family residences, which do not provide sufficient densities to support the provision of transit services."*

VINEYARD POINT COMMENTS

> *"Currently RT does not provide transit in the vicinity of this project. However, RT's 20-year Vision identifies Bradshaw Road as a future transit corridor. The provision of future transit services will be dependent upon community-wide land use patterns, densities/intensities, street configurations, and the availability of*

transit capital and operating funds. Thus, it is important to consider transit during the initial design of the project. This helps to maximize the availability of resources. It is premature to designate bus stop locations at this time.

Prior to the preliminary design stages, RT urges the project proponents to consider certain forms of subdivision design. Many common forms of subdivision design impede access to transit and the provision of transit service such as walls or other physical barriers, cul-de-sacs, circuitous street patterns, and speed bumps. For example, if this is a gated development, the provision of pedestrian cut throughs and paths to both Gerber and Bradshaw Roads would be essential to the vitality of any future transit service along this potential transit corridor. RT has found that pedestrians will walk ¼ mile to a bus stop, but that the number significantly decreases as the walking distance increases."

PUBLIC FACILITIES FINANCING PLAN COMMENTS

"RT's 20-year Transit Master Plan and 20-year Vision document identify the Central California Traction Company (CCTC) railroad right-of-way as a potential future transit corridor. The development of transit service in the CCTC corridor will be contingent upon many factors, including, but not limited to:

1. *Land use development within the corridor at residential densities and commercial intensities to sustain transit service,*

2. *Site designs and street configurations that enhance access to transit facilities, and,*

3. *Adequate capital and operating resources to construct and operate the transit mode and level of service desired.*

Typically, the presence of isolated pockets of residential developments will not generate sufficient ridership to warrant higher levels of bus service. The proposed development should be phased to minimize "leapfrog" patterns which results in large expanses of vacant land between developed areas. Extending transit services throughout "leapfrog" communities lowers transit productivity and increases costs of the transit operator. The County's General Plan Policy (LU-7) states that "the County shall not approve land use projects which are for non-contiguous development, that is, leapfrog."

Given the long-range time frame of RT's Plans, a bus service using existing streets should also be considered. However, the lack of sufficient population or employment density to justify bus service in the Vineyard community is likely to result in the absence of any transit service in the near future, unless a specific funding source is available to RT for the capital and operating costs of service in the CCTC corridor or to the North Vineyard Station planning area.

Section IV (page 27) – Land Use

A total of 5,517 housing units are planned for the site, including 4,850 single-family units, 187 medium density units and 679 multi-family units. In addition, the plan includes 37 acres of commercial and business professional development as well as a 6-acre transit center.

Currently, RT does not provide any transit service to the Plan Area. As mentioned above, RT's 20-year vision document identifies Bus Trunk Line service corridors along Bradshaw and Florin Roads and Bus Rapid Transit (BRT) corridor along Elk Grove-Florin Road, west of the site. In addition, a future light rail corridor is proposed to utilize the existing Central California Traction Company (CCTC) railroad alignment connecting this area of the Sacramento County with the Downtown Sacramento/Amtrak/Folsom light rail corridor. The CCTR alignment travels through the Plan Area to the west.

Considering RT's future plan for this area, staff recommends that:

a. Transit supportive or transit-oriented uses should be located along the identified major arterials such as Bradshaw Road and Florin Road. In addition, uses that enhance transit usage should be located around the proposed transit center. The design of the Land Use Plan should encourage public transit. Land uses are generally more intense adjacent to arterial streets in order to encourage ridership.

b. Multi-family developments are more transit supportive than single-family units. A total of 4,850 single-family units are proposed compared to 679 multi-family units. If North Vineyard Station is substantially developed in a low-density residential manner without transit supportive design features and less number of Multi-family units, it is highly unlikely that it will receive high levels of transit service.

Section XIV – Public Transit (page 78)

The document identifies a 6-acre transit center on page 27 ("Buidout" Section) while on page 78 it identifies the transit center as a 10-acre site ("Proposed Facilities" Section). RT's previous response to the proposal (January 28, 1997) refers to a 10-acre transit center to be utilized for park and ride purposes. Please clarify the size of the proposed transit center. While RT acknowledges the identification of this transit center/plaza facility, the location of the facility is crucial to its successful utilization. Preferably, the transit center should be located at an intersection with major roadways (such as Florin or Bradshaw Roads) surrounded by pedestrian-oriented uses that would also be transit-supportive.

a. Public Transit Standards

Given the uncertainty in determining the location of future bus stops and shelters in the along the arterials, RT recommends that consideration be given to including provisions for the placement of bus shelters within the Public Utility Easements (PUE's) that are adjacent to public street right of

ways. If bus shelters cannot be accommodated within PUE's, RT requests that bus shelter easements, approximately 10;W x 20'L be made available to RT at such time when bus service may commence.

b. Light Rail

The South Line Phase 1 project is currently under construction with revenue service to commence in September of 2003. RT is in the process of preparing the final environmental document to construct the second phase of the south area LRT line. In addition, RT's 10 year system expansion plan includes extension of the south line to Grant Line Road.

c. Transit Facilities

Figure 33 on page 79 indicate that the estimated fee for transit facility improvements is $2.1 million. The fee is proposed to be utilized for land acquisition, engineering/contingency and construction associated with the proposed park and ride facility. RT recommends that the plan area fee program revenues collected from the Specific Plan area include the purchase of buses and the operation of transit services in the area."

Implementation of the proposed project will not disrupt or interfere with expected transit operations in the area and no cumulative impacts were identified. The plan provides for the implementation of future facilities by RT such as bus operations, light rail, bus turnouts, and transit centers. Impacts due to the proposed project are considered less than significant.

REQUIREMENTS/RECOMMENDATIONS OF VARIOUS AGENCIES

A. Sacramento Municipal Utility District

1. Vineyard Creek – Large Lot Tentative Map

   a. Dedicate a 12.5-foot public utility easement for overhead and underground facilities and appurtenances adjacent to Florin Road.

   b. Dedicate a 12.5-foot public utility easement for underground facilities and appurtenances adjacent to all public street rights of ways.

   c. Dedicate any Irrevocable Offer of Dedication and 12.5-feet adjacent hereto as a public utility easement for underground facilities and appurtenances.

   d. The owner/developer of the above noted property MUST disclose to future/potential buyer the following existing and potential 69 & 230 kV facilities.

There is an existing overhead electrical 69 & 230 kV line located adjacent to the East property line.

2. Vineyard Creek – Small Lot Vesting Tentative Subdivision Map

   a. Dedicate a 12.5-foot public utility easement for underground facilities and appurtenances adjacent to all public street rights of ways.

   b. Dedicate the Landscape Corridors adjacent to Florin Road as a public utility easement for overhead and underground facilities and appurtenance.

   c. Dedicate the Landscape Corridors as a public utility easement for underground facilities and appurtenances.

   d. The owner/developer of the above noted property MUST disclose to future/potential buyer the following existing and potential 69 & 230 kV facilities.

      There is an existing overhead electrical 69 & 230 kV line located adjacent to the East property line.

3. Vineyard Point – Large Lot Tentative Parcel Map

   a. Dedicate a 12.5-foot public utility easement for underground facilities and appurtenances adjacent to all public ways.

   b. Dedicate a 12.5-foot public utility easement for underground and overhead appurtenances adjacent to Bradshaw Road.

   c. Dedicate the Irrevocable Offer of Dedication and 12.5 feet adjacent thereto as a public utility easement for underground facilities and appurtenances.

   d. Designate a parcel of land for an electric substation to be acquired by the Sacramento Municipal Utility District having an approximate size of 150 feet by 150 feet of net useable area. The tentative location will be within the Vineyard Point development. The exact size and location of the substation site shall be by mutual agreement of SMUD and the property owners prior to the recordation of the final map.

   e. Any revisions or deletions relative to the above conditions must be submitted in writing by the Real Estate section of SMUD. The County of Sacramento should accept no verbal or other written agreements.

   f. The owner/developer must disclose to future/potential owners the existing or proposed 69kV electrical facilities.

4. Vineyard Point – Small Lot Vesting Tentative Subdivision Map

a. Dedicate a 12.5-foot public utility easement for underground facilities and appurtenances adjacent to all public ways.

b. Dedicate a 12.5-foot public utility easement for underground and overhead appurtenances adjacent to Bradshaw Road.

c. Designate a parcel of land for an electric substation to be acquired by the Sacramento Municipal Utility District having an approximate size of 150 feet by 150 feet of net useable area. The tentative location will be within the Vineyard Point development. The exact size and location of the substation site shall be by mutual agreement of SMUD and the property owners prior to the recordation of the final map.

d. Any revisions or deletions relative to the above conditions must be submitted in writing by the Real Estate section of SMUD. The County of Sacramento should accept no verbal or other written agreements.

e. The owner/developer must disclose to future/potential owners the existing or proposed 69kV electrical facilities.

B. Land Division & Site Improvement Review

1. Vineyard Creek – Large Lot Tentative Map

   a. Offsite portion of 50-foot IOD adjacent to Parcels 6 and 7 must be secured prior to recordation.

   b. Dedicate a standard 12.5-foot Public Utility Easement for underground facilities and appurtenances adjacent to all public ways, private drives and/or Irrevocable Offer of Dedication (IOD).

   c. Prior to recordation of a final map or certificate of compliance, dedicate land or pay in lieu fees, or both, for park purposes, as required by and in accordance with the procedures and standards set forth in Chapter 22.40, Title 22 of the Sacramento County Code.

2. Vineyard Creek – Small Lot Vesting Tentative Subdivision Map

   a. Secure offsite right of way for “L” Way and “7” Court; “G” circle and “B” Way, and install public street improvements pursuant to the Sacramento County Improvement Standards.

   b. Dedicate a standard 12.5-foot Public Utility Easement for underground facilities and appurtenances adjacent to all public ways, private drives and/or Irrevocable Offer of Dedication (IOD).

c. Comply with all requirements of Chapter 1, Article 5, Title III, of the Sacramento County Zoning Code, relating to walls and landscape corridors adjacent to streets, including required maintenance provisions.

d. Prior to recordation of a final map or certificate of compliance, dedicate land or pay in lieu fees, or both, for park purposes, as required by and in accordance with the procedures and standards set forth in Chapter 22.40, Title 22 of the Sacramento County Code.

3. Vineyard Creek – Rezone

a. Grant the County right-of-way for Florin Road, based on a 108-foot standard, and Waterman Road, based on an 84-foot standard, and install public street improvements pursuant to the Sacramento County Improvement Standards.

C. Southgate Recreation and Park District

1. Comments and recommendations for Vineyard Creek Subdivision

a. Landscape Corridors shall be a minimum of 25 feet wide with a sound wall, along Florin Road and Waterman Road, and will be accepted by the District (proposed Lots F, G, H, I, J, & K). The Developer shall dedicate the landscape corridors to Southgate as a gift deed and be fully developed by the Developer with plans and specifications to be approved by the District. Corridors shall have a square curb and meandering six foot wide pathway separated from traffic. The District shall accept the completed landscape corridors after they have passed inspections and shall maintain the landscape corridors through assessment district proceeds. It is understood that the District does not maintain subdivision signage. The District does not require subdivision entrance lighting, however, more residents are requesting landscape lighting to illuminate subdivision entryways and street names. In lieu of lighting the District does request the installation of wiring and connection to the electric box, on each side of Lots F and H at A Drive and Waterman Road, on each side of Lots H and J of F Way at Waterman Road, and on the east side of Lot K on Florin Road at L Way (for future installation of lighting, should it become necessary).

b. The Developer shall install a 6’ high masonry wall for lots that back up or side-on to the landscape corridors along Florin Road, Waterman Road and A Drive. The design for all masonry walls shall be treated with graffiti-resistant coating and the design approved by the District. A Rain Bird maxicom controller, with telephone line and electricity shall be provided to tie into the District’s computerized irrigation system as well as a certified reduced pressure backflow device.

c. The Developer shall consent to the inclusion of this subdivision within the North Vineyard Station Financing District, which will be a Landscaping and

Lighting Assessment District or a Mello Roos Community Facilities District, and the Southgate District-wide Landscaping and Lighting Assessment District. The Developer shall be responsible for notification to all subsequent purchasers of parcels of land of the inclusion within said financing districts. These financing districts will be established by the District for additional improvements and ongoing maintenance and operations.

d. As determined by the County Board of Supervisors, this subdivision will be included in the Southgate Recreation and Park District component of the North Vineyard Station Public Facilities Financing Plan. The District reserves the right to revise park land dedication requirements and financing mechanisms to adapt to changes resulting from modifications to the policy or the creation of a new Plan by the County of Sacramento.

e. The District will accept Park Lot C as identified on the revised Tentative Subdivision Map dated February 2004, with lot C being approximately 2.9± gross acres in size. The additional unmet Quimby requirements for the subdivision shall include the 11.4± gross acres adjacent to Park Lot C. The District will not give Quimby credit for property encumbered or otherwise with restrictions. Additional park site property shall be immediately adjacent to Park Lot C, as shown on the map, and conveyed to District at the ~~Same~~same time the 2.9 acres are conveyed. Since there will be an estimated over-dedication of 5.1 acres of parkland for this project, the District agrees to enter into a Developer Requirement Agreement, with the Developer, which shall address the Quimby credits for this project.

f. The District requests review of all Army Corp of Engineer, Fish and Game, Fish and Wildlife or any other State or Federal Agency comments and requirements as well as the final permit and conditions as they pertain to the open space property, and will then determine acceptance of the conditions and respective property.

g. Open space areas shall front on a public road per County of Sacramento General Plan requirements. On areas of Open Space that front on a public street, a “setback” area of approximately 10 feet (from back of sidewalk into Open Space area) shall be minimally landscaped by Developer (to District’s specifications) to provide for an aesthetic transition into the Open Space area. Similar to the landscape corridors; Developer shall bear all costs associated with the installation of related infrastructure, post and cable fencing and minimal landscaping (including drip irrigation). Any lots, including the multifamily Lot 378, backing or siding on to the open space area shall have a 6’ high open, tubular steel fence constructed by Developer, and approved by the District. Fencing belongs to and is the responsibility of the residential property owner. Open space will have post and cable fencing along the back edge of the open space landscaped area, a vertical curb and connected 6-foot wide concrete sidewalk along all Streets fronting open space area. Irrigation system to be connected to the District’s maxicom computerized

irrigation system inclusive of: controller, phone line and electricity. The District requests an ADA accessible drinking fountain with backflow prevention device along with an appropriate drainage inlet, be provided by the Developer on Lot B, adjacent to parcel 170. Open Space Lots A, B & E (approximately 9.5 acres) and as shown on the Tentative Map dated February 2004, shall be dedicated to the District as a gift with a clear title report, and be fully developed and improved by the developer with plans and specifications to be approved by the District. No Quimby credit or Developer Fee credit will be given for this open space or the improvements. Developer shall pay for these improvements. Location of improvements to be determined by District and Developer. The Developer shall install street lighting along streets fronting on all open space areas, on the open space side of the street. The District shall accept the completed open space area after they have passed inspections, accepted conditions required by the Army Corp of Engineers, and received a clear title report. The Developer shall agree to the inclusion in an additional assessment zone, to go towards the maintenance of the trail and open space area. The District shall maintain the trails and open space areas through assessment district zone proceeds. The District shall not own or otherwise take responsibility for creek channel maintenance or drainage functions.

h. The developer shall assure that the park land to be dedicated is appropriately graded to the District's specifications and pursuant to County standard; shall provide adjoining streets, sidewalks with vertical curbs; electrical, phone, storm drainage, sewer, and water stubs; connect to and provide water meter, reduced pressure backflow preventer; and pay all permit fees including building, sewer, water meter, water development and drainage fees for the park sites and landscape corridors in order to allow for improvements to the park lots, open space lots (limited) and landscape corridors within this subdivision. Rain Bird maxicom controllers with telephone line and electricity shall be connected to the District's computerized irrigation system.

i. It is understood that it is the responsibility of the property owner to care for and keep maintained the ten foot pedestrian easements and is not a part of the Landscape Corridors to be conveyed to the District, as shown on the Tentative subdivision map dated February 2004.

j. The District would appreciate the opportunity to further comment on this map after the Public Facilities Financing Plan has been approved in order to make any necessary adjustments.

k. In the event that the Central California Traction Railroad Corridor is abandoned and the County of Sacramento determines that these tracks shall become part of a Rails-to-Trails system, the District desires that the developer provide a landscaped access to this trail system from the proposed subdivision. This access should be a minimum of 30 feet in width, and be dedicated to the District, with no land dedication credits given to the

developer for this acreage. The location can be determined at a future point in time; however, access points to consider could include but are not limited to access from the proposed Elder Creek Trail as it intersects the CCTRR. In lieu of the CCTRR becoming a trail, the District requests a low flow crossing across Lot B, adjacent to parcel 170 and on the west side of the CCTRR and a 50' wide easement along the southwest side of the CCTRR, to facilitate the bicycle/pedestrian trail planned for the North Vineyard Station community. This crossing is key to providing continuity to this trail system.

l. The District desires to work with the Developer and County Water Resources in identifying potential recreational uses of the 7.4-acre detention basin site. Due to the basin's relationship to the Park Lot C, active and overlapping joint use is realistic. In order to accommodate recreational uses advance planning needs to occur to address design issues including and not limited to access points and parking. A public access point and parking area needs to be identified since the access point identified next to parcel 169 is for maintenance purposes only.

m. The developer shall construct a bicycle/pedestrian trail and landscaping along Gerber and Elder Creeks as required under the North Vineyard Station PFFP and as per District requirements for standards and location. The District has identified on the Drainage Corridor/Open space map the specific location of the trail, provided to MacKay and Somps in February 2004. For purposes of the Vineyard Creek subdivision, the trail shall be on the eastern/southern side of Elder Creek along the sewer interceptor path, continuing northerly to Florin Road. As mentioned above, in lieu of the CCTRR becoming a trail, the District requests a low flow crossing across Lot B, adjacent to parcel 170 and on the west side of the CCTRR and the construction of a northwesterly trail within a 50' wide easement to follow the western side of the CCTRR to Florin Road, to facilitate the bicycle/pedestrian trail planned for the North Vineyard Station community. This crossing is key to providing continuity to this trail system. There will be 2 trails converging on to Florin Road in order to negotiate around the CCTRR, for this subdivision. Connections from the subdivision to the trail shall be provided at the locations indicated on the attached map or as determined by the District and Developer at a future date, due to changed conditions. Points of trail connections from the sidewalk to the trail shall be near the northwest corner of Lot D, at the end of H Circle by Parcel 170, between Parcels 63 and 41 on K Circle, between Parcels 20 and 21 on 11 Court, and between Parcels 5 and 6 on 12 Court. Additional trail connections shall be made from the Detention Basin and Park Lot. The trails are part of the overall Gerber Creek and Elder Creek Open Space area as identified in the Sacramento County land use plan. Improvements along bike trail and open space corridors shall compliment the design planned in the North Vineyard Station Plan. Trail and Open space area shall be gift deeded to the Southgate Recreation and Park District with no Quimby credits given for this area. Developer shall enter into a Developer Requirement Agreement for these improvements and may be credited developer fees for all agreed to

bike trail improvements. Due to the proximity of the creek to the subdivision the District requests a southern public access point and connection from the subdivision to the Gerber Creek trails. Location of creek access to be mutually determined by the Developer and the District. Trail alignment shall meander throughout the corridor. Trail design shall be provided to Developer by District. Typically, the trail shall not be closer than 20' from the top of bank along the creek and outside of any environmental constraints. Trail setback from the rear or side of residential property lines and streets shall be as far as possible, with a minimum distance of 50'. It is important that adequate space be provided in order to provide separation for bicycle, pedestrian and equestrian uses.

n. The District has previously had discussions with the County Sanitation District regarding the joint use, improvement and maintenance of land reserved for sewer interceptor and planned for trails. The Southgate District goes on record as supporting this joint use concept and wherever possible and feasible project planning should include and incorporate complimentary design and use of said land. A similar joint use agreement for this area is highly recommended.

2. Comments and recommendations for Vineyard Point Subdivision

a. Landscape Corridors, a minimum of 25 feet wide with soundwall, along Gerber and Bradshaw Road will be accepted by the District (proposed Lots J, K, L & M). In this revised map Landscape corridor lot K was eliminated when Lot G was added to the map. There should be a continuous corridor and sidewalk on Gerber Road. Lot K needs to be re-inserted on the map. The Developer shall dedicate the landscape corridors to Southgate as a gift deed and be fully developed by the Developer with plans and specifications to be approved by the District. Corridors shall have a square curb and meandering pathway separated from traffic. The District shall accept the completed landscape corridors after they have passed inspections and shall maintain the landscape corridors through assessment district proceeds. It is understood that the District does not maintain subdivision signage. The District does not require subdivision entrance lighting, however, as a note we have been receiving more comments from residents requesting landscape lighting to illuminate subdivision entryways and street names. This amenity is only a suggestion and not a requirement. In lieu of lighting the District does request the installation of wiring and connection to the electric box, and the running of the wire through conduit under the following streets, on each side of 'A' Drive at Bradshaw Road and on each side of 5 Street at Gerber Road (for future installation of lighting, should it become necessary).

b. The Developer shall install a 6' high masonry wall for lots that back up or side-on to the landscape corridor along Gerber Road and Bradshaw Road. The design for all masonry walls shall be treated with graffiti-resistant coating and the design approved by the District. A Rain Bird maxicom controller, with

telephone line and electricity shall be provided to tie into the District's computerized irrigation system as well as a certified reduced pressure backflow device.

c. The Developer shall consent to the inclusion of this subdivision within the North Vineyard Station Financing District, which will be a Landscaping and Lighting Assessment District or a Mello Roos Community Facilities District, and the Southgate District-wide Landscaping and Lighting Assessment District including the annexation to a new Zone in a landscaping and lighting assessment district, to ensure that adequate funding is available to pay for all costs associated with the repair, maintenance and monitoring in perpetuity for the capital development and operation and maintenance of the park facilities, open space property, trails and related improvements. The Developer shall be responsible for notification to all subsequent purchasers of parcels of land of the inclusion within said financing districts. These financing districts will be established by the District for additional improvements and ongoing maintenance and operations.

d. As determined by the County Board of Supervisors, this subdivision will be included in the Southgate Recreation and Park District component of the North Vineyard Station Public Facilities Financing Plan. The District reserves the right to revise park land dedication requirements and financing mechanisms to adapt to changes resulting from modifications to the policy or the creation of a new Plan by the County of Sacramento.

e. The District will accept Park Lot A as identified on the revised Tentative Subdivision Map dated December 15, 2003, with lot A being approximately 10.0 gross acres in size. The 1.8 gross acres previously shown as park lot D shall be removed and the acreage added to park lot A. An amendment to the North Vineyard Station Specific Plan will still allow for a future 5.0 acre park site immediately east of the former park lot D. Any additional unmet Quimby requirements for the subdivision shall be paid to the District in in lieu fees.

f. The Developer shall install a 6' high masonry wall for lots that back up or side-on to the future park site on 11 Street (former Park Lot D). The design for all masonry walls shall be treated with graffiti-resistant coating and the design approved by the District.

g. The District will accept the removal of the formerly designated Parkway Lot E (as previously shown on the Tentative Subdivision Map dated October 10, 2002) from this map.

h. The developer shall assure that the land to be dedicated is appropriately graded to the District's specifications and pursuant to County standard; shall provide adjoining streets, sidewalks with vertical curbs; electrical, phone, storm drainage, sewer, and water stubs; connect to and provide water meter, reduced pressure backflow preventer; street lights fronting on park and open

space property; and pay all permit fees including building, sewer, water meter, water development and drainage fees for the park site(s) and landscape corridors in order to allow for improvements to the park lot(s) and landscape corridors within the subdivision. Rain Bird maxicom controllers, with telephone line and electricity shall be connected to the District's computerized irrigation system. Additionally, traffic calming measures shall be initiated on 11 Street, at the points where it intersects 4 Street, in order to provide for a safe pedestrian crossing to and from the future park.

i. It is understood that it is the responsibility of the property owner to care for and keep maintained the ten food landscaped pedestrian easements.

j. Lot N Landscape Corridor, as shown on the Tentative subdivision map dated December 15, 2003 shall also extend around the northern side of Lot C to shield the tank site lot and to provide an aesthetic view from the park site. It is understood that it is the responsibility of the property owner to care for and keep maintained this corridor. It is also understood that there will be continuous sidewalk along this corridor.

k. The District would appreciate the opportunity to further comment on this map after the Public Facilities Financing Plan has been approved in order to make any necessary adjustments.

l. In the event that the Central California Traction Railroad Corridor is abandoned and the County of Sacramento Determines that these tracks shall become part of a Rails-to-Trails system, the District desires that the developer provide a landscaped access to this trail system from the proposed subdivision. This access should be a minimum of 30 feet in width, and be dedicated to the District, with no land dedication credits given to the developer for this acreage. The location can be determined at a future point in time. Design around the corridor and access should provide for the visibility to address security concerns, as requested by the Sheriff's Department and approved by the District.

m. The District desires to work with the Developer and County Water Resources in identifying potential recreational uses of the 9.7 acre detention basin site. In order to accommodate recreational uses an access point and parking area would need to be provided from the subdivision. This access point and parking area can be determined at a future point in time.

n. The District has master planned a trail along Gerber Creek, which is included as part of the North Vineyard Station Specific Plan. Due to the proximity of the creek to the subdivision the District requests a public access point from the subdivision to the Gerber Creek corridor and a connection to the future trail. Location of creek access to be mutually determined by the Developer and the District.

D. Sacramento County Executive

1. The County Executive recommends that any rezone in the NVSSP area be conditioned as follows:

   "No final map shall be recorded until an analysis is prepared that addresses the negative impact on the County General Fund of providing law enforcement services to the North Vineyard Station Specific Plan area and a Mello-Roos Community Facilities District, or other financing mechanism, is in place to fund law enforcement services."

MITIGATION MEASURES:

None required.

7 TRAFFIC AND CIRCULATION

BACKGROUND

The prior EIR for the NVSSP analyzed the impact of development of the NVSSP on traffic volumes and levels of service within and around the Specific Plan Area. Recommendations for improvements to intersections and roadway segments were made in order to mitigate for potentially significant and significant impacts. This revised traffic study, prepared by Fehr and Peers Transportation Consultants, looks at the impact of development on traffic volumes and levels of service in the context of NVSSP Phasing.

The number of dwelling units has fluctuated since the preparation of the revised traffic study. However, according to the Sacramento County Department of Transportation (Clark):

> "The Department of Transportation has reviewed the trip generation analysis prepared for the proposed changes in the land use plan for the North Vineyard Specific Plan by Fehr & Peers Transportation Consultant, April 3, 2002, and concurs with the conclusions that the changes in overall project trip generation are minor. The increase in project trip generation with the change in number of units is around 2%. Department of Transportation staff believes that this increase in the project trip generation will not result in any changes in the conclusions presented in the FEIR."

INTRODUCTION

PURPOSE

The purpose of this analysis was to determine off-site roadway improvements needed to accommodate traffic generated by the North Vineyard Station Specific Plan (NVSSP). Because the cost associated with the ultimate set of improvements is substantial, Sacramento County Transportation Division staff requested a phased traffic analysis to identify off-site roadway improvements needed to accommodate the development phases. Therefore, this analysis includes the evaluation of off-site traffic operations, including daily roadway capacity analysis and peak hour intersection operations, with the addition of Phase 1A in Year 2002 (existing conditions), Phase 1B in Year 2005, Year 2010 levels of development in Year 2010, and buildout of the NVSSP in Year 2015.

STUDY AREA

Plate TC -1 shows the location of the NVSSP with respect to the study area, including roadways and intersections bounded by State Route 16 (SR 16) to the north, Calvine Road to the south, Excelsior Road to the east, and Elk Grove-Florin Road to the west. Forty roadway segments and eighteen intersections were analyzed to determine the impacts of the proposed project on the roadway network within the project vicinity.

EVALUATION CRITERIA

The criteria for identifying roadway and intersection deficiencies are based on the County of Sacramento Transportation Division, *Traffic Impact Analysis Guidelines*, July 24, 1997. The following describes these criteria.

ROADWAY SEGMENTS

Study roadway segments were analyzed by comparing average daily traffic volumes to the capacity thresholds summarized in Table 7-1. The project results in an operational deficiency if the addition of project-generated traffic causes the demand on a facility to exceed its capacity, which is defined as LOS E.

According to standards set forth in *A Policy on Geometric Design of Highways and Streets* (1994) published by the American Association of State Highway and Transportation Officials (AASHTO), the minimum cross-section for rural arterials serving more than 400 vehicles per day includes 12-foot travel lanes and shoulders 6 feet or more in width. The following study roadway segments have roadway cross-sections less than this minimum cross-section:

- Gerber Road – East of Elk Grove-Florin Road;
- Vineyard Road – Calvine Road to Gerber Road; and
- Excelsior Road – Sheldon Road to north of SR 16.

The capacity of these roadways is 11,000 vehicles per day based on the 1994 *Highway Capacity Manual* methodologies, accounting for the roadways' substandard features, including the narrow travel lanes and shoulder widths. The two-lane rural roadway capacity is 7,000 vehicles per day less than the capacity of 18,000 vehicles per day for a two-lane roadway that has minimum 12-foot travel lanes and usable shoulders six feet or more in width.

Plate TC -1
Project Location Map

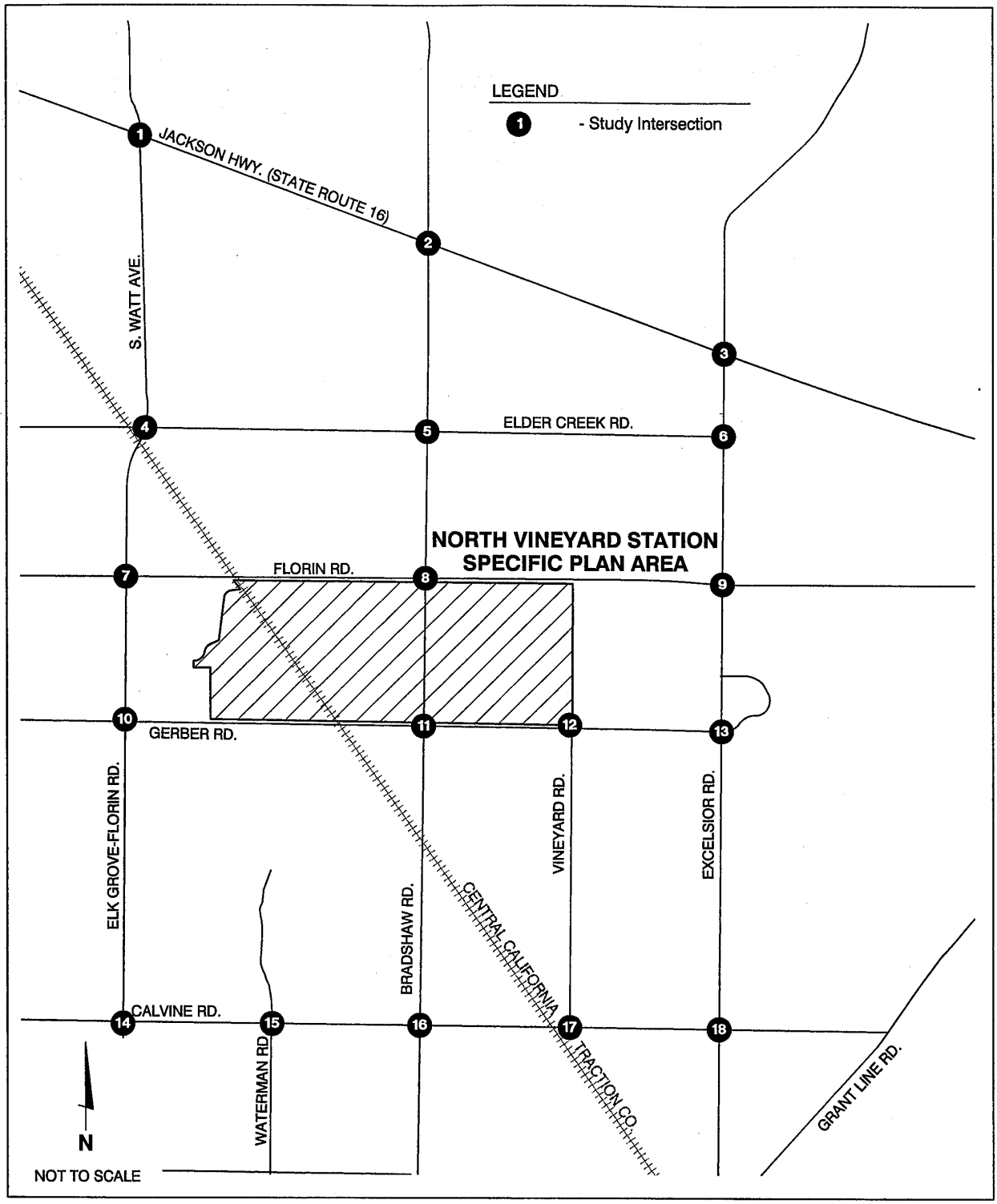


Table 7-1
Roadway Capacity Thresholds and Level of Service

Number of Lanes on Roadway	Maximum Daily Volume for Given Level of Service				
	A	B	C	D	E
Rural Two-lane Highway[1]					
2[1]	2,400	4,800	7,900	13,500	22,900
Rural Two-lane Roadways With Substandard Cross-sections					
2	1,300	2,600	4,300	6,800	11,000
Moderate Access Control Arterial[2]					
2	10,800	12,600	14,400	16,200	18,000
4	21,600	25,200	28,800	32,400	36,000
6	32,400	37,800	43,200	48,600	54,000

Notes:
[1] Capacities for rural 2-lane highway used to evaluate State Route 16.
[2] Capacities summarized above are for an arterial roadway with moderate access control (i.e., 2-4 stops per mile, limited driveways, and speeds between 35-45 mph.)
Source: *County of Sacramento Traffic Impact Guidelines,* July 24, 1997.

SIGNALIZED INTERSECTIONS

Analysis of signalized intersections was conducted using the methods described in *Interim Materials on Highway Capacity* (Circular No. 212, Transportation Research Board, January 1980) with adjustments for higher capacities as specified in the Sacramento County *Traffic Impact Analysis Guidelines,* July 24, 1997. The following capacities were used in this analysis:

- Two-phase signal – 1,650 critical movements per hour;
- Three-phase signal – 1,550 critical movements per hour; and
- Four or more phase signal – 1,500 critical movements per hour.

Table 7-2 summarizes signalized intersection level of service characteristics and corresponding volume-to-capacity (V/C) ratios. The V/C ratio is the projected volume divided by the theoretical capacity of the intersection. An intersection is defined to be at capacity when the V/C ratio is equal to 1.00.

Table 7-2
Level of Service Characteristics for Signalized Intersections

Level of Service	Description	Volume-to-Capacity Ratio
A	Uncongested operations; all queues clear in a single cycle.	≤ 0.60
B	Very light congestion; an occasional phase is fully utilized.	> 0.60 and ≤ 0.70
C	Light congestion; occasional queues on approaches.	> 0.70 and ≤ 0.80
D	Significant congestion on critical approaches, but intersection is functional. Cars required to wait through more than one cycle during short peaks. No longstanding queues formed.	> 0.80 and ≤ 0.90
E	Severe congestion with some longstanding queues on critical approaches. Traffic queue may block nearby intersection(s) upstream of critical approach(es).	> 0.90 and ≤ 1.00
F	Total breakdown, stop-and-go operation.	> 1.00

Source: *Interim Materials on Highway Capacity* (Circular No. 212, Transportation Research Board, January 1980).

UNSIGNALIZED INTERSECTIONS

Unsignalized intersections were analyzed using the method described in the *Highway Capacity Manual* (Special Report 209, Transportation Research Board, 1994). This methodology computes intersection level of service based on the weighted average total delay for all approaches. Table 7-3 summarizes the level of service criteria for stop sign-controlled intersections.

Table 7-3
Level of Service Characteristics for Unsignalized Intersections

Level of Service	Interpretation	Average Total Delay (seconds/vehicle)
A	Little or no delay.	≤ 5.0
B	Short traffic delays.	> 5.0 and ≤ 10.0
C	Average traffic delays.	> 10.0 and ≤ 20.0
D	Long traffic delays.	> 20.0 and ≤ 30.0
E	Very long traffic delays.	> 30.0 and ≤ 45.0
F	Stop-and-go conditions.	> 45.0

Source: *Highway Capacity Manual* (Special Report 209, Transportation Research Board, 1994).

LEVEL OF SERVICE THRESHOLD

The County of Sacramento has defined the level of service standard for urban roadways and intersections to be LOS E (i.e., LOS F is considered unacceptable). As outlined in the Sacramento County *Traffic Impact Analysis Guidelines*, a project related deficiency occurs if the addition of project-generated traffic causes a facility to change from LOS E (or better) to LOS F or, for facilities that will be operating unacceptably under “no project” conditions, adds more than five seconds of delay at unsignalized intersections or increases the V/C ratio on study roadways or at signalized intersections by 0.05 or more.

YEAR 2002 CONDITIONS

Construction and occupancy of residential dwelling units within Phase 1A of the NVSSP was anticipated by 2002. Therefore, study intersections and roadways were analyzed under Year 2002 conditions, which essentially represent existing conditions.

YEAR 2002 WITHOUT PROJECT CONDITIONS

The following discusses the roadway network and traffic operations under Year 2002 conditions without the implementation of Phase 1A.

ROADWAY SYSTEM

Plate TC -2 displays Year 2002 roadway lane assumptions within the study area. The off-site roadway network consists of two-lane collector and arterial facilities except for Elk Grove-Florin Road between Gerber Road and Calvine Road, which is four-lanes

wide. The widening of Bradshaw Road is anticipated in 2003 and the widening of Calvine Road between Elk Grove-Florin and Bradshaw Road is anticipated by 2002. These improvements were assumed for Year 2002 conditions based on County staff direction.

TRAFFIC VOLUMES

Fehr & Peers Associates conducted a.m. and p.m. peak period intersection turning movement counts at 18 intersections within the study area and gathered current daily roadway segment volumes (for 40 segments) from the Sacramento County Transportation Division. In addition, field surveys were performed to identify intersection lane geometries, intersection control, and roadway cross-sections.

Construction and occupancy of residential dwelling units within Phase 1A of the NVSSP is anticipated by 2002. Therefore, construction-year (Year 2002) forecasts were developed by adding background growth (i.e., traffic growth that will occur between 2000 and 2002) to existing peak hour intersection counts and daily roadway volumes. Background growth was estimated by identifying annual growth in traffic volumes within the study area. Peak hour volumes used in the October 1996 traffic analysis were compared to existing peak hour volumes collected in December 1999, which equated to an annual growth rate of four percent. Consequently, the existing traffic volumes were increased by eight percent to represent Year 2002 conditions. Plate TC -3 and Plate TC -4 display Year 2002 daily and peak hour traffic volumes, respectively.

ROADWAY ANALYSIS

The daily volumes shown on Plate TC -3 were compared to the roadway capacity thresholds presented in Table 7-1. Table 7-4 summarizes the results of the arterial roadway analysis. All of the study roadways will operate acceptably in 2002 (without Phase 1A) except for the following[1]:

- S. Watt Avenue (North of SR 16); and
- Elk Grove-Florin Road (Florin Road to Gerber Road).

[1] Assumes widening of Bradshaw Road (Calvine Road to SR 16) from 2 to 4 lanes.

Plate TC -2
Year 2002 Roadway System

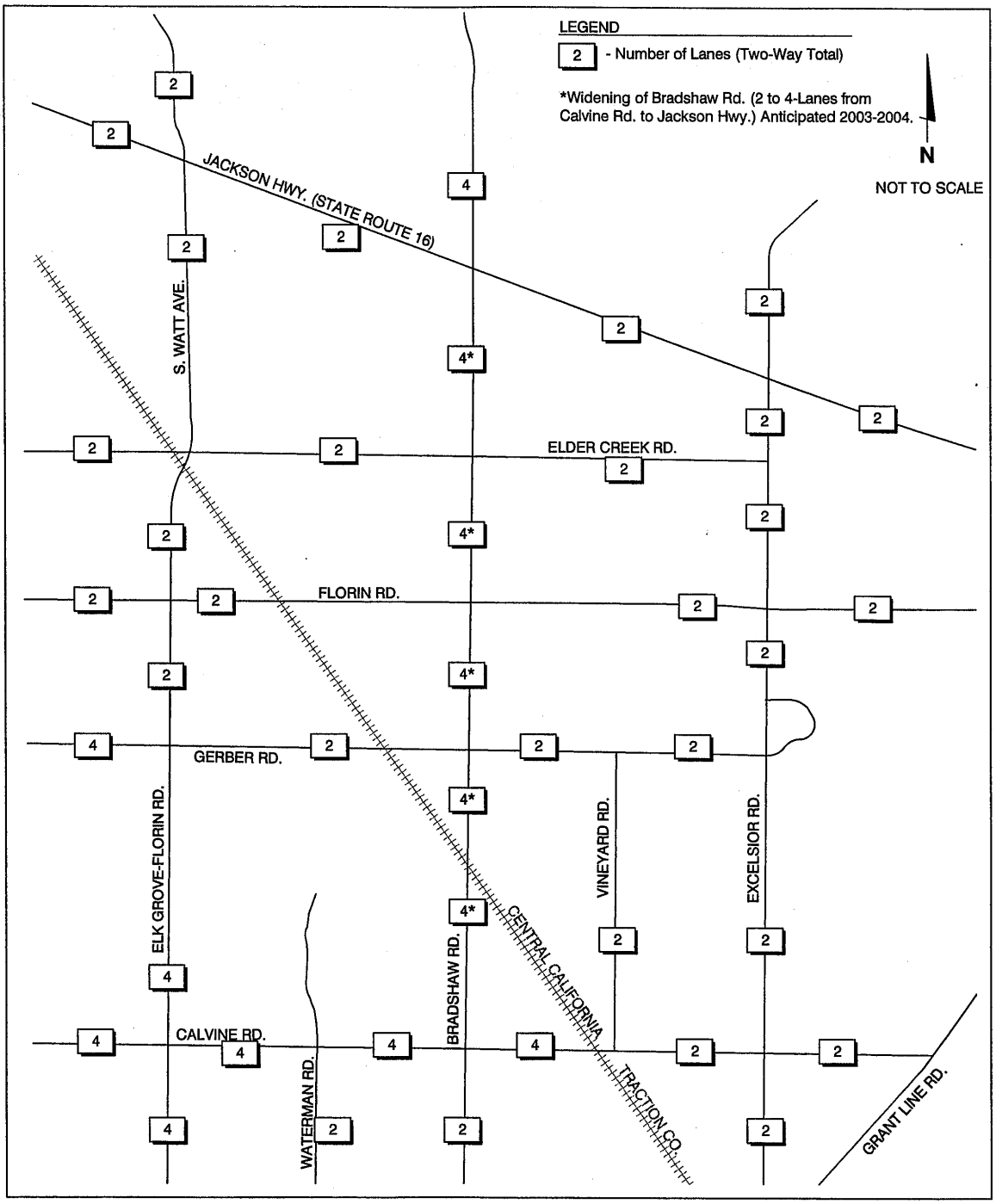


Plate TC -3
Average Daily Traffic Volumes
Year 2002 Without Phase 1A

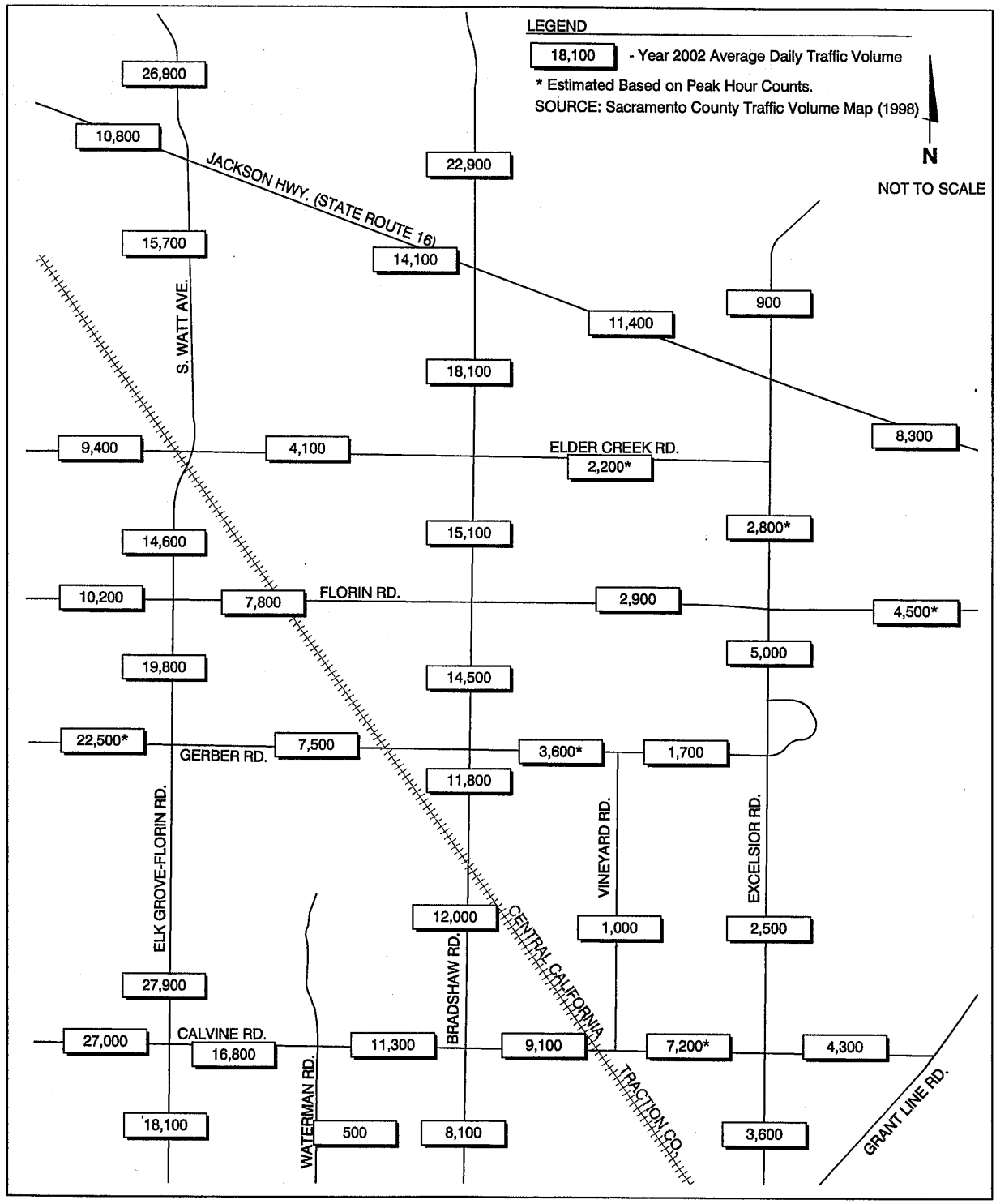
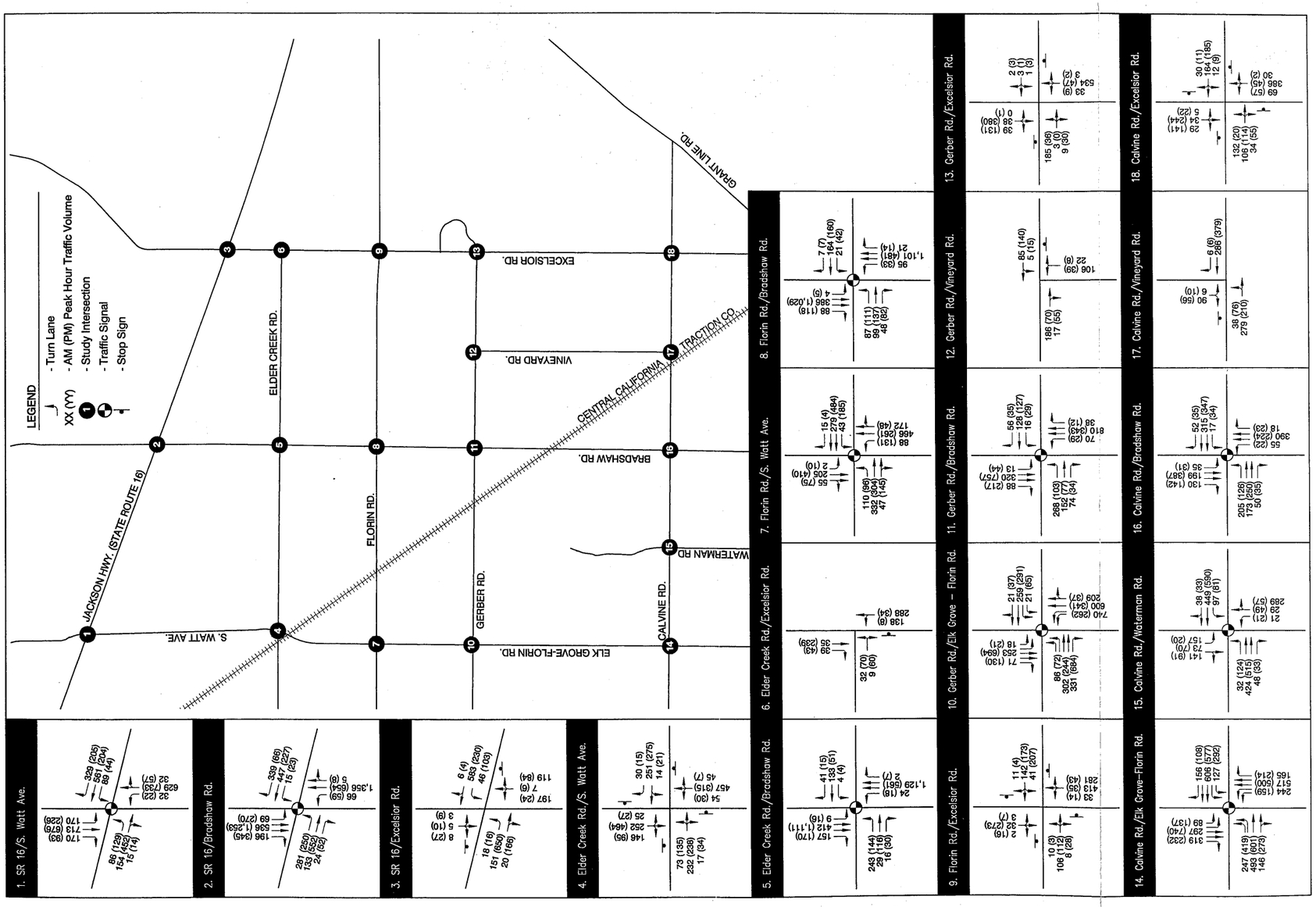


Plate TC -4
Peak Hour Traffic Volumes and Lane Configurations
Year 2002 Without Phase 1A



INTERSECTION ANALYSIS

The Year 2002 a.m. and p.m. peak hour intersection turning movements and lane configurations shown on Plate TC -4 were used to calculate the levels of service at each study intersection. Table 7-5 summarizes the results of this analysis. Improvements were assumed at the following intersections, consistent with the widening of Bradshaw Road from two to four lanes (Calvine Road to just south of SR 16):

- Gerber Road/Bradshaw Road;
- Florin Road/Bradshaw Road; and
- Elder Creek Road/Bradshaw Road.

Without the NVSSP, all of the study intersections will operate acceptably (LOS E or better) in both the a.m. and p.m. peak hours except for the SR 16/S. Watt Avenue intersection.

YEAR 2002 CONDITIONS WITH PHASE 1A

The following discusses Phase 1A of the NVSSP and its impacts on the surrounding roadway system under Year 2002 conditions.

PROJECT DESCRIPTION

Plate TC -5 shows the location of Phase 1A of the NVSSP, property owners, and potential access locations. Phase 1A is owned by the North Vineyard Investors, Pointe Vineyard and Morvai groups. The North Vineyard Investors property has frontage on Florin Road and is bisected by the Central California Traction Railroad easement. The Pointe Vineyard property has frontage on Bradshaw Road and Gerber Road. The Morvai property has frontage on Florin Road.

The following describes a potential access scenario that will satisfy the County's requirement to provide two points of access for emergency vehicles:

North Vineyard Investors (South of Railroad Easement) – Primary access to Gerber Road from Waterman Road and secondary access to Florin Road from Waterman Road (north) across the Central California Traction Railroad easement. An alternative secondary access could be provided to Gerber Road from 1 Street;

North Vineyard Investors (North of Railroad Easement) **–** Primary access to Florin Road from 3 Street and an emergency only access on Florin Road (due to the limited frontage);

Table 7-4
Roadway Analysis – Year 2002 Conditions

Roadway Segment	Year 2002 Conditions		
	Lanes	Volume	LOS
SR 16 – West of S. Watt Ave.	2	10,800	D
SR 16 – S. Watt Ave. to Bradshaw Rd.	2	14,100	E
SR 16 – Bradshaw Rd. to Excelsior Rd.	2	11,400	D
SR 16 – East of Excelsior Rd.	2	8,300	D
Elder Creek Rd. – West of S. Watt Ave.	2	9,400	A
Elder Creek Rd. – S. Watt Ave. to Bradshaw Rd.	2	4,100	A
Elder Creek Rd. – Bradshaw Rd. to Excelsior Rd.	2	2,200	A
Florin Rd. – West of S. Watt Ave.	2	10,200	A
Florin Rd. – S. Watt Ave. to Bradshaw Rd.	2	7,800	A
Florin Rd. – Bradshaw Rd. to Excelsior Rd.	2	2,900	A
Florin Rd. – East of Excelsior Rd.	2	4,500	A
Gerber Rd. – West of Elk Grove-Florin Rd.	4	22,500	B
Gerber Rd. – Elk Grove-Florin Rd. to Bradshaw Rd.	2	7,500	E
Gerber Rd. – Bradshaw Rd. to Vineyard Rd.	2	3,600	C
Gerber Rd. – Vineyard Rd. to Excelsior Rd.	2	1,700	B
Calvine Rd. – West of Elk Grove-Florin Rd.	4	27,000	C
Calvine Rd. – Elk Grove-Florin Rd. to Waterman Rd.	4	16,800	A
Calvine Rd. – Waterman Rd. to Bradshaw Rd. [1]	4	11,300	A
Calvine Rd. – Bradshaw Rd. to Vineyard Rd. [1]	4	9,100	A
Calvine Rd. – Vineyard Rd. to Excelsior Rd.	2	7,200	A
Calvine Rd. – Excelsior Rd. to Grant Line Rd.	2	4,300	A
S. Watt Avenue – North of SR 16	2	26,900	F
S. Watt Avenue – SR 16 to Elder Creek Rd.	2	15,700	D
S. Watt Avenue – Elder Creek Rd. to Florin Rd.	2	14,600	D
Elk Grove-Florin Rd. – Florin Rd. to Gerber Rd.	2	19,800	F
Elk Grove-Florin Rd. – Gerber Rd. to Calvine Rd.	4	27,900	C
Elk Grove-Florin Rd. – South of Calvine Rd.	4	18,100	A
Waterman Rd. – South of Calvine Rd.	2	500	A
Bradshaw Rd. – North of SR 16	4	22,900	B
Bradshaw Rd. – SR 16 to Elder Creek Rd. [2]	4	18,100	A
Bradshaw Rd. – Elder Creek Rd. to Florin Rd. [2]	4	15,100	A
Bradshaw Rd. – Florin Rd. to Gerber Rd. [2]	4	14,500	A
Bradshaw Rd. – Gerber Rd. to Calvine Rd. [2]	4	12,000	A
Bradshaw Rd. – South of Calvine Rd.	2	8,100	A
Vineyard Rd. – Gerber Rd. to Calvine Rd.	2	1,000	A
Excelsior Rd. – North of SR 16	2	900	A
Excelsior Rd. – Elder Creek Rd. to Florin Rd.	2	2,800	C
Excelsior Rd. – Florin Rd. to Gerber Rd.	2	5,000	D
Excelsior Rd. – Gerber Rd. to Calvine Rd.	2	2,500	B
Excelsior Rd. – South of Calvine Rd.	2	3,600	C

Notes: **Bold** – Unacceptable LOS according to County (LOS E) standards.
[1]Assumes widening of Calvine Road to 4 lanes (Kingsbridge Drive to Bradshaw).
[2]Assumes widening of Bradshaw Road to 4 lanes (Calvine Road to SR 16).
Source: Sacramento County Traffic Impact Guidelines (July 24, 1997) and Fehr & Peers Associates, 2002.

Table 7-5
Peak Hour Intersection Operations – Year 2002 Conditions

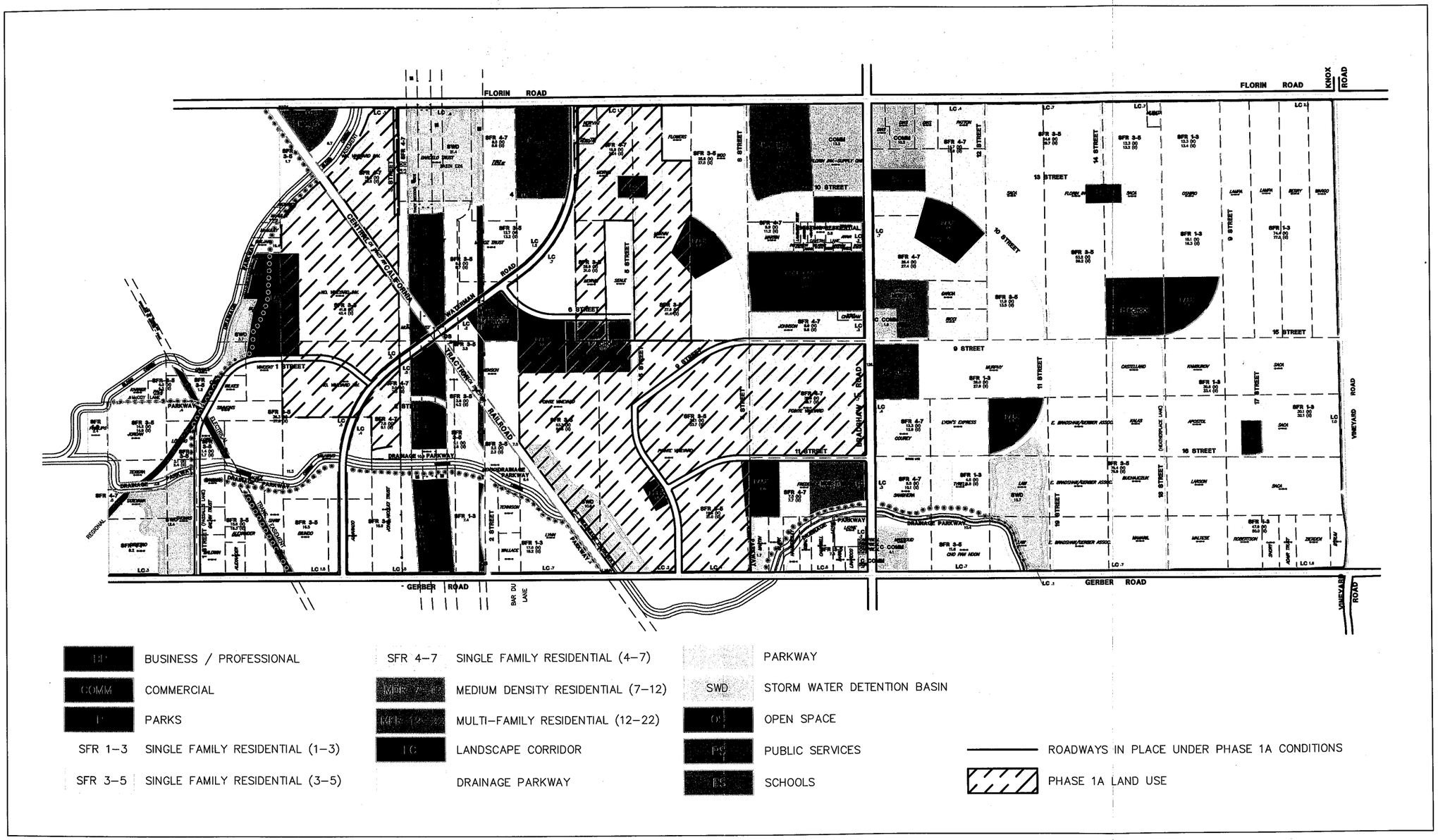
Intersection	Control	AM Peak Hour		PM Peak Hour	
		Delay / V/C	LOS	Delay / V/C	LOS
1. SR 16/S. Watt Ave.	Signal[1]	0.99	E	**1.02**	F
2. SR 16/Bradshaw Rd.	Signal	0.99	E	0.84	D
3. SR 16/Excelsior Rd.	2-Way Stop[2]	5.5	B	1.9	A
4. Elder Creek Rd./S. Watt Ave.	4-Way Stop[3]	19.2	C	40.8	E
5. Elder Creek Rd./Bradshaw Rd.	Signal	0.63	B	0.51	A
6. Elder Creek Rd./Excelsior Rd.	2-Way Stop	1.3	A	1.6	A
7. Florin Rd./Elk Grove-Florin Rd.	Signal	0.38	A	0.52	A
8. Florin Rd./Bradshaw Rd.	Signal	0.54	A	0.55	A
9. Florin Rd./Excelsior Rd.	4-Way Stop	27.8	D	8.5	B
10. Gerber Rd./Elk Grove-Florin Rd.	Signal	0.48	A	0.71	C
11. Gerber Rd./Bradshaw Rd.	Signal	0.54	A	0.43	A
12. Gerber Rd./Vineyard Rd.	2-Way Stop	1.7	A	0.9	A
13. Gerber Rd./Excelsior Rd.	2-Way Stop	11.2	C	4.7	A
14. Calvine Rd./Elk Grove-Florin Rd.	Signal	0.50	A	0.70	B
15. Calvine Rd./Waterman Rd.	Signal	0.52	A	0.41	A
16. Calvine Rd./Bradshaw Rd.[4]	Signal	0.40	A	0.34	A
17. Calvine Rd./Vineyard Rd.	2-Way Stop	0.8	A	0.9	A
18. Calvine Rd./Excelsior Rd.	4-Way Stop	12.7	C	12.1	C

Notes: **Bold** – Unacceptable LOS according to County (LOS E) standards.
[1] Signal Control- Circular 212 Planning Methodology- Results present volume/capacity ratio and LOS.
[2] 2-Way Stop Control- 1994 HCM Unsignalized Methodology- Results present delay (seconds/vehicle) and LOS.
[3] 4-Way Stop Control- 1994 HCM Unsignalized Methodology- Results present delay (seconds/vehicle) and LOS.

[4] Assumed signal control, consistent with widening of Bradshaw Road (two to four lanes - Calvine Road to SR 16).

Source: Fehr & Peers Associates, 2002.

Plate TC -5
North Vineyard Station Land Use Diagram – Phase 1A



Pointe Vineyard **–** Primary access to Gerber Road from 5 Street and secondary access to Bradshaw Road from 9 Street. An alternative secondary access could be provided to Bradshaw Road from 11 Street; and

Morvai Property – Primary access to Florin Road and secondary access to Gerber Road from Waterman Road and 6 Street across the Central California Traction Railroad easement.

Please note that extending Waterman Road across the Central California Traction Railroad will require approval from the California Public Utilities Commission.

TRIP GENERATION AND DISTRIBUTION

Trip generation estimates for Phase 1A were developed based on trip rates from *Trip Generation,* Institute of Transportation Engineers, 6th Edition, 1997. Phase 1A includes residential, school, and park/recreational uses, including 1,543 single-family dwelling units and a 1.5-acre neighborhood park. Table 7-6 summarizes the estimated daily, a.m. peak hour, and p.m. peak hour trip generation for Phase 1A.

Table 7-6
Trip Generation Estimates for Phase 1A

Land Use	Amount	Trip Rate [1]			Phase 1A Trips		
		Daily	AM Peak Hour	PM Peak Hour	Daily	AM Peak Hour	PM Peak Hour
Single-Family Residential	1,543 units	9.57	0.75	1.01	14,767	1,157	1,558
				Total	**14,767**	**1,157**	**1,558**

Notes: [1]Based on *Trip Generation,* Institute of Transportation Engineers, 6th Edition, 1997.

Since Phase 1A lacks complementary land uses (i.e., employment and retail land uses), trips generated by the single-family residential units were assumed to be external to the development (i.e., have destinations outside of the specific plan area). The parks and school site located in the Pointe Vineyard and Morvai properties were not assumed as part of Phase 1A because they straddle multiple parcels. Trips generated by these uses are accounted for in the Year 2015 with buildout of the NVSSP analysis.

Phase 1A trips were added to the Year 2002 daily, a.m. peak hour, and p.m. peak hour traffic volumes based on the directional distribution of project trips shown in Plate TC -6, which is consistent with the distribution used in the 1996 traffic analysis. The resulting daily and peak hour volumes were used to identify project related deficiencies.

ROADWAY ANALYSIS

Plate TC -7 displays daily traffic volumes for Year 2002 conditions with Phase 1A. These forecasts were compared to the roadway capacity thresholds presented in Table

7-1 to determine if the addition of Phase 1A trips will cause roadway deficiencies. Table 7-7 summarizes the results of the arterial roadway analysis.

The addition of Phase 1A trips will cause the segment of S. Watt Avenue between SR 16 and Elder Creek Road to decline from LOS D to LOS F and will cause the segment of Gerber Road between Elk Grove-Florin Road and Bradshaw Road to decline from LOS E to LOS F. Gerber Road east of Elk Grove-Florin Road has a substandard roadway cross-section characterized by narrow travel lanes and shoulder width and was analyzed using the rural two-lane roadway capacities identified in Table 7-1.

In addition, Phase 1A trips will increase the V/C ratio by 0.05 or more on the following facilities that operate at LOS F under 2002 conditions without Phase 1A:

- S. Watt Avenue – (North of SR 16); and
- Elk Grove-Florin Road – (Florin Road to Gerber Road).

INTERSECTION ANALYSIS

The a.m. and p.m. peak hour intersection turning movements and lane configurations shown on Plate TC -8 were used to calculate the levels of service at each study intersection for Year 2002 conditions with Phase 1A. The level of service at each study intersection is presented in Table 8-8. As shown, the addition of Phase 1A trips will cause deficiencies at the following intersections:

SR 16/S. Watt Avenue – The addition of project trips will cause LOS F operations during the a.m. peak hour and will increase the V/C ratio by more than 0.05 during the p.m. peak hour;

SR 16/Bradshaw Road – The addition of project trips will cause LOS F operations during the a.m. peak hour; and

Elder Creek Road/S. Watt Avenue – The addition of project trips will cause LOS F operations during the p.m. peak hour.

Plate TC -6
Project Trip Distribution

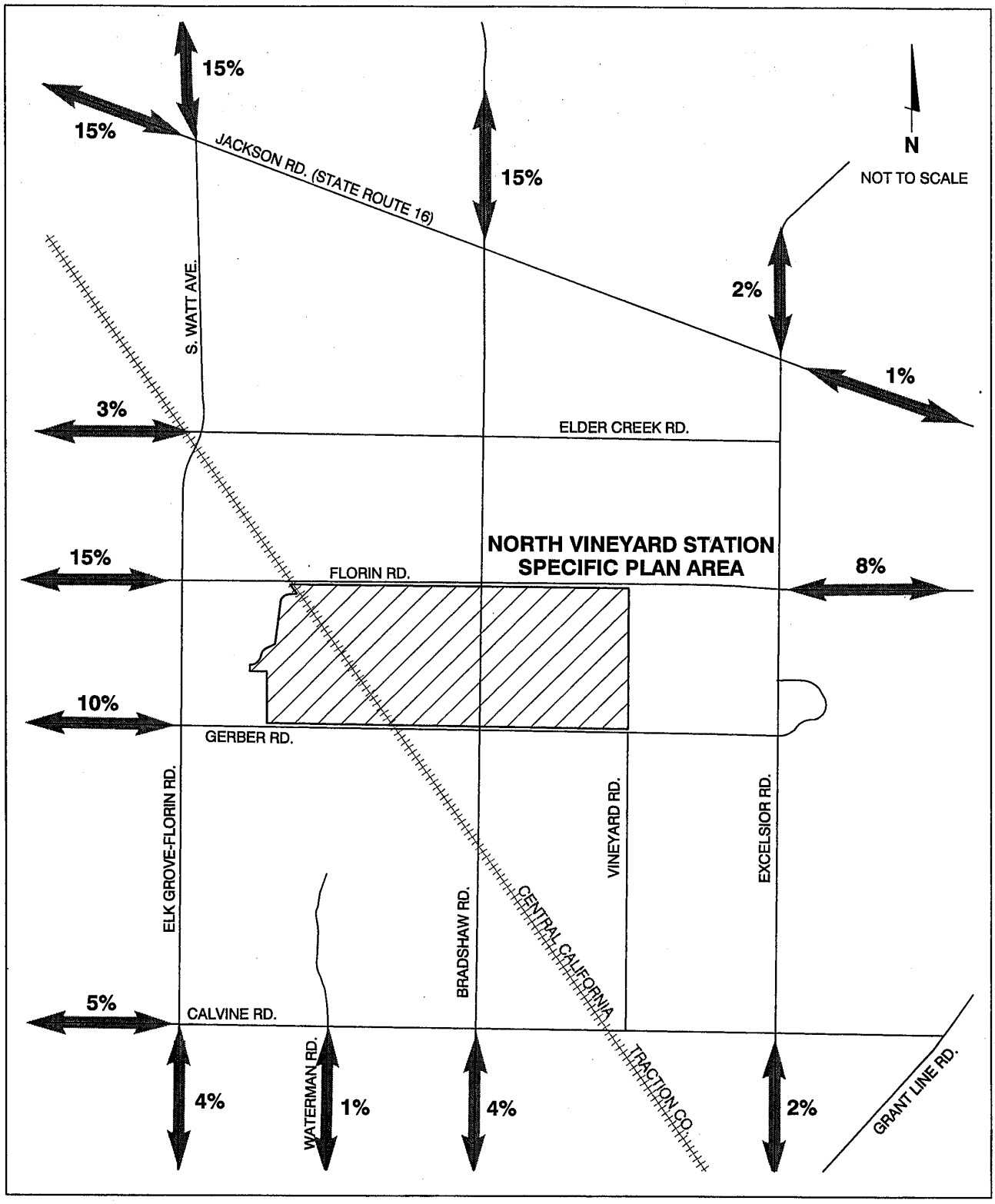


Plate TC -7
Average Daily Traffic Volumes – Phase 1A

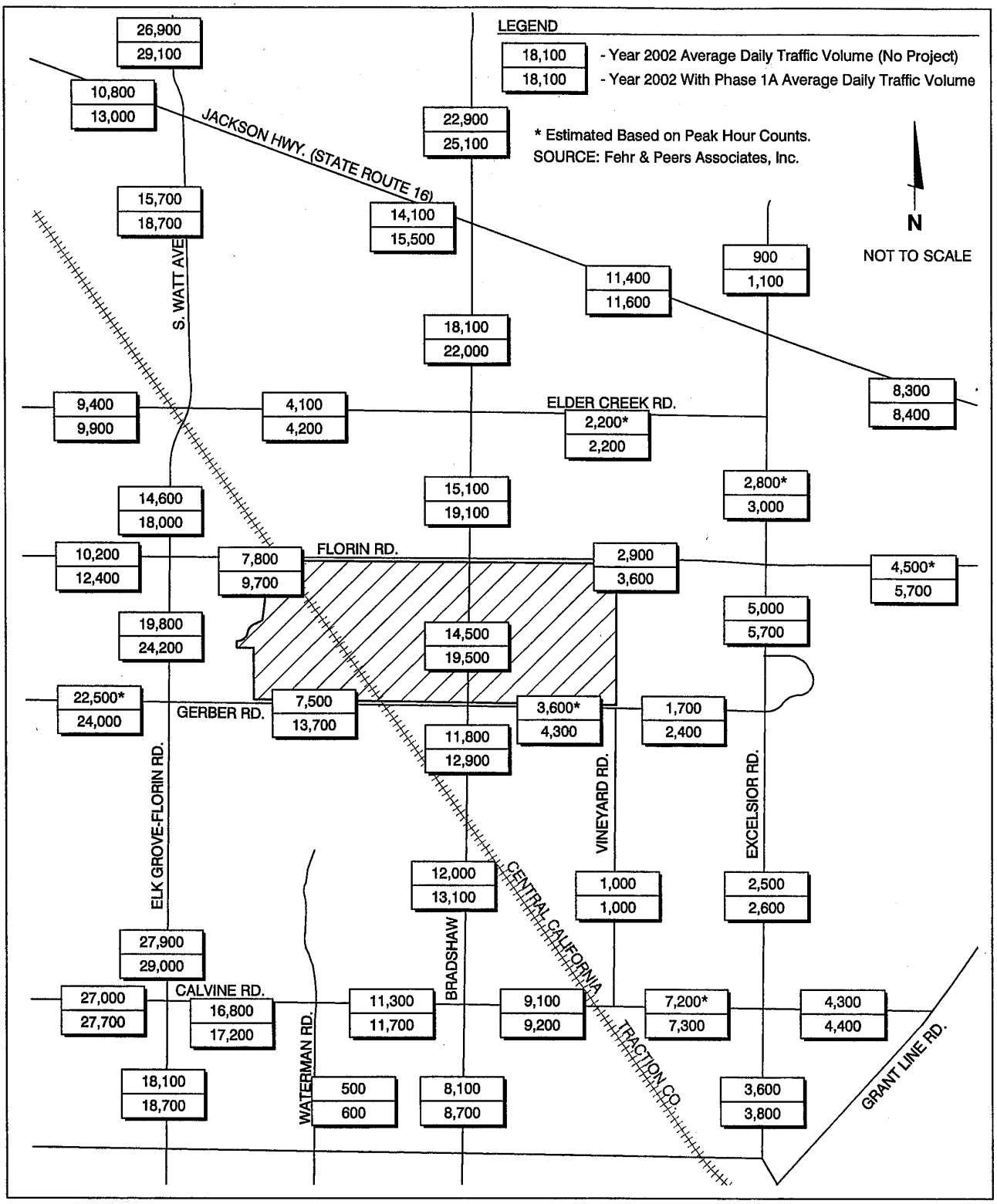


Table 7-7
Roadway Analysis – Year 2002 Conditions with Phase 1A

Roadway Segment	Year 2002 Conditions Without Phase 1A			Year 2002 Conditions With Phase 1A		
	Lanes	Volume	LOS	Lanes	Volume	LOS
SR 16 – West of S. Watt Ave.	2	10,800	D	2	13,000	D
SR 16 – S. Watt Ave. to Bradshaw Rd.	2	14,100	E	2	15,500	E
SR 16 – Bradshaw Rd. to Excelsior Rd.	2	11,400	D	2	11,600	D
SR 16 – East of Excelsior Rd.	2	8,300	D	2	8,400	D
Elder Creek Rd. – West of S. Watt Ave.	2	9,400	A	2	9,900	A
Elder Creek Rd. – S. Watt Ave. to Bradshaw Rd.	2	4,100	A	2	4,200	A
Elder Creek Rd. – Bradshaw Rd. to Excelsior Rd.	2	2,200	A	2	2,200	A
Florin Rd. – West of S. Watt Ave.	2	10,200	A	2	12,400	B
Florin Rd. – S. Watt Ave. to Bradshaw Rd.	2	7,800	A	2	9,700	A
Florin Rd. – Bradshaw Rd. to Excelsior Rd.	2	2,900	A	2	3,600	A
Florin Rd. – East of Excelsior Rd.	2	4,500	A	2	5,700	A
Gerber Rd. – West of Elk Grove-Florin Rd.	4	22,500	B	4	24,000	B
Gerber Rd. – Elk Grove-Florin Rd. to Bradshaw Rd.	2	7,500	E	2	13,700	F
Gerber Rd. – Bradshaw Rd. to Vineyard Rd.	2	3,600	C	2	4,300	C
Gerber Rd. – Vineyard Rd. to Excelsior Rd.	2	1,700	B	2	2,400	B
Calvine Rd. – West of Elk Grove-Florin Rd.	4	27,000	C	4	27,700	C
Calvine Rd. – Elk Grove-Florin Rd. to Waterman Rd.	4	16,800	A	4	17,200	A
Calvine Rd. – Waterman Rd. to Bradshaw Rd. [1]	4	11,300	A	4	11,700	A
Calvine Rd. – Bradshaw Rd. to Vineyard Rd. [1]	4	9,100	A	4	9,200	A
Calvine Rd. – Vineyard Rd. to Excelsior Rd.	2	7,200	A	2	7,300	A
Calvine Rd. – Excelsior Rd. to Grant Line Rd.	2	4,300	A	2	4,400	A
S. Watt Avenue – North of SR 16	2	26,900	F	2	29,100	F
S. Watt Avenue – SR 16 to Elder Creek Rd.	2	15,700	D	2	18,700	F
S. Watt Avenue – Elder Creek Rd. to Florin Rd.	2	14,600	D	2	18,000	E
Elk Grove-Florin Rd. – Florin Rd. to Gerber Rd.	2	19,800	F	2	24,200	F
Elk Grove-Florin Rd. – Gerber Rd. to Calvine Rd.	4	27,900	C	4	29,000	D
Elk Grove-Florin Rd. – South of Calvine Rd.	4	18,100	A	4	18,700	A
Waterman Rd. – South of Calvine Rd.	2	500	A	2	600	A
Bradshaw Rd. – North of SR 16	4	22,900	B	4	25,100	B
Bradshaw Rd. – SR 16 to Elder Creek Rd. [2]	4	18,100	A	4	22,000	B
Bradshaw Rd. – Elder Creek Rd. to Florin Rd. [2]	4	15,100	A	4	19,100	A
Bradshaw Rd. – Florin Rd. to Gerber Rd. [2]	4	14,500	A	4	19,500	A
Bradshaw Rd. – Gerber Rd. to Calvine Rd. [2]	4	12,000	A	4	13,100	A
Bradshaw Rd. – South of Calvine Rd.	2	8,100	A	2	8,700	A
Vineyard Rd. – Gerber Rd. to Calvine Rd.	2	1,000	A	2	1,000	A
Excelsior Rd. – North of SR 16	2	900	A	2	1,100	A
Excelsior Rd. – Elder Creek Rd. to Florin Rd.	2	2,800	C	2	3,000	C
Excelsior Rd. – Florin Rd. to Gerber Rd.	2	5,000	D	2	5,700	D
Excelsior Rd. – Gerber Rd. to Calvine Rd.	2	2,500	B	2	2,600	B
Excelsior Rd. – South of Calvine Rd.	2	3,600	C	2	3,800	C

Notes: **Bold** – Unacceptable LOS according to County (LOS E) standards.
[1]Assumes widening of Calvine Road to 4 lanes (Kingsbridge Drive to Bradshaw).
[2]Assumes widening of Bradshaw Road to 4 lanes (Calvine Road to SR 16).
Source: Sacramento County Traffic Impact Guidelines (July 24, 1997) and Fehr & Peers Associates, 2002.

Table 7-8
Peak Hour Intersection Operations – Year 2002 Conditions with Phase 1A

Intersection	Control	Year 2002 Without Phase 1A				Year 2002 With Phase 1A			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Delay / V/C	LOS	Delay / V/C	LOS	Delay / V/C	LOS	Delay / V/C	LOS
1. SR 16/S. Watt Ave.	Signal[1]	0.99	E	**1.02**	F	**1.08**	F	**1.19**	F
2. SR 16/Bradshaw Rd.	Signal	0.99	E	0.84	D	**1.04**	F	0.93	E
3. SR 16/Excelsior Rd.	2-Way Stop[2]	5.5	B	1.9	A	6.0	B	2.2	A
4. Elder Creek Rd./S. Watt Ave.	4-Way Stop[3]	19.2	C	40.8	E	40.1	E	**>45.0**	F
5. Elder Creek Rd./Bradshaw Rd.	Signal	0.63	B	0.51	A	0.70	B	0.59	A
6. Elder Creek Rd./Excelsior Rd.	2-Way Stop	1.3	A	1.6	A	1.2	A	1.6	A
7. Florin Rd./Elk Grove-Florin Rd.	Signal	0.38	A	0.52	A	0.47	A	0.66	B
8. Florin Rd./Bradshaw Rd.	Signal	0.54	A	0.55	A	0.63	B	0.67	B
9. Florin Rd./Excelsior Rd.	4-Way Stop	27.8	D	8.5	B	35.7	E	11.1	C
10. Gerber Rd./Elk Grove-Florin Rd.	Signal	0.48	A	0.71	C	0.57	A	0.73	C
11. Gerber Rd./Bradshaw Rd.	Signal	0.54	A	0.43	A	0.62	B	0.52	A
12. Gerber Rd./Vineyard Rd.	2-Way Stop	1.7	A	0.9	A	1.7	A	0.8	A
13. Gerber Rd./Excelsior Rd.	2-Way Stop	11.2	C	4.7	A	13.4	C	4.9	A
14. Calvine Rd./Elk Grove-Florin Rd.	Signal	0.50	A	0.70	B	0.53	A	0.72	C
15. Calvine Rd./Waterman Rd.	Signal	0.52	A	0.41	A	0.53	A	0.42	A
16. Calvine Rd./Bradshaw Rd.[4]	Signal	0.40	A	0.34	A	0.41	A	0.37	A
17. Calvine Rd./Vineyard Rd.	2-Way Stop	0.8	A	0.9	A	0.8	A	0.9	A
18. Calvine Rd./Excelsior Rd.	4-Way Stop	12.7	C	12.1	C	13.2	C	11.6	C

Notes: **Bold** – Unacceptable LOS according to County (LOS E) standards.

[1] Signal Control- Circular 212 Planning Methodology- Results present volume/capacity ratio and LOS.

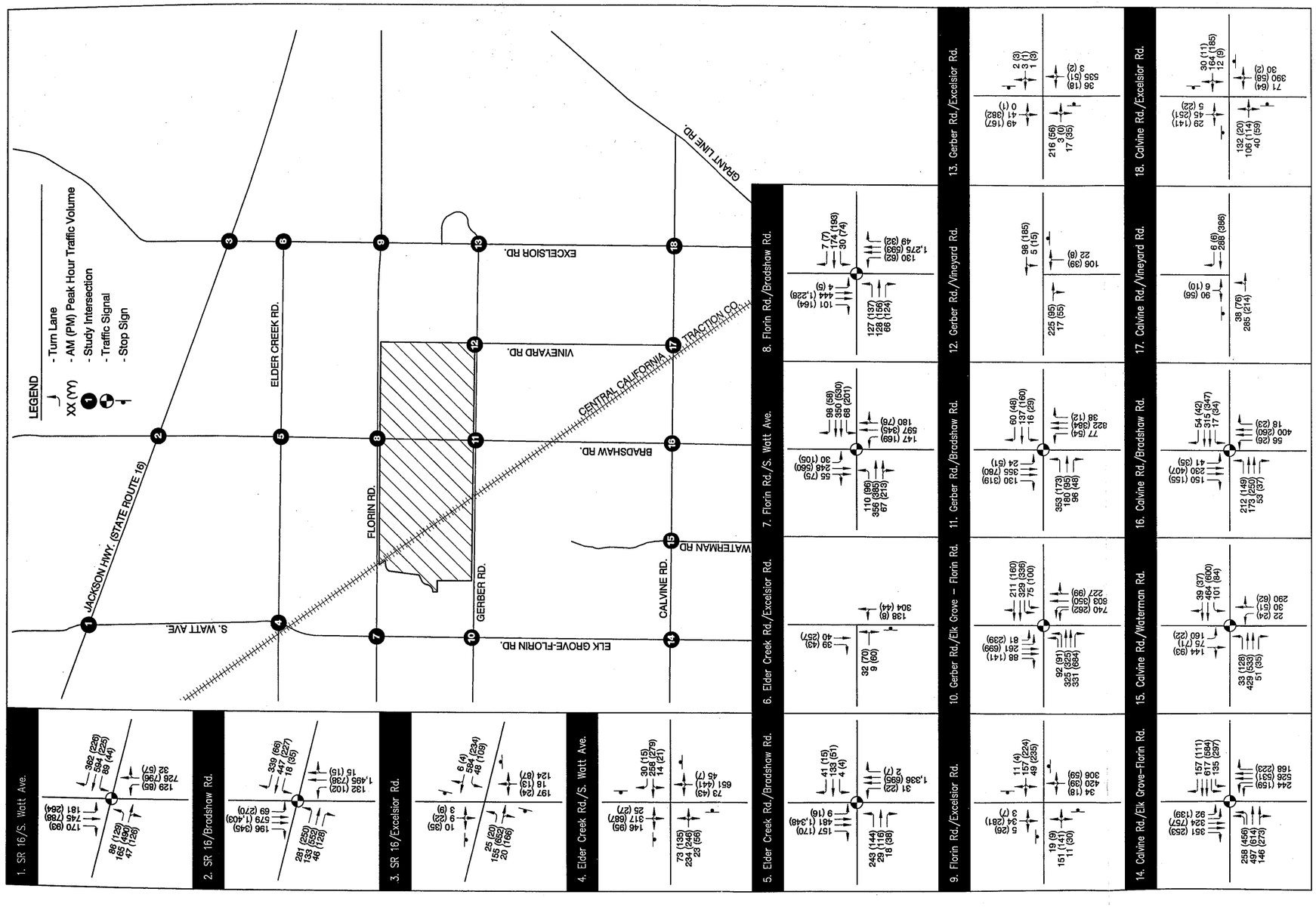
[2] 2-Way Stop Control- 1994 HCM Unsignalized Methodology- Results present delay (seconds/vehicle) and LOS.

[3] 4-Way Stop Control- 1994 HCM Unsignalized Methodology- Results present delay (seconds/vehicle) and LOS.

[4] Assumed signal control, consistent with widening of Bradshaw Road (two to four lanes - Calvine Road to SR 16).

Source: Fehr & Peers Associates, 2002.

Plate TC -8
Peak Hour Traffic Volumes and Lane Configurations
Year 2002 With Phase 1A



PROJECT IMPACTS

Based on the roadway and intersection analysis, the addition of Phase 1A trips will cause or contribute to deficiencies at the following study locations under Year 2002 conditions: These impacts are considered significant.

STUDY ROADWAYS

- S. Watt Avenue – (North of SR 16);
- S. Watt Avenue – (SR 16 to Elder Creek Road);
- Elk Grove-Florin Road – (Florin Road to Gerber Road);
- Gerber Road – (Elk Grove-Florin Road to Bradshaw Road);

STUDY INTERSECTIONS

- SR 16/S. Watt Avenue;
- SR 16/Bradshaw Road; and
- Elder Creek Road/S. Watt Avenue.

MITIGATION MEASURES FOR PHASE 1A

The following improvements will eliminate deficiencies caused by the addition of Phase 1A trips, and reduce impacts to less-than-significant. The study roadway and intersection improvements recommended in the NVSSP DEIR (July 1997) for existing plus project conditions are also summarized below.

STUDY ROADWAYS MITIGATION MEASURES

TC-1. S. Watt Avenue (North of SR 16) – Widening this segment from two to four lanes will improve operations to LOS D.

This study roadway segment was not impacted under existing plus project conditions in the NVSSP DEIR.

TC-2. S. Watt Avenue (SR 16 to Elder Creek Road) – Widening this segment from two to four lanes will improve operations to LOS A.

This improvement was also recommended in the NVSSP DEIR for existing plus project conditions.

TC-3. Elk Grove-Florin Road (Florin Road to Gerber Road) – Widening this segment from two to four lanes will improve operations to LOS B.

This improvement was also recommended in the NVSSP DEIR for existing plus project conditions.

TC-4. Gerber Road (Elk Grove-Florin Road to Bradshaw Road) – Improving the roadway cross-section to include minimum 12-foot travel lanes and 6-foot shoulders will improve operations to LOS C.

The NVSSP DEIR recommended widening this segment from two to four lanes under existing plus project conditions.

STUDY INTERSECTIONS MITIGATION MEASURES

TC-5. SR 16/S. Watt Avenue – Widening the northbound and southbound approaches to include an additional through lane will improve operations to LOS D during the a.m. and p.m. peak hours. This improvement is consistent with the recommended widening of S. Watt Avenue to four lanes between Elder Creek Road and SR 16.

The NVSSP DEIR recommended modifying this intersection to include a separate left-turn lane, two through lanes, and a separate right-turn lane on all approaches under existing plus project conditions.

TC-6. SR 16/Bradshaw Road – Widening the eastbound approach to include dual left-turn lanes will improve operations to LOS E during the a.m. peak hour.

Evaluation of other Public Facility Financing Plans revealed that the Sunridge Public Facility Financing Plan includes improvements at the State Route 16 and Bradshaw Road intersection. The proposed improvements are expansion of the intersection to accommodate two left turn lanes, two through lanes and one right turn lane on all approaches. It is likely that right-of-way will need to be acquired to provide the proposed improvements. The improvement is included in Phase 1 on the Sunridge Public Facility Financing Plan, which would mean that the improvement would be constructed in the next 5 years. With those improvements, the intersection level of service would improve to LOS D in the a.m. peak hour and LOS C in the p.m. peak hour, with build out of Phase 1A of the North Vineyard Station Specific Plan.

The NVSSP DEIR recommended modifying this intersection to include dual left-turn lanes, two through lanes, and a separate right-turn lane on the northbound and southbound approaches and a separate left-turn lane, a through lane, and a separate right-turn lane on the eastbound and westbound approaches under existing plus project conditions.

TC-7. Elder Creek Road/S. Watt Avenue – Installing a traffic signal and widening each approach to include an exclusive left-turn lane and a shared through/right-turn lane will improve operations to LOS D during the p.m. peak hour.

The NVSSP DEIR recommended modifying this intersection to include a traffic signal and a left-turn lane, two through lanes, and a separate right-turn

lane on the northbound and southbound approaches and a left-turn lane and a shared through/right-turn lane on the eastbound and westbound approaches under existing plus project conditions.

RECOMMENDED IMPROVEMENTS

Based on discussions with Sacramento County Department of Public Works, the following improvements shall be implemented prior to the construction of Phase 1A:

Improve the existing two lane cross section of Gerber Road between Elk Grove-Florin Road and Bradshaw Road to include a minimum of 12-foot travel lanes and 6-foot shoulders; and

Install a traffic signal at the Elder Creek Road/S. Watt Avenue intersection and widen each approach to include an exclusive left-turn lane and a shared through/right-turn lane.

STAGE 1 OF PHASE 1A

Initial development (Stage 1) within Phase 1A of the NVSSP will include approximately 600 dwelling units. Additional analysis was conducted at the Elder Creek Road/S. Watt intersection, which operates at LOS E during the p.m. peak hour under Year 2002 no project conditions, to determine the number of dwelling units that could be constructed in Stage 1 of Phase 1A before the improvements at the intersection (outlined above) were necessary. About 150 units could be constructed in Stage 1 of Phase 1A before the LOS at the Elder Creek Road/S. Watt intersection operates worse than County standards.

YEAR 2005 CONDITIONS

Phase 1B of the NVSSP was analyzed under Year 2005 conditions to determine if development of the project, in addition to background growth, will adversely affect the planned roadway system in the Year 2005.

YEAR 2005 WITHOUT PHASE 1B CONDITIONS

The following discusses the roadway network and traffic operations under Year 2005 conditions without the implementation of the proposed project.

ROADWAY NETWORK

The following roadway improvement is planned to occur by the Year 2005:

- S. Watt Avenue will be widened to four lanes from Elder Creek Road to north of SR 16.

Plate TC -9 displays the planned number of lanes on each roadway segment under Year 2005 conditions. In addition, the recommended improvements under Year 2002 with Phase 1A conditions (i.e., improving Gerber Road from Elk Grove-Florin Road to Bradshaw Road and installing a traffic signal at the Elder Creek Road/S. Watt Avenue intersection) were assumed to be in place by Year 2005.

TRAFFIC VOLUMES

The 1999 version of the SACMET Regional Travel Demand Forecasting (TDF) model was used to develop Year 2005 daily and peak hour traffic volumes. The Year 2005 model was updated to include the planned roadway improvements listed above. Land uses within the project site remained at Year 2002 levels of development. Plate TC -10 and Plate TC -11 display the Year 2005 daily and a.m. and p.m. peak hour traffic volumes, respectively.

ROADWAY ANALYSIS

The daily volumes shown on Plate TC -10 were compared to the roadway capacity thresholds presented in Table 7-1. Table 7-9 summarizes the results of the arterial roadway analysis. The study roadways will operate acceptably in Year 2005 (without Phase 1B) except for the following:

- S. Watt Avenue (North of SR 16);
- S. Watt Avenue (Elder Creek Road to Florin Road); and
- Elk Grove-Florin Road (Florin Road to Gerber Road).

INTERSECTION ANALYSIS

The Year 2005 a.m. and p.m. peak hour intersection turning movements and lane configurations displayed in Plate TC -11 were used to calculate the levels of service at each study intersection. Table 7-10 summarizes the results of this analysis. Improvements were assumed at the following intersections, consistent with the widening of S. Watt Avenue from two to four lanes from Elder Creek Road to SR 16:

- SR 16/S. Watt Avenue; and
- Elder Creek Road/S. Watt Avenue.

As shown in Table 7-10, the following intersections will operate acceptably in 2005 (without Phase 1B) except for the following:

SR 16/Bradshaw Road operates at LOS F during the a.m. peak hour;

- Florin Road/Excelsior Road operates at LOS F during the a.m. peak hour; and
- Gerber Road/Excelsior Road operates at LOS F during the a.m. peak hour.

Year 2005 With Phase 1B Conditions

Traffic operations of the study roadways and intersections were analyzed under Year 2005 conditions with the addition of trips generated by Phase 1B of the NVSSP.

ROADWAY NETWORK

The Year 2005 roadway network with Phase 1B includes the additional north-south roadways that provide alternative routes within the project vicinity. Plate TC -12 displays Phase 1B, which assumes the development of Phase 1A, of the NVSSP and shows the location of the proposed roadways serving the project site.

Plate TC -9
Year 2005 Roadway System

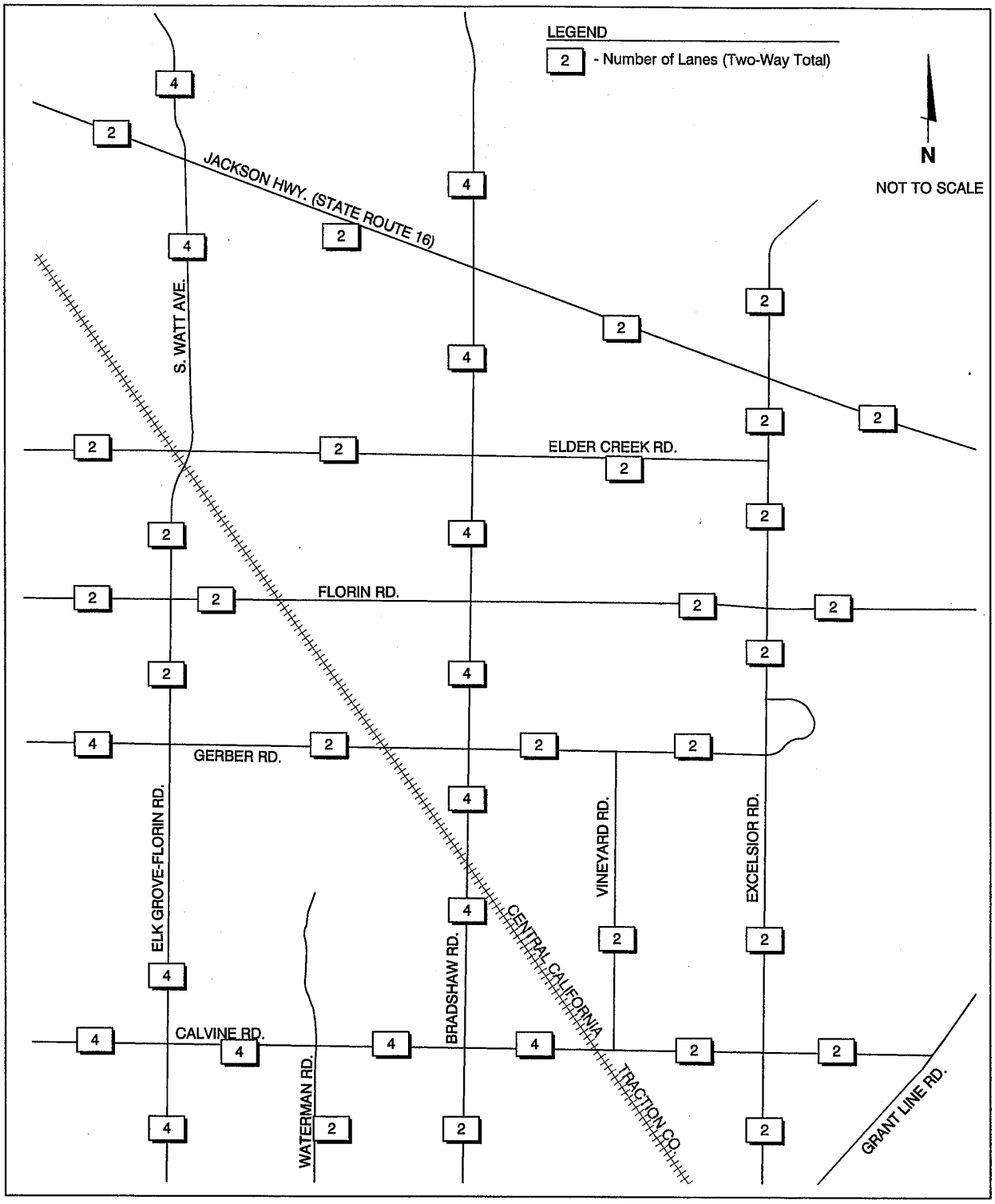


Plate TC -10
Average Daily Traffic Volumes
Year 2005 Without Phase 1B

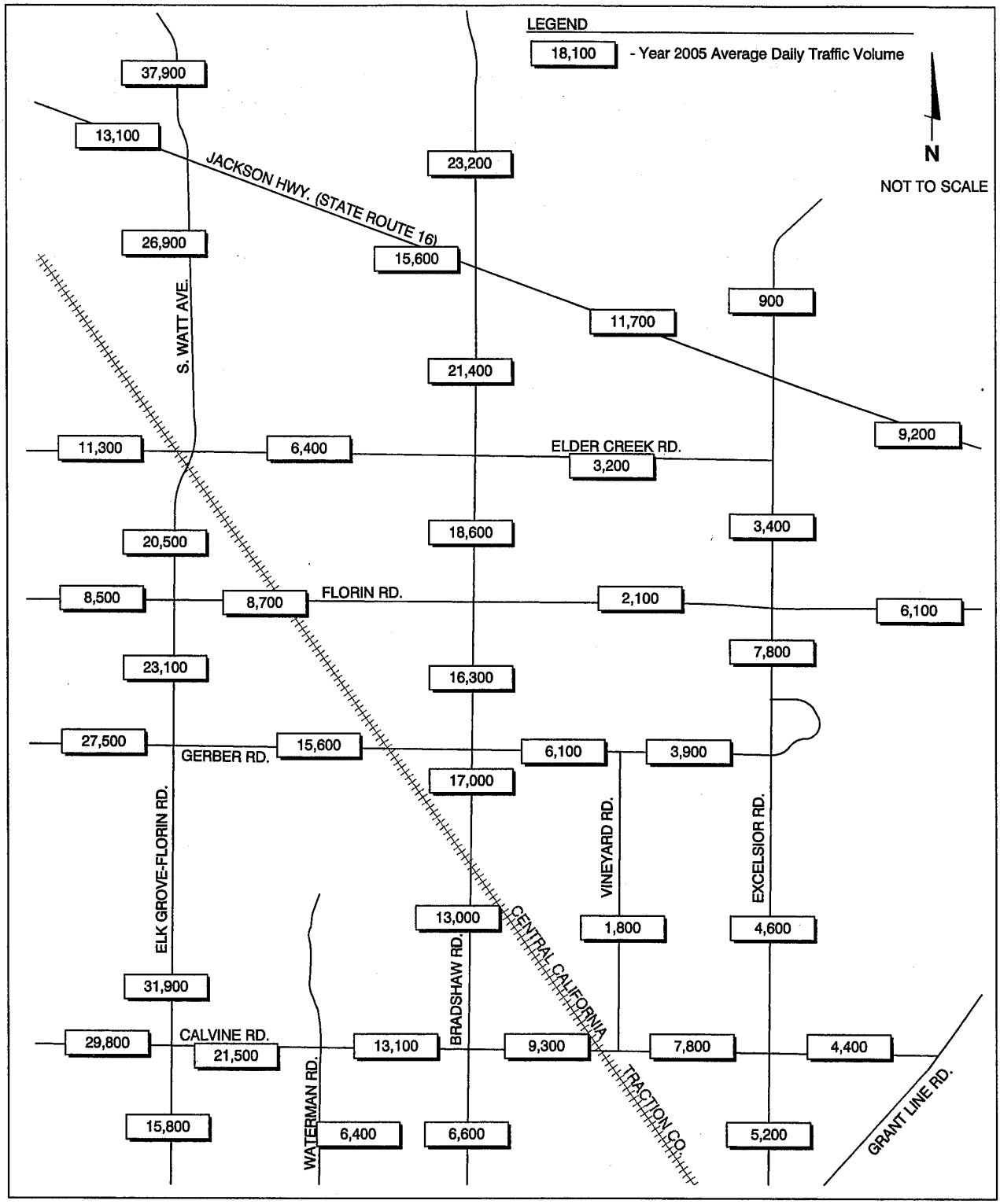


Plate TC -11
Peak Hour Traffic Volumes and Lane Configurations
Year 2005 Without Phase 1B

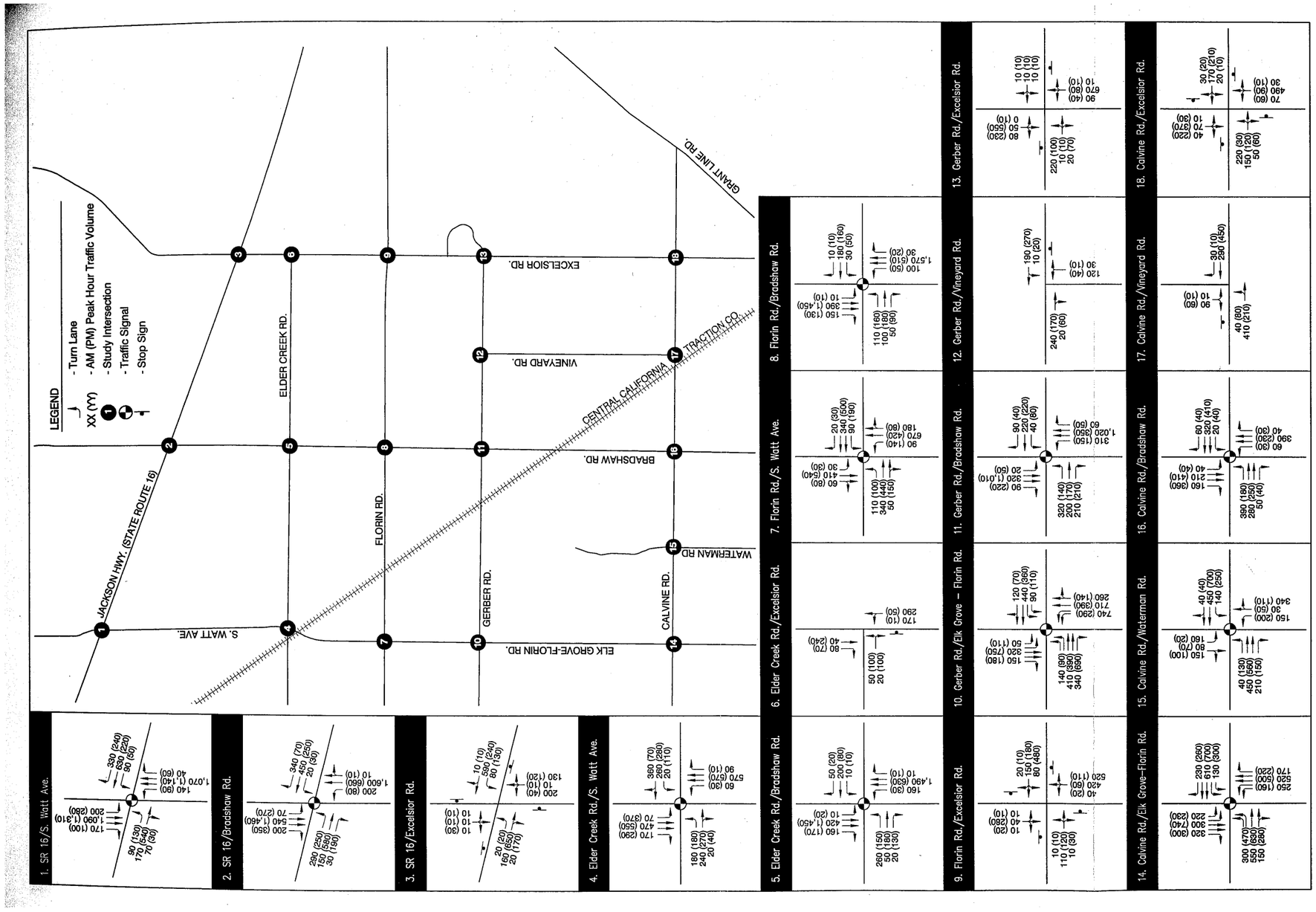


Table 7-9
Roadway Analysis – Year 2005 Conditions Without Phase 1B

Roadway Segment	Year 2005 Conditions		
	Lanes	Volume	LOS
SR 16 – West of S. Watt Ave.	2	13,100	D
SR 16 – S. Watt Ave. to Bradshaw Rd.	2	15,600	E
SR 16 – Bradshaw Rd. to Excelsior Rd.	2	11,700	D
SR 16 – East of Excelsior Rd.	2	9,200	D
Elder Creek Rd. – West of S. Watt Ave.	2	11,300	B
Elder Creek Rd. – S. Watt Ave. to Bradshaw Rd.	2	6,400	A
Elder Creek Rd. – Bradshaw Rd. to Excelsior Rd.	2	3,200	A
Florin Rd. – West of S. Watt Ave.	2	8,500	A
Florin Rd. – S. Watt Ave. to Bradshaw Rd.	2	8,700	A
Florin Rd. – Bradshaw Rd. to Excelsior Rd.	2	2,100	A
Florin Rd. – East of Excelsior Rd.	2	6,100	A
Gerber Rd. – West of Elk Grove-Florin Rd.	4	27,500	C
Gerber Rd. – Elk Grove-Florin Rd. to Bradshaw Rd.	2	15,600	D
Gerber Rd. – Bradshaw Rd. to Vineyard Road	2	6,100	D
Gerber Rd. – Vineyard Rd. to Excelsior Rd.	2	3,900	C
Calvine Rd. – West of Elk Grove-Florin Rd.	4	29,800	D
Calvine Rd. – Elk Grove-Florin Rd. to Waterman Rd.	4	21,500	A
Calvine Rd. – Waterman Rd. to Bradshaw Rd.	4	13,100	A
Calvine Rd. – Bradshaw Rd. to Vineyard Rd.	4	9,300	A
Calvine Rd. – Vineyard Rd. to Excelsior Rd.	2	7,800	A
Calvine Rd. – Excelsior Rd. to Grant Line Rd.	2	4,400	A
S. Watt Avenue – North of SR 16	4	37,900	F
S. Watt Avenue – SR 16 to Elder Creek Rd.	4	26,900	C
S. Watt Avenue – Elder Creek Rd. to Florin Rd.	2	20,500	F
Elk Grove-Florin Rd. – Florin Rd. to Gerber Rd.	2	23,100	F
Elk Grove-Florin Rd. – Gerber Rd. to Calvine Rd.	4	31,900	D
Elk Grove-Florin Rd. – South of Calvine Rd.	4	15,800	A
Waterman Rd. – South of Calvine Rd.	2	6,400	A
Bradshaw Rd. – North of SR 16	4	23,200	B
Bradshaw Rd. – SR 16 to Elder Creek Rd.	4	21,400	B
Bradshaw Rd. – Elder Creek Rd. to Florin Rd.	4	18,600	A
Bradshaw Rd. – Florin Rd. to Gerber Rd.	4	16,300	A
Bradshaw Rd. – Gerber Rd. to Calvine Rd.	4	17,000	A
Bradshaw Rd. – South of Calvine Rd.	2	6,600	A
Vineyard Rd. – Gerber Rd. to Calvine Rd.	2	1,800	A
Excelsior Rd. – North of SR 16	2	900	A
Excelsior Rd. – Elder Creek Rd. to Florin Rd.	2	3,400	C
Excelsior Rd. – Florin Rd. to Gerber Rd.	2	7,800	E
Excelsior Rd. – Gerber Rd. to Calvine Rd.	2	4,600	D
Excelsior Rd. – South of Calvine Rd.	2	5,200	D

Notes: **Bold** – Unacceptable LOS according to County (LOS E) standards.
Source: Sacramento County Traffic Impact Guidelines (July 24, 1997) and Fehr & Peers Associates, 2002.

Table 7-10
Peak Hour Intersection Operations – Year 2005 Conditions Without Phase 1B

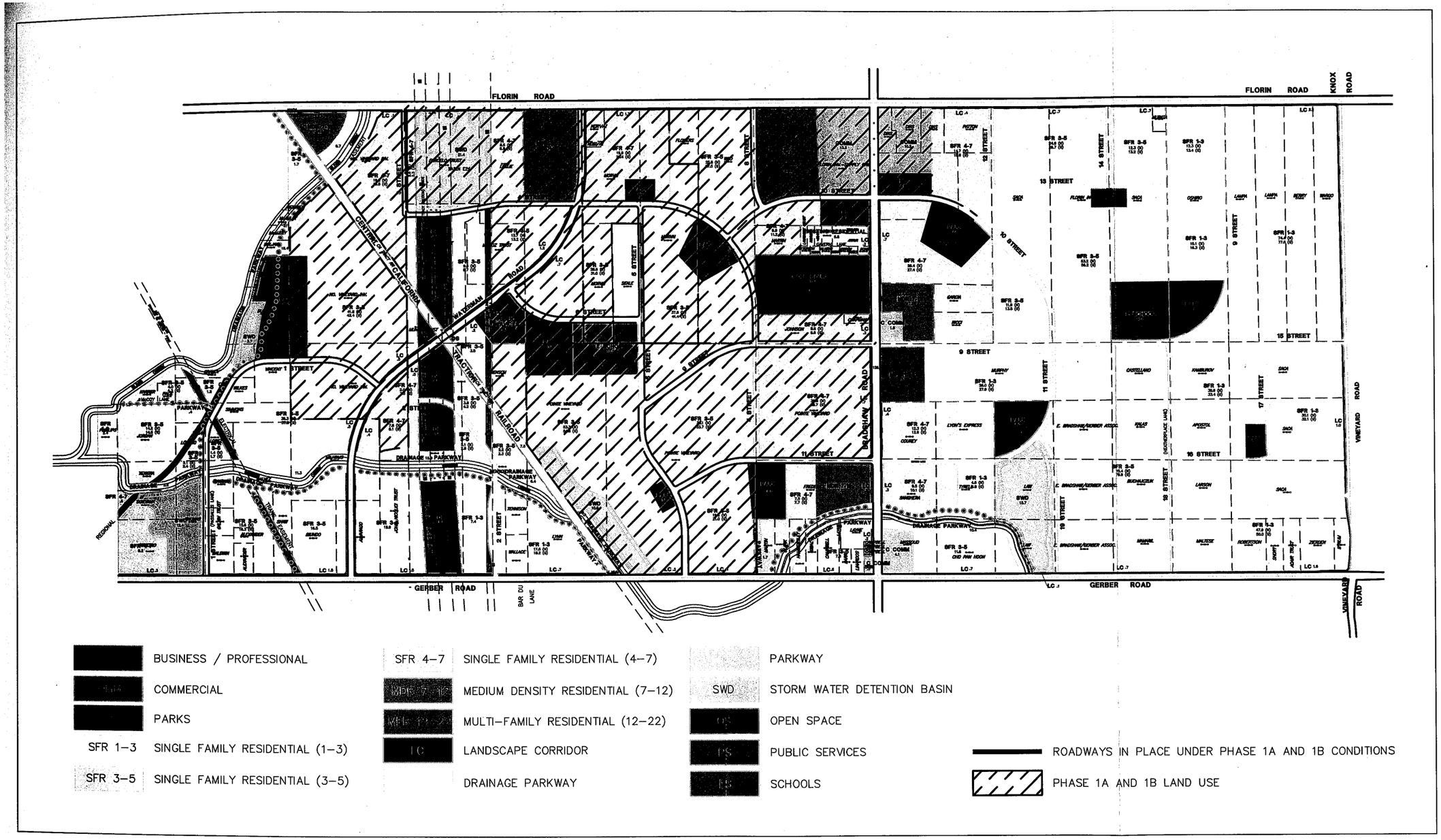
Intersection	Control	AM Peak Hour		PM Peak Hour	
		Delay / V/C	LOS	Delay / V/C	LOS
1. SR 16/S. Watt Ave.	Signal[1]	1.0	E	0.98	E
2. SR 16/Bradshaw Rd.	Signal	**1.08**	F	0.95	E
3. SR 16/Excelsior Rd.	4-Way Stop[2]	28.2	D	15.9	C
4. Elder Creek Rd./S. Watt Ave.	Signal	0.77	C	0.79	C
5. Elder Creek Rd./Bradshaw Rd.	Signal	0.81	D	0.66	B
6. Elder Creek Rd./Excelsior Rd.	2-Way Stop[3]	1.7	A	2.1	A
7. Florin Rd./Elk Grove-Florin Rd.	Signal	0.49	A	0.62	B
8. Florin Rd./Bradshaw Rd.	Signal	0.72	C	0.73	C
9. Florin Rd./Excelsior Rd.	4-Way Stop	**> 45.0**	F	23.5	D
10. Gerber Rd./Elk Grove-Florin Rd.	Signal	0.62	B	0.75	C
11. Gerber Rd./Bradshaw Rd.	Signal	0.71	C	0.68	B
12. Gerber Rd./Vineyard Rd.	2-Way Stop	1.8	A	0.7	A
13. Gerber Rd./Excelsior Rd.	2-Way Stop	**> 45.0**	F	9.9	B
14. Calvine Rd./Elk Grove-Florin Rd.	Signal	0.57	A	0.72	C
15. Calvine Rd./Waterman Rd.	Signal	0.60	A	0.60	A
16. Calvine Rd./Bradshaw Rd.	Signal	0.52	A	0.41	A
17. Calvine Rd./Vineyard Rd.	2-Way Stop	0.7	A	0.9	A
18. Calvine Rd./Excelsior Rd.	4-Way Stop	31.8	E	24.8	D

Notes: **Bold** – Unacceptable LOS according to County (LOS E) standards.
[1] Signal Control- Circular 212 Planning Methodology- Results present volume/capacity ratio and LOS.
[2] 4-Way Stop Control- 1994 HCM Unsignalized Methodology- Results present delay (seconds/vehicle) and LOS.

[3] 2-Way Stop Control- 1994 HCM Unsignalized Methodology- Results present delay (seconds/vehicle) and LOS.

Source: Fehr & Peers Associates, 2002.

Plate TC -12
North Station Land Use Diagram – Phase 1B



LAND USE

As shown in Plate TC -12, Phase 1B (which includes the development of Phase 1A) consists of the following land uses:

- 2,500 residential dwelling units;
- 23.3 acres of commercial;
- 7.1 acres of business/professional;
- 10 acres of schools; and
- 38.3 acres of parks.

The above land uses were added to the 2005 SACMET Regional TDF model based on the number of households and total retail and non-retail employment. The Sacramento Area Council of Governments' (SACOG) employment yield matrix was used to estimate the employment projections for development of Phase 1B.

TRAFFIC VOLUMES

Year 2005 traffic forecasts with Phase 1B were developed by adding the proposed project land uses and circulation system to the 2005 SACMET Regional TDF model. The TDF model was used to generate daily and peak hour traffic volumes for development of Phase 1B. This methodology accounts for 2005 development levels of local and regional land uses outside of the project site. In addition, this methodology accounts for changes in travel patterns with the additional roadways included in the NVSSP. Plate TC -13 and Plate TC -14 display the daily and peak hour traffic volumes, respectively, for Year 2005 conditions with Phase 1B.

Roadway Analysis

The daily traffic volumes displayed in Plate TC -13 were compared to the roadway capacity thresholds presented in Table 7-1 to determine if the addition of Phase 1B trips will cause roadway deficiencies. Table 7-11 summarizes the results of the arterial roadway analysis. As shown, S. Watt Avenue north of SR 16 and between Elder Creek Road and Florin Road and Elk Grove-Florin Road between Florin Road and Gerber Road will continue to operate at LOS F with the addition of project trips. However, the V/C ratio will not increase by 0.05 or more on these roadway segments. Therefore, the addition of Phase 1B trips will not cause a project deficiency.

Plate TC -13
Average Daily Traffic Traffic Volumes
Year 2005 With Phase 1B

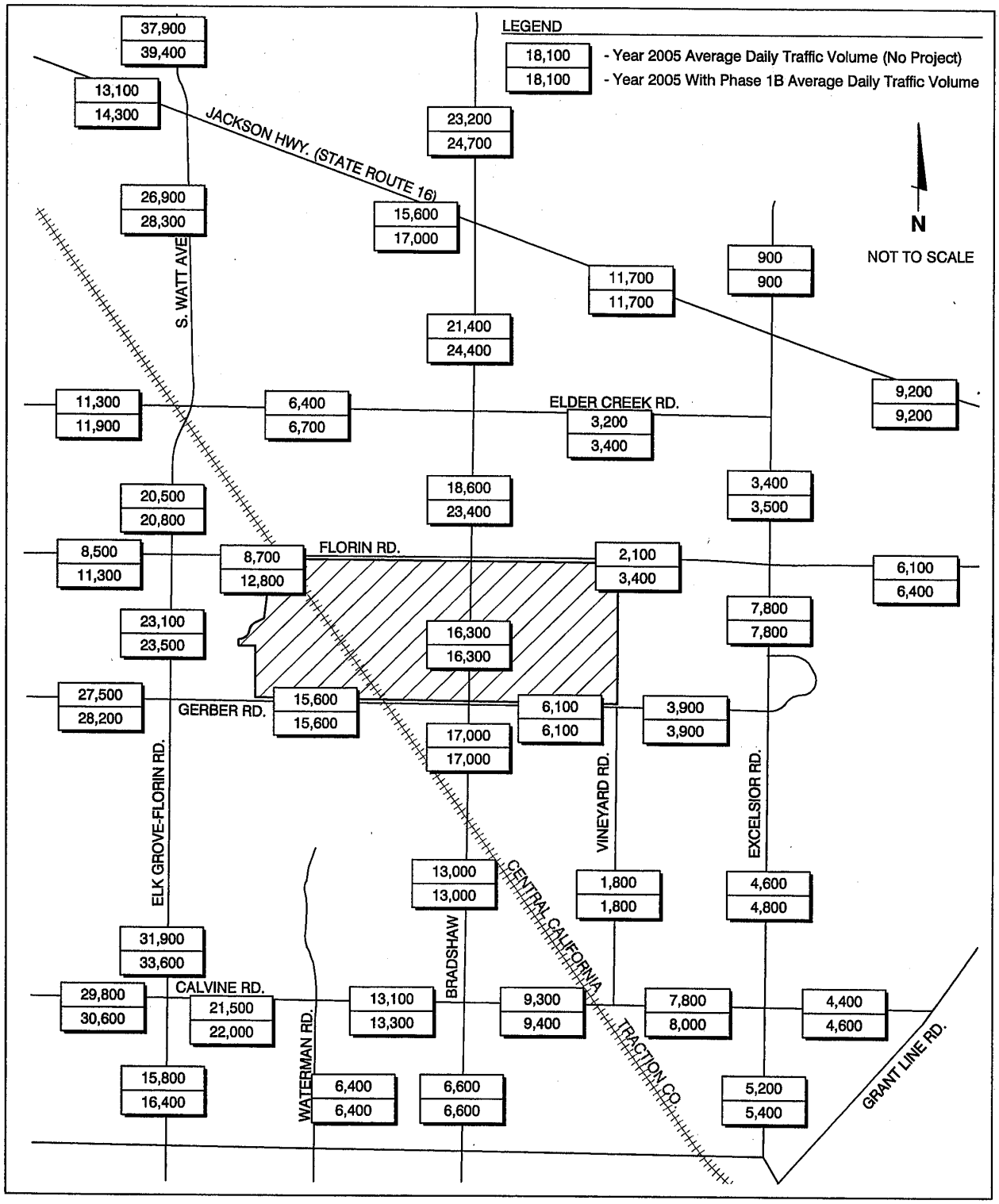


Plate TC -14
Peak Hour Traffic Volumes and Land Configurations
Year 2005 With Phase 1B

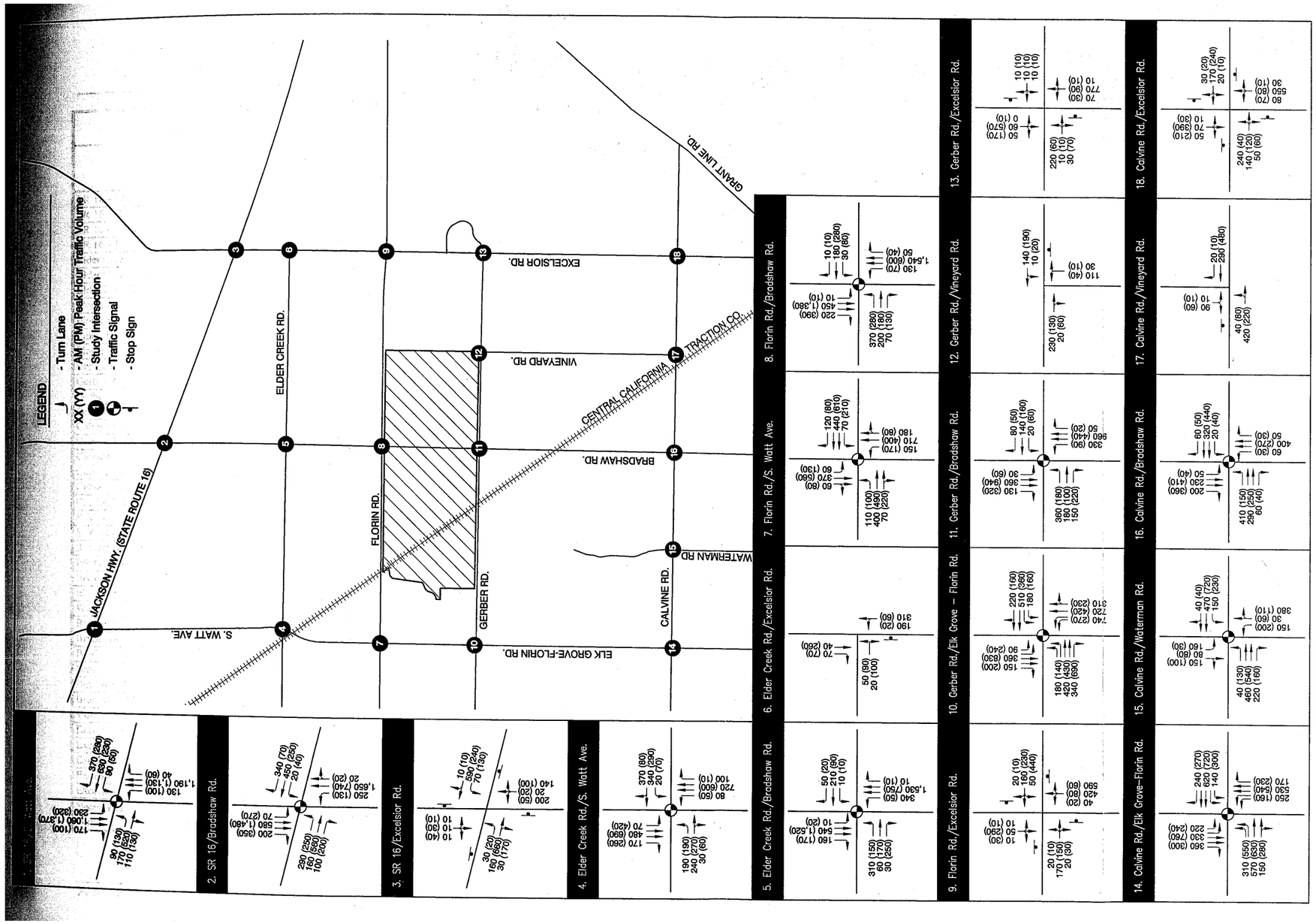


Table 7-11
Roadway Analysis – Year 2005 with Phase 1B

Roadway Segment	Year 2005 Conditions Without Phase 1B			Year 2005 Conditions With Phase 1B		
	Lanes	Volume	LOS	Lanes	Volume	LOS
SR 16 – West of S. Watt Ave.	2	13,100	D	2	14,300	E
SR 16 – S. Watt Ave. to Bradshaw Rd.	2	15,600	E	2	17,000	E
SR 16 – Bradshaw Rd. to Excelsior Rd.	2	11,700	D	2	11,700	D
SR 16 – East of Excelsior Rd.	2	9,200	D	2	9,200	D
Elder Creek Rd. – West of S. Watt Ave.	2	11,300	B	2	11,900	B
Elder Creek Rd. – S. Watt Ave. to Bradshaw Rd.	2	6,400	A	2	6,700	A
Elder Creek Rd. – Bradshaw Rd. to Excelsior Rd.	2	3,200	A	2	3,400	A
Florin Rd. – West of S. Watt Ave.	2	8,500	A	2	11,300	B
Florin Rd. – S. Watt Ave. to Bradshaw Rd.	2	8,700	A	2	12,800	C
Florin Rd. – Bradshaw Rd. to Excelsior Rd.	2	2,100	A	2	3,400	A
Florin Rd. – East of Excelsior Rd.	2	6,100	A	2	6,400	A
Gerber Rd. – West of Elk Grove-Florin Rd.	4	27,500	C	4	28,200	C
Gerber Rd. – Elk Grove-Florin Rd. to Bradshaw Rd.	2	15,600	D	2	15,600	D
Gerber Rd. – Bradshaw Rd. to Vineyard Rd.	2	6,100	D	2	6,100	D
Gerber Rd. – Vineyard Rd. to Excelsior Rd.	2	3,900	C	2	3,900	C
Calvine Rd. – West of Elk Grove-Florin Rd.	4	29,800	D	4	30,600	D
Calvine Rd. – Elk Grove-Florin Rd. to Waterman Rd.	4	21,500	A	4	22,000	B
Calvine Rd. – Waterman Rd. to Bradshaw Rd.	4	13,100	A	4	13,300	A
Calvine Rd. – Bradshaw Rd. to Vineyard Rd.	4	9,300	A	4	9,400	A
Calvine Rd. – Vineyard Rd. to Excelsior Rd.	2	7,800	A	2	8,000	A
Calvine Rd. – Excelsior Rd. to Grant Line Rd.	2	4,400	A	2	4,600	A
S. Watt Avenue – North of SR 16	4	37,900	F	4	39,400	F
S. Watt Avenue – SR 16 to Elder Creek Rd.	4	26,900	C	4	28,300	C
S. Watt Avenue – Elder Creek Rd. to Florin Rd.	2	20,500	F	2	20,800	F
Elk Grove-Florin Rd. – Florin Rd. to Gerber Rd.	2	23,100	F	2	23,500	F
Elk Grove-Florin Rd. – Gerber Rd. to Calvine Rd.	4	31,900	D	4	33,600	E
Elk Grove-Florin Rd. – South of Calvine Rd.	4	15,800	A	4	16,400	A
Waterman Rd. – South of Calvine Rd.	2	6,400	A	2	6,400	A
Bradshaw Rd. – North of SR 16	4	23,200	B	4	24,700	B
Bradshaw Rd. – SR 16 to Elder Creek Rd.	4	21,400	B	4	24,400	C
Bradshaw Rd. – Elder Creek Rd. to Florin Rd.	4	18,600	A	4	23,400	B
Bradshaw Rd. – Florin Rd. to Gerber Rd.	4	16,300	A	4	16,300	A
Bradshaw Rd. – Gerber Rd. to Calvine Rd.	4	17,000	A	4	17,000	A
Bradshaw Rd. – South of Calvine Rd.	2	6,600	A	2	6,600	A
Vineyard Rd. – Gerber Rd. to Calvine Rd.	2	1,800	A	2	1,800	A
Excelsior Rd. – North of SR 16	2	900	A	2	900	A
Excelsior Rd. – Elder Creek Rd. to Florin Rd.	2	3,400	C	2	3,500	C
Excelsior Rd. – Florin Rd. to Gerber Rd.	2	7,800	E	2	7,800	E
Excelsior Rd. – Gerber Rd. to Calvine Rd.	2	4,600	D	2	4,800	D
Excelsior Rd. – South of Calvine Rd.	2	5,200	D	2	5,400	D

Notes: **Bold** – Unacceptable LOS according to County (LOS E) standards.
Source: Sacramento County Traffic Impact Guidelines (July 24, 1997) and Fehr & Peers Associates, 2002.

INTERSECTION ANALYSIS

The a.m. and p.m. peak hour intersection turning movements and lane configurations shown on Plate TC -14 were used to calculate the levels of service at each study intersection for Year 2005 conditions with Phase 1B. The level of service at each study intersection is presented in Table 7-12.

Table 7-12
Peak Hour Intersection Operations – Year 2005 with Phase 1B

Intersection	Control	Year 2005 Without Phase 1B				Year 2005 With Phase 1B			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Delay / V/C	LOS	Delay / V/C	LOS	Delay / V/C	LOS	Delay / V/C	LOS
1. SR 16/S. Watt Ave.	Signal[1]	1.00	E	0.98	E	**1.03**	F	**1.06**	F
2. SR 16/Bradshaw Rd.	Signal	**1.08**	F	0.95	E	**1.10**	F	0.98	E
3. SR 16/Excelsior Rd.	4-Way Stop[2]	28.2	D	15.9	C	29.1	D	19.2	C
4. Elder Creek Rd./S. Watt Ave.	Signal	0.77	C	0.79	C	0.89	D	0.85	D
5. Elder Creek Rd./Bradshaw Rd.	Signal	0.81	D	0.66	B	0.86	D	0.70	B
6. Elder Creek Rd./Excelsior Rd.	2-Way Stop[3]	1.7	A	2.1	A	1.7	A	2.0	A
7. Florin Rd./Elk Grove-Florin Rd.	Signal	0.49	A	0.62	B	0.56	A	0.70	B
8. Florin Rd./Bradshaw Rd.	Signal	0.72	C	0.73	C	0.89	D	0.88	D
9. Florin Rd./Excelsior Rd.	4-Way Stop	**> 45.0**	F	23.5	D	**> 45.0**	F	29.8	D
10. Gerber Rd./Elk Grove-Florin Rd.	Signal	0.62	B	0.75	C	0.70	B	0.80	C
11. Gerber Rd./Bradshaw Rd.	Signal	0.71	C	0.68	B	0.67	B	0.60	B
12. Gerber Rd./Vineyard Rd.	2-Way Stop	1.8	A	0.7	A	1.7	A	0.8	A
13. Gerber Rd./Excelsior Rd.	2-Way Stop	**> 45.0**	F	9.9	B	**> 45.0**	F	8.8	B
14. Calvine Rd./Elk Grove-Florin Rd.	Signal	0.57	A	0.72	C	0.64	B	0.78	C
15. Calvine Rd./Waterman Rd.	Signal	0.60	A	0.60	A	0.63	B	0.59	A
16. Calvine Rd./Bradshaw Rd.[4]	Signal	0.52	A	0.41	A	0.55	A	0.40	A
17. Calvine Rd./Vineyard Rd.	2-Way Stop	0.7	A	0.9	A	0.7	A	0.9	A
18. Calvine Rd./Excelsior Rd.	4-Way Stop	31.8	E	24.8	D	41.9	E	33.9	E

Notes: **Bold** – Unacceptable LOS according to County (LOS E) standards.
[1] Signal Control- Circular 212 Planning Methodology- Results present volume/capacity ratio and LOS.
[2] 4-Way Stop Control- 1994 HCM Unsignalized Methodology- Results present delay (seconds/vehicle) and LOS.

[3] 2-Way Stop Control- 1994 HCM Unsignalized Methodology- Results present delay (seconds/vehicle) and LOS.

[4] Assumed signal control, consistent with widening of Bradshaw Road (two to four lanes - Calvine Road to SR 16).

Source: Fehr & Peers Associates, 2002.

The addition of Phase 1B trips will cause deficiencies at the following intersections:

- SR 16/S. Watt Avenue – The addition of project trips will degrade intersection operations from LOS E to LOS F during the p.m. peak hour;
- Florin Road/Excelsior Road – The addition of project trips will increase the delay by five seconds during the a.m. peak hour; and

- Gerber Road/Excelsior Road – The addition of project trips will increase the delay by more than five seconds during the a.m. peak hour.

PROJECT IMPACTS

Based on the roadway and intersection analysis, the addition of Phase 1B trips will cause or contribute to deficiencies at the following study locations under Year 2005 conditions. These impacts are considered significant.

STUDY ROADWAYS

- None.

STUDY INTERSECTIONS

- SR 16/S. Watt Avenue;
- Florin Road/Excelsior Road; and
- Gerber Road/Excelsior Road.

MITIGATION MEASURES FOR PHASE 1B IN 2005

The following improvements will eliminate deficiencies caused by Phase 1B in Year 2005, and reduce impacts to less-than-significant.

STUDY INTERSECTIONS MITIGATION MEASURES

TC-8. SR 16/S. Watt Avenue – Widening the eastbound and westbound approaches to include an exclusive left-turn lane, a through lane, and a shared through/right-turn lane will improve operations to LOS E and D during the a.m. and p.m. peak hours, respectively.

Subsequent to the publishing of the traffic analysis, the County of Sacramento moved forward a project to widen South Watt Avenue from State Route 16 to Kiefer Boulevard to five lanes. The project includes the State Route 16 and South Watt Avenue intersection. The intersection improvement includes an additional left turn lane and through lane on the southbound approach and one new left turn lane and two new through lanes on the northbound approach. The improvement is planned to be completed by 2006. With those improvements and Mitigation Measure TC-8, an additional through lane on the eastbound and westbound approaches, the intersection level of service3 would improve to LOS C in both the a.m. and p.m. peak hours, with build out of Phase 1A and 1B of the North Vineyard Station Specific Plan.

TC-9. Florin Road/Excelsior Road – Installing a traffic signal and widening each approach to include an exclusive left-turn lane and a shared through/right-

turn lane will improve operations to LOS C and B during the a.m. and p.m. peak hours, respectively.

TC-10. Gerber Road/Excelsior Road – Installing a traffic signal and widening each approach to include an exclusive left-turn lane and a shared through/right-turn lane will improve operations to LOS B and A during the a.m. and p.m. peak hours, respectively.

YEAR 2010 CONDITIONS

Year 2010 levels of development within the NVVSP were analyzed under Year 2010 conditions to determine if development of the project, in addition to background growth, will adversely affect the planned roadway system in the Year 2010.

YEAR 2010 WITHOUT PROJECT CONDITIONS

The following discusses the roadway network and traffic operations under Year 2010 conditions without the implementation of the proposed project.

ROADWAY NETWORK

The following roadway improvements are planned to occur by the Year 2010:

- S. Watt Avenue/Elk Grove-Florin Road will be widened to four lanes from Gerber Road to Elder Creek Road;
- SR 16 will be widened to four lanes from S. Watt Avenue to Excelsior Road; and
- Excelsior Road will be extended through the Independence at Mather development to Douglas Road.

In addition, the roadway improvements recommended under Year 2002 with Phase 1A and Year 2005 with Phase 1B conditions were assumed in place in Year 2010. Plate TC -15 displays the planned number of lanes on each roadway segment in Year 2010.

TRAFFIC VOLUMES

The 1999 version of the SACMET Regional TDF model was used to develop Year 2010 daily traffic volumes. Since the SACMET model does not have a Year 2010 scenario, the Year 2005 and 2015 traffic models were used to develop Year 2010 traffic forecasts. The Year 2005 and 2015 TDF models were updated to include the planned roadway improvements and land uses within the project site remained at Year 2002 levels of development. Plate TC -16 displays the Year 2010 average daily traffic volumes within the study area.

Plate TC -15
Year 2010 Roadway System

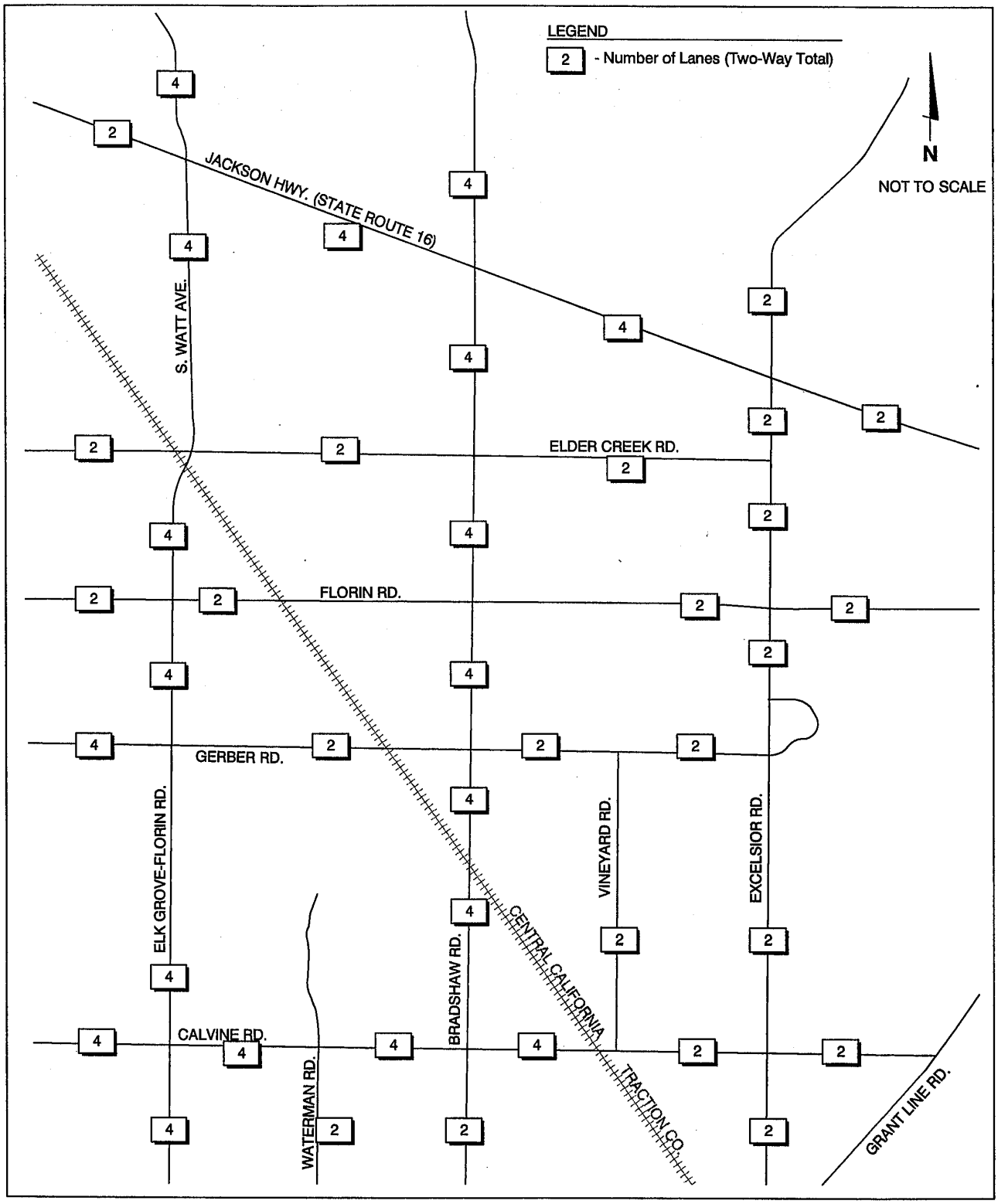
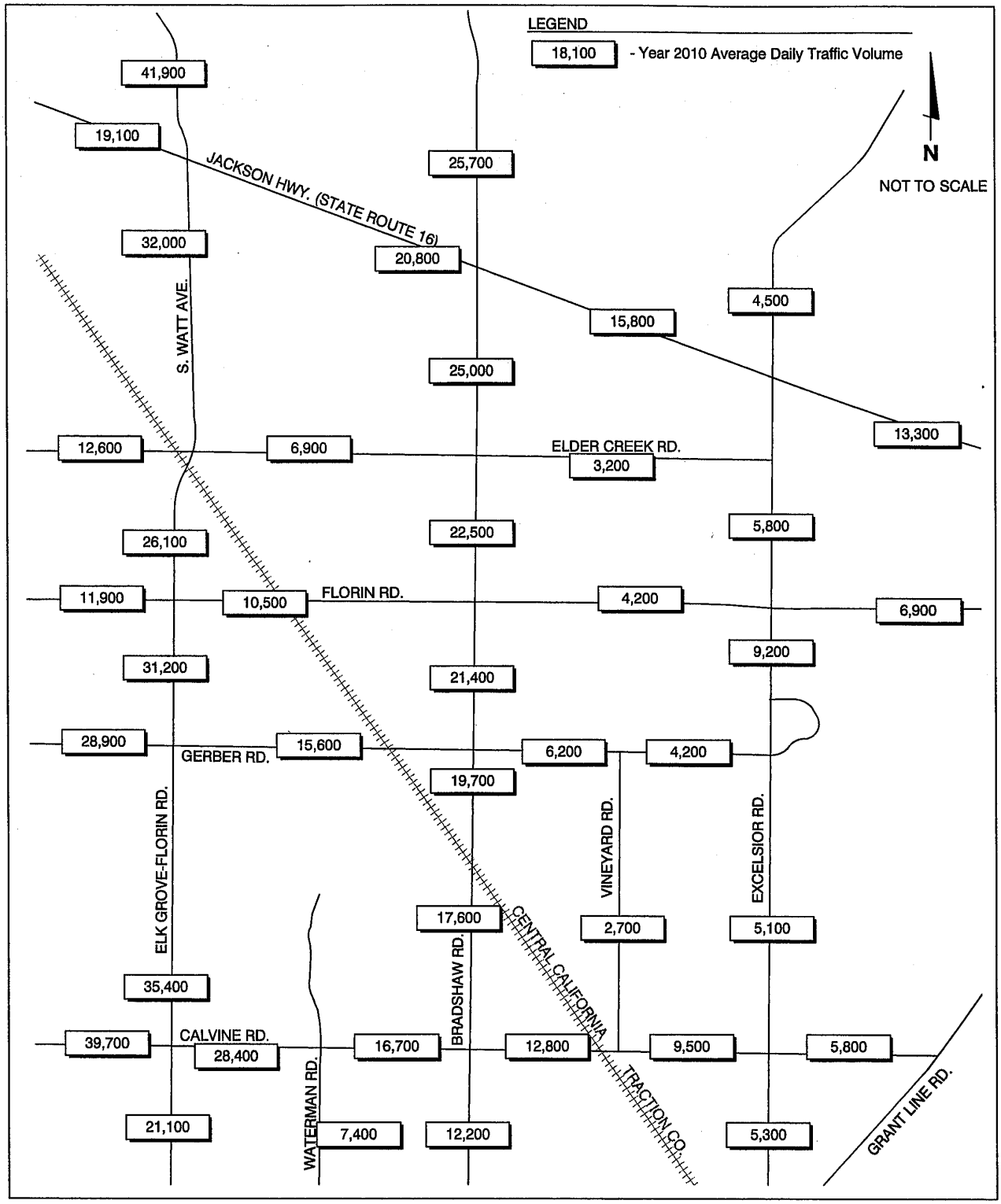


Plate TC -16
Average Daily Traffic Volumes
Year 2010 Without NVSSP Development



ROADWAY ANALYSIS

The daily volumes shown on Plate TC -16 were compared to the roadway capacity thresholds presented in Table 7-1. Table 7-13 summarizes the results of the arterial roadway analysis. The study roadways will operate acceptably in Year 2010 (without NVSSP development) except for the following:

- Calvine Road (West of Elk Grove-Florin Road); and
- S. Watt Avenue (North of SR 16).

Year 2010 With NVSSP Development Conditions

Traffic operations of the study roadways were analyzed under Year 2010 conditions with the addition of trips generated by Year 2010 levels of development within the NVSSP.

LAND USE

Year 2010 levels of development within the NVSSP assume 50 percent development between Phase 1B (Year 2005) and buildout of the NVSSP (Year 2015) conditions. Consequently, Year 2010 levels of development within the NVSSP consists of the following land uses:

- 4,116 residential dwelling units;
- 26.6 acres of commercial;
- 7.1 acres of business/professional;
- 9.9 acre golf course;
- 15 acres of schools; and
- 50.9 acres of parks.

The above land uses were added to the 2005 and 2015 SACMET Regional TDF models based on the number of households and total retail and non-retail employment. The SACOG employment yield matrix was used to estimate the employment projections for Year 2010 levels of development within the NVSSP.

Table 7-13
Roadway Analysis – Year 2010 Conditions Without NVSSP Development

Roadway Segment	Year 2010 Conditions		
	Lanes	Volume	LOS
SR 16 – West of S. Watt Ave.	2	19,100	E
SR 16 – S. Watt Ave. to Bradshaw Rd.	4	20,800	A
SR 16 – Bradshaw Rd. to Excelsior Rd.	4	15,800	A
SR 16 – East of Excelsior Rd.	2	13,300	D
Elder Creek Rd. – West of S. Watt Ave.	2	12,600	B
Elder Creek Rd. – S. Watt Ave. to Bradshaw Rd.	2	6,900	A
Elder Creek Rd. – Bradshaw Rd. to Excelsior Rd.	2	3,200	A
Florin Rd. – West of S. Watt Ave.	2	11,900	B
Florin Rd. – S. Watt Ave. to Bradshaw Rd.	2	10,500	A
Florin Rd. – Bradshaw Rd. to Excelsior Rd.	2	4,200	A
Florin Rd. – East of Excelsior Rd.	2	6,900	A
Gerber Rd. – West of Elk Grove-Florin Rd.	4	28,900	D
Gerber Rd. – Elk Grove-Florin Rd. to Bradshaw Rd.	2	15,600	D
Gerber Rd. – Bradshaw Rd. to Vineyard Road	2	6,200	D
Gerber Rd. – Vineyard Rd. to Excelsior Rd.	2	4,200	C
Calvine Rd. – West of Elk Grove-Florin Rd.	4	39,700	F
Calvine Rd. – Elk Grove-Florin Rd. to Waterman Rd.	4	28,400	C
Calvine Rd. – Waterman Rd. to Bradshaw Rd.	4	16,700	A
Calvine Rd. – Bradshaw Rd. to Vineyard Rd.	4	12,800	A
Calvine Rd. – Vineyard Rd. to Excelsior Rd.	2	9,500	A
Calvine Rd. – Excelsior Rd. to Grant Line Rd.	2	5,800	A
S. Watt Avenue – North of SR 16	4	41,900	F
S. Watt Avenue – SR 16 to Elder Creek Rd.	4	32,000	D
S. Watt Avenue – Elder Creek Rd. to Florin Rd.	4	26,100	C
Elk Grove-Florin Rd. – Florin Rd. to Gerber Rd.	4	31,200	D
Elk Grove-Florin Rd. – Gerber Rd. to Calvine Rd.	4	35,400	E
Elk Grove-Florin Rd. – South of Calvine Rd.	4	21,100	A
Waterman Rd. – South of Calvine Rd.	2	7,400	A
Bradshaw Rd. – North of SR 16	4	25,700	C
Bradshaw Rd. – SR 16 to Elder Creek Rd.	4	25,000	B
Bradshaw Rd. – Elder Creek Rd. to Florin Rd.	4	22,500	B
Bradshaw Rd. – Florin Rd. to Gerber Rd.	4	21,400	A
Bradshaw Rd. – Gerber Rd. to Calvine Rd.	4	19,700	A
Bradshaw Rd. – South of Calvine Rd.	2	12,200	B
Vineyard Rd. – Gerber Rd. to Calvine Rd.	2	2,700	C
Excelsior Rd. – North of SR 16	2	4,500	D
Excelsior Rd. – Elder Creek Rd. to Florin Rd.	2	5,800	D
Excelsior Rd. – Florin Rd. to Gerber Rd.	2	9,200	E
Excelsior Rd. – Gerber Rd. to Calvine Rd.	2	5,100	D
Excelsior Rd. – South of Calvine Rd.	2	5,300	D

Notes: **Bold** – Unacceptable LOS according to County (LOS E) standards.
Source: Sacramento County Traffic Impact Guidelines (July 24, 1997) and Fehr & Peers Associates, 2002.

TRAFFIC VOLUMES

Year 2010 traffic forecasts with 2010 levels of development within the NVSSP were developed by adding the proposed project land uses and circulation system to the 2005 and 2015 SACMET Regional TDF models. The models were used to generate daily traffic volumes for Year 2005 and 2015 conditions with 2010 levels of development

within the NVSSP. Year 2010 traffic forecasts were derived from the incremental growth between Year 2005 and 2015. This methodology takes into account the buildout of local and regional land uses outside of the project site under Year 2010 conditions. In addition, this methodology accounts for changes in travel patterns with the planned 2005 and 2015 roadway systems and with the additional roadways included in the NVSSP. Plate TC -17 displays the daily traffic volumes for Year 2010 conditions with Year 2010 levels of development within the NVSSP.
~~Roadway Analysis~~

PROJECT IMPACTS

The daily volumes shown on Plate TC -17 were compared to the roadway capacity thresholds presented in Table 7-1. Table 7-14 summarizes the results of the arterial roadway analysis. The addition of project trips will result in a deficiency at the following study roadway segments. These impacts are considered significant.

- S. Watt Avenue (North of SR 16); and
- Elk Grove-Florin Road (Gerber Road to Calvine Road).

MITIGATION MEASURES FOR 2010 CONDITIONS (50% BUILDOUT)

The improvements discussed below will improve operations to an acceptable level in Year 2010~~"~~, and reduce impacts to less-than-significant.

TC-11. S. Watt Avenue (North of SR 16) – Widening this segment from four to six lanes will improve operations to LOS D.

This improvement is also recommended under Year 2015 conditions with buildout of the NVSSP.

TC-12. Elk Grove-Florin Road (Gerber Road to Calvine Road) – Widening this segment from four to six lanes will improve operations to LOS B.

Plate TC -17
Average Daily Traffic Volumes
Year 2010 With 2010 NVSSP Development

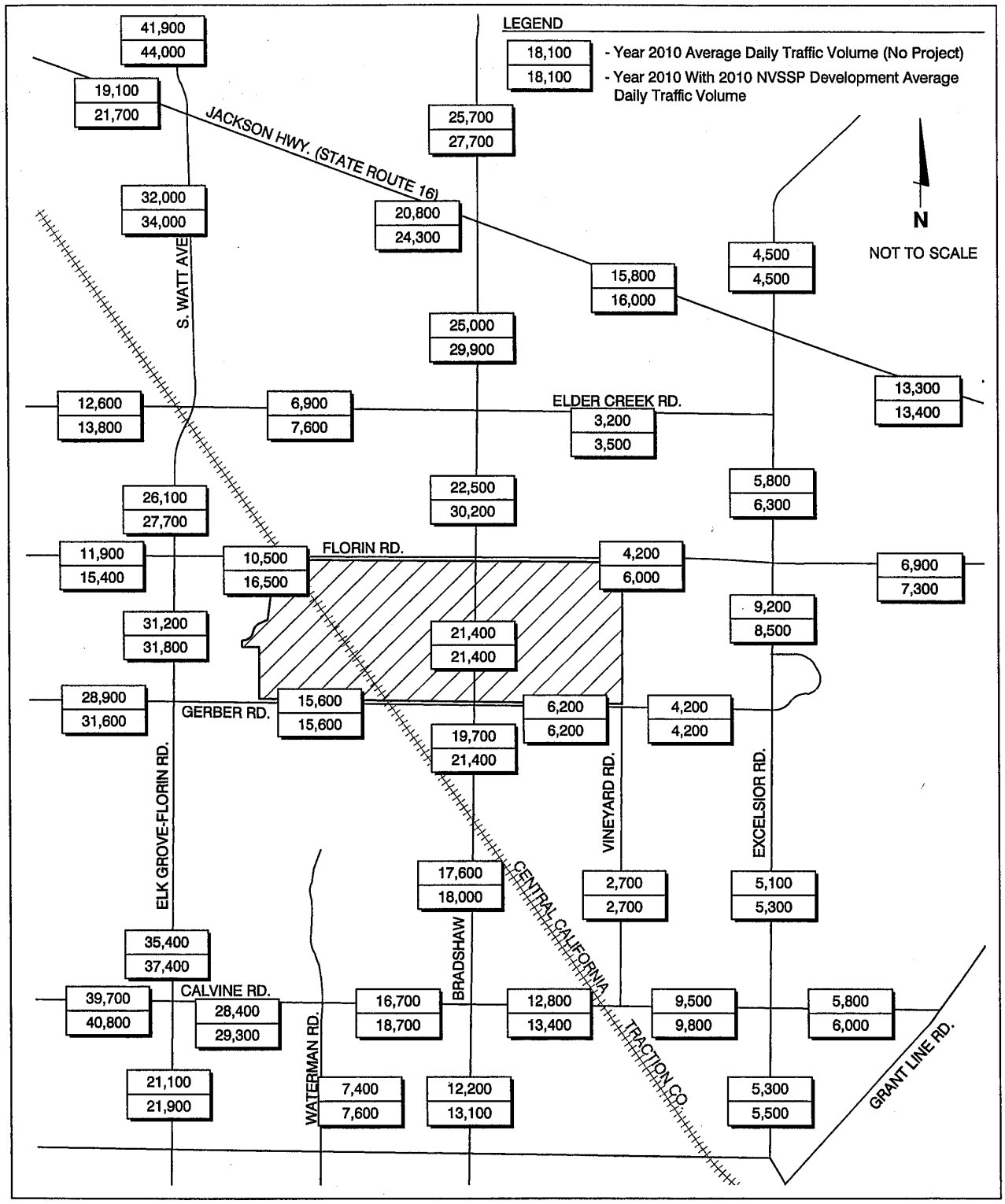


Table 7-14
Roadway Analysis – Year 2010 with 2010 Levels of NVSSP Development

Roadway Segment	Year 2010 Conditions Without Project			Year 2010 Conditions With Project		
	Lanes	Volume	LOS	Lanes	Volume	LOS
SR 16 – West of S. Watt Ave.	2	19,100	E	2	21,700	E
SR 16 – S. Watt Ave. to Bradshaw Rd.	4	20,800	A	4	24,300	B
SR 16 – Bradshaw Rd. to Excelsior Rd.	4	15,800	A	4	16,000	A
SR 16 – East of Excelsior Rd.	2	13,300	D	2	13,400	D
Elder Creek Rd. – West of S. Watt Ave.	2	12,600	B	2	13,800	C
Elder Creek Rd. – S. Watt Ave. to Bradshaw Rd.	2	6,900	A	2	7,600	A
Elder Creek Rd. – Bradshaw Rd. to Excelsior Rd.	2	3,200	A	2	3,500	A
Florin Rd. – West of S. Watt Ave.	2	11,900	B	2	15,400	D
Florin Rd. – S. Watt Ave. to Bradshaw Rd.	2	10,500	A	2	16,500	E
Florin Rd. – Bradshaw Rd. to Excelsior Rd.	2	4,200	A	2	6,000	A
Florin Rd. – East of Excelsior Rd.	2	6,900	A	2	7,300	A
Gerber Rd. – West of Elk Grove-Florin Rd.	4	28,900	D	4	31,600	D
Gerber Rd. – Elk Grove-Florin Rd. to Bradshaw Rd.	2	15,600	D	2	15,600	D
Gerber Rd. – Bradshaw Rd. to Vineyard Road	2	6,200	D	2	6,200	D
Gerber Rd. – Vineyard Rd. to Excelsior Rd.	2	4,200	C	2	4,200	C
Calvine Rd. – West of Elk Grove-Florin Rd.	4	39,700	F	4	40,800	F
Calvine Rd. – Elk Grove-Florin Rd. to Waterman Rd.	4	28,400	C	4	29,300	D
Calvine Rd. – Waterman Rd. to Bradshaw Rd.	4	16,700	A	4	18,700	A
Calvine Rd. – Bradshaw Rd. to Vineyard Rd.	4	12,800	A	4	13,400	A
Calvine Rd. – Vineyard Rd. to Excelsior Rd.	2	9,500	A	2	9,800	A
Calvine Rd. – Excelsior Rd. to Grant Line Rd.	2	5,800	A	2	6,000	A
S. Watt Avenue – North of SR 16	4	41,900	F	4	44,000	F
S. Watt Avenue – SR 16 to Elder Creek Rd.	4	32,000	D	4	34,000	E
S. Watt Avenue – Elder Creek Rd. to Florin Rd.	4	26,100	C	4	27,700	C
Elk Grove-Florin Rd. – Florin Rd. to Gerber Rd.	4	31,200	D	4	31,800	D
Elk Grove-Florin Rd. – Gerber Rd. to Calvine Rd.	4	35,400	E	4	37,400	F
Elk Grove-Florin Rd. – South of Calvine Rd.	4	21,100	A	4	21,900	B
Waterman Rd. – South of Calvine Rd.	2	7,400	A	2	7,600	A
Bradshaw Rd. – North of SR 16	4	25,700	C	4	27,700	C
Bradshaw Rd. – SR 16 to Elder Creek Rd.	4	25,000	B	4	29,900	D
Bradshaw Rd. – Elder Creek Rd. to Florin Rd.	4	22,500	B	4	30,200	D
Bradshaw Rd. – Florin Rd. to Gerber Rd.	4	21,400	A	4	21,400	A
Bradshaw Rd. – Gerber Rd. to Calvine Rd.	4	19,700	A	4	21,400	A
Bradshaw Rd. – South of Calvine Rd.	2	12,200	B	2	13,100	C
Vineyard Rd. – Gerber Rd. to Calvine Rd.	2	2,700	C	2	2,700	C
Excelsior Rd. – North of SR 16	2	4,500	D	2	4,500	D
Excelsior Rd. – Elder Creek Rd. to Florin Rd.	2	5,800	D	2	6,300	D
Excelsior Rd. – Florin Rd. to Gerber Rd.	2	9,200	E	2	8,500	E
Excelsior Rd. – Gerber Rd. to Calvine Rd.	2	5,100	D	2	5,300	D
Excelsior Rd. – South of Calvine Rd.	2	5,300	D	2	5,500	D

Notes: **Bold** – Unacceptable LOS according to County (LOS E) standards.
Source: Sacramento County Traffic Impact Guidelines (July 24, 1997) and Fehr & Peers Associates, 2002.

CUMULATIVE (YEAR 2015) CONDITIONS

Buildout of the NVSSP was analyzed under cumulative (Year 2015) conditions to determine if full implementation of the project, in addition to cumulative background growth, will adversely affect the planned roadway system in the Year 2015.

YEAR 2015 WITHOUT PROJECT CONDITIONS

The following discusses the roadway network and traffic operations under cumulative (Year 2015) conditions without the implementation of the proposed project.

ROADWAY NETWORK

The following roadway improvements are planned to occur by the Year 2015:

- SR 16 will be widened to four lanes west of S. Watt Avenue; and
- Calvine Road will be widened to six lanes from SR 99 to Bradshaw Road and to four lanes from Bradshaw Road to Vineyard Road.

In addition, the roadway improvements recommended under Year 2002 with Phase 1A and Year 2005 with Phase 1B conditions were assumed in place in Year 2015 (note that improvements recommended in Year 2010 were not assumed in place by 2015). Plate TC -18 displays the planned number of lanes on each roadway segment under cumulative conditions. In addition, the intersections at SR 16/Excelsior Road, Elder Creek Road/S. Watt Avenue, and Calvine Road/Vineyard Road are assumed to be signalized under cumulative conditions.

TRAFFIC VOLUMES

The 1999 version of the SACMET Regional Travel Demand Forecasting (TDF) model was used to develop cumulative daily and peak hour traffic volumes. The Year 2015 model was updated to include the planned roadway improvements listed above. Land uses within the project site remained at Year 2001 levels of development. Plate TC -19 and Plate TC -20 display the cumulative daily and a.m. and p.m. peak hour traffic volumes, respectively. Sacramento County Transportation Division staff approved the roadway network and land use assumptions prior to the development of Year 2015 “No Project” forecasts.

Plate TC -18
Year 2015 Roadway System

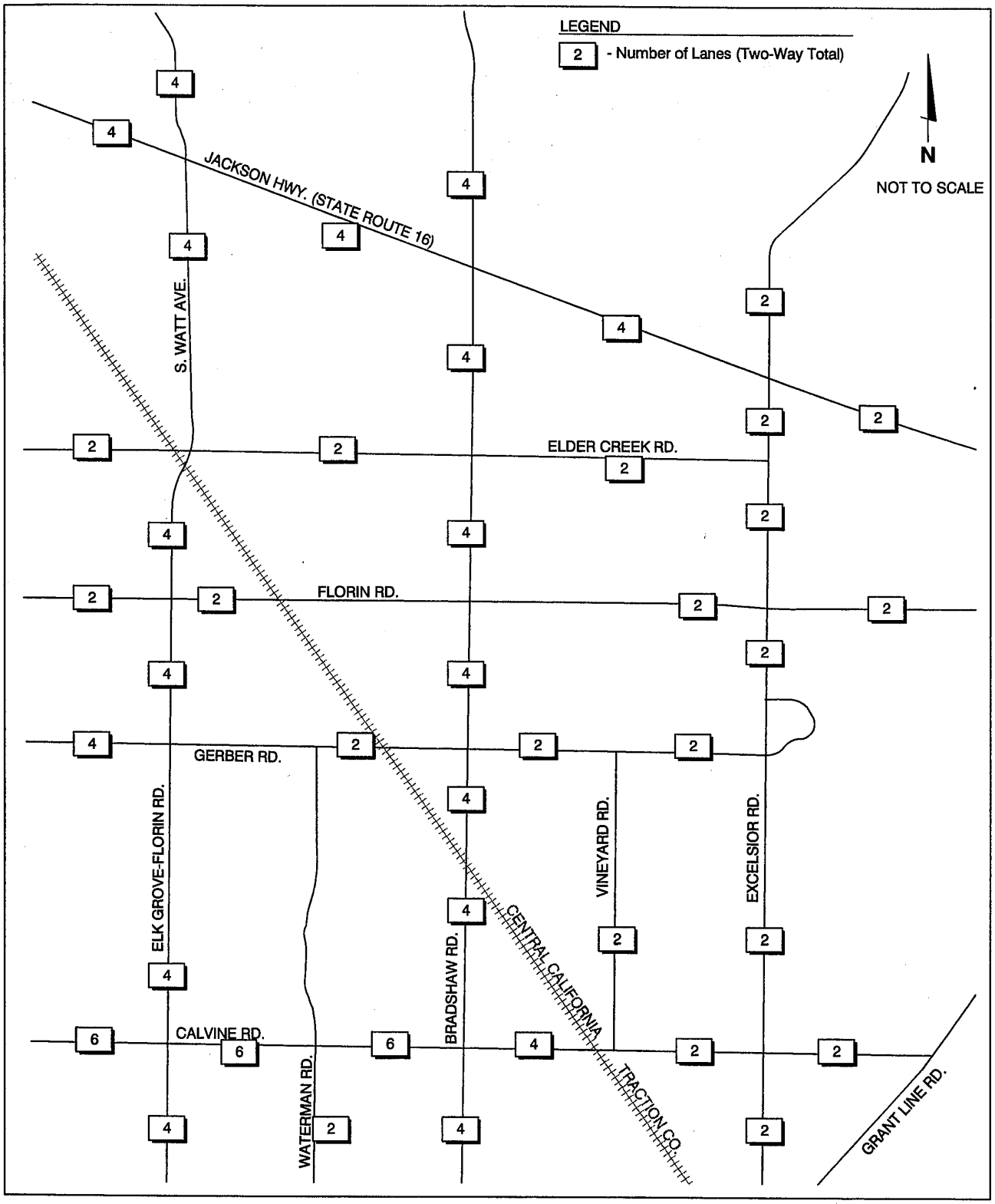


Plate TC -19
Average Daily Traffic Volumes
Year 2015 Without NVSSP

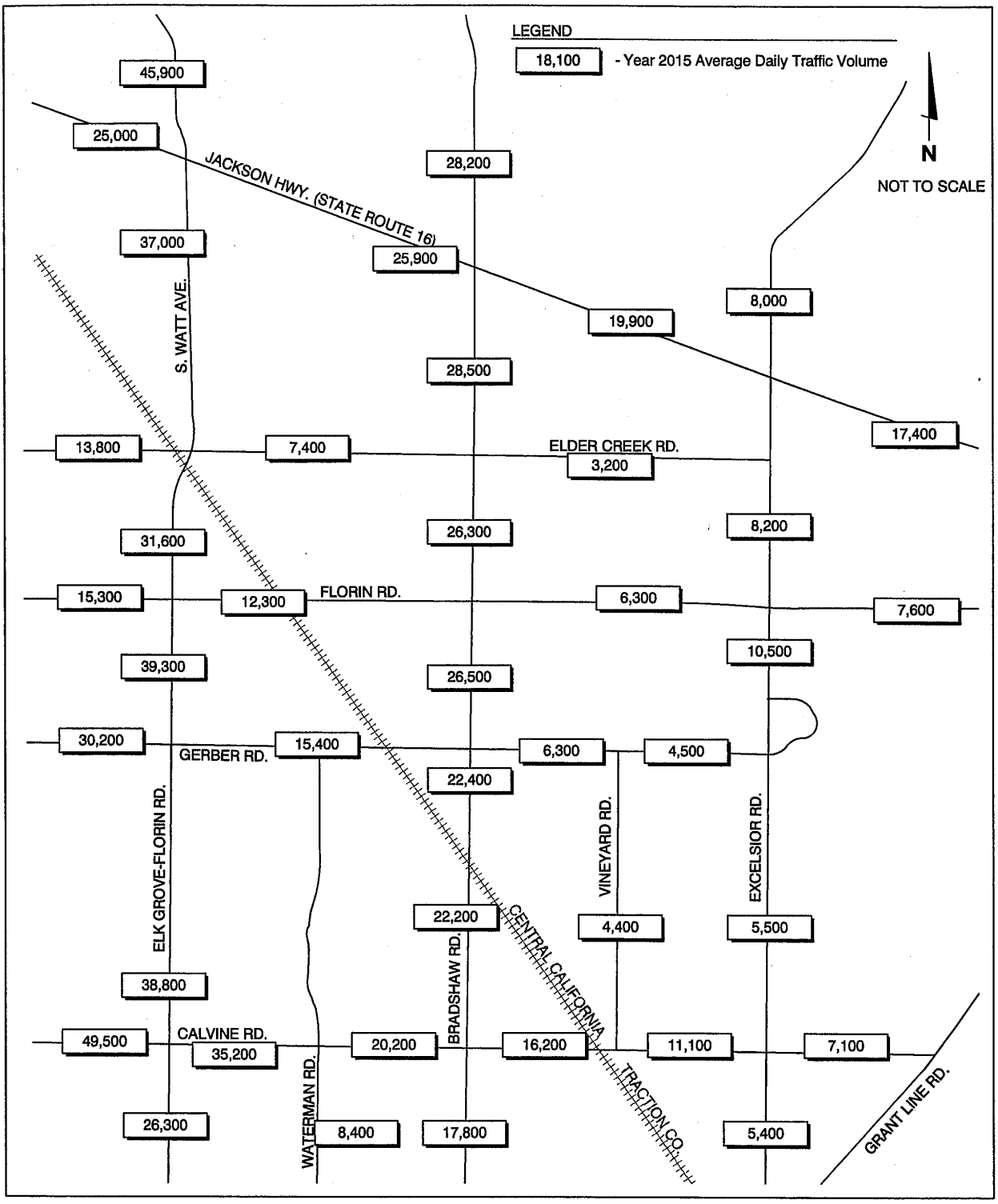
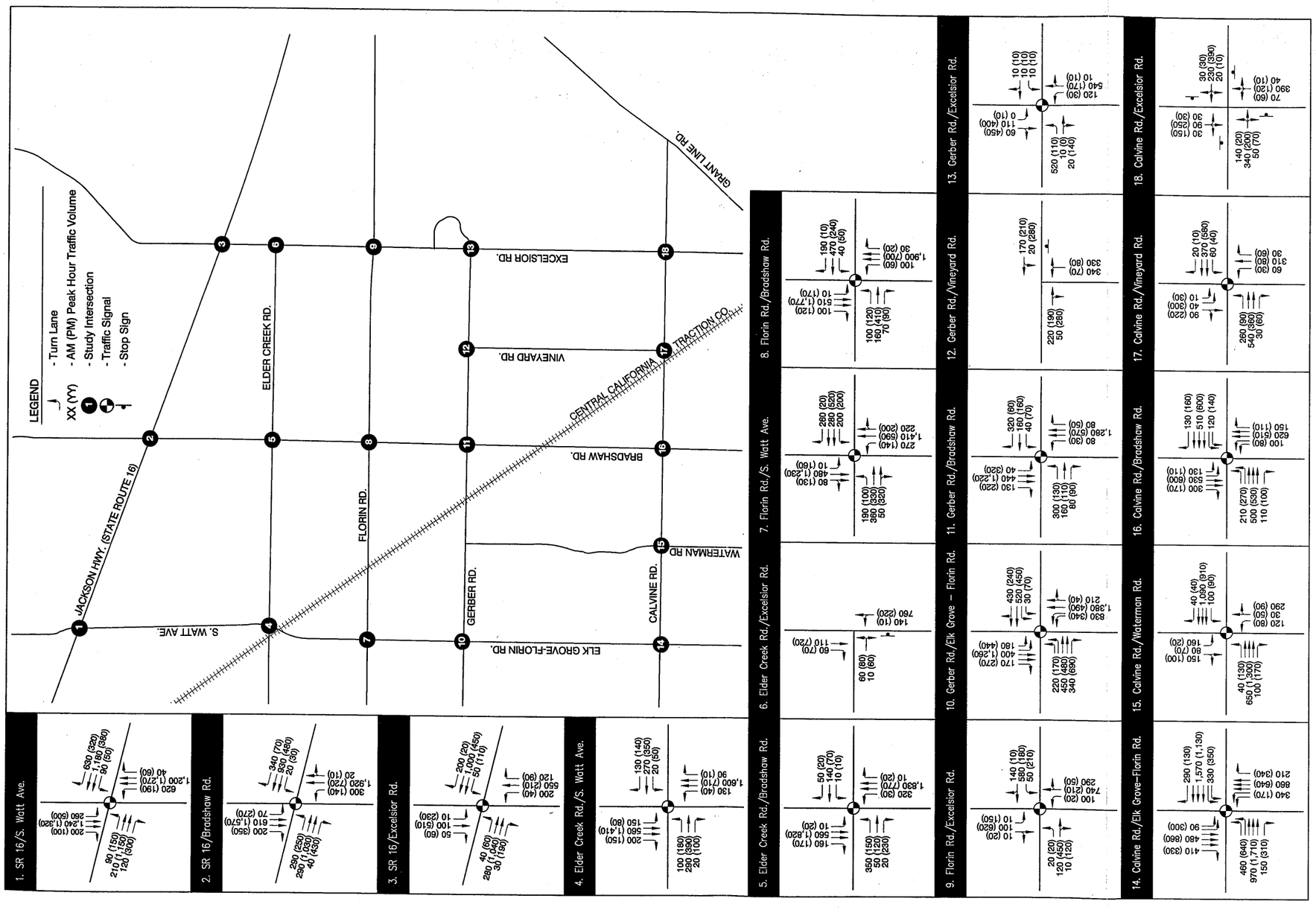


Plate TC -20
Peak Hour Traffic Volumes and Lane Configurations
Year 2015 Without NVSSP



Roadway Analysis

The daily volumes shown on Plate TC -19 were compared to the roadway capacity thresholds presented in Table 7-1. Table 7-15 summarizes the results of the arterial roadway analysis. The study roadways will operate acceptably in Year 2015 (without NVSSP) except for the following:

- S. Watt Avenue (North of SR 16);
- S. Watt Avenue (SR 16 to Elder Creek Road);
- Elk Grove-Florin Road (Florin Road to Gerber Road); and
- Elk Grove-Florin Road (Gerber Road to Calvine Road).

Intersection Analysis

The Year 2015 a.m. and p.m. peak hour intersection turning movements and lane configurations displayed in Plate TC -20 were used to calculate the levels of service at each study intersection. Table 7-16 summarizes the results of this analysis. The study intersections will operate acceptably in 2015 (without NVSSP) except for the following:

- SR 16/S. Watt Avenue operates at LOS F during the a.m. and p.m. peak hours;
- SR 16/Bradshaw Road operates at LOS F during the a.m. peak hour;
- Florin Road/Bradshaw Road operates at LOS F during the a.m. peak hour; and
- Florin Road/Excelsior Road operates at LOS F during the a.m. peak hour.

Year 2015 With NVSSP Conditions

Traffic operations of the study roadways and intersections were analyzed under cumulative conditions with the addition of trips generated by buildout of the NVSSP.

Roadway Network

The Year 2015 roadway network with buildout of the NVSSP includes the extension of Waterman Road and Vineyard Road from Gerber Road to Florin Road and additional north-south roadways that provide alternative routes within the project vicinity. Plate TC -21 displays buildout of the NVSSP and shows the location of the proposed roadways serving the project site.

Table 7-15
Roadway Analysis – Year 2015 Conditions Without Project

Roadway Segment	Year 2015 Conditions		
	Lanes	Volume	LOS
SR 16 – West of S. Watt Ave.	4	25,000	B
SR 16 – S. Watt Ave. to Bradshaw Rd.	4	25,900	C
SR 16 – Bradshaw Rd. to Excelsior Rd.	4	19,900	A
SR 16 – East of Excelsior Rd.	2	17,400	E
Elder Creek Rd. – West of S. Watt Ave.	2	13,800	C
Elder Creek Rd. – S. Watt Ave. to Bradshaw Rd.	2	7,400	A
Elder Creek Rd. – Bradshaw Rd. to Excelsior Rd.	2	3,200	A
Florin Rd. – West of S. Watt Ave.	2	15,300	D
Florin Rd. – S. Watt Ave. to Bradshaw Rd.	2	12,300	B
Florin Rd. – Bradshaw Rd. to Excelsior Rd.	2	6,300	A
Florin Rd. – East of Excelsior Rd.	2	7,600	A
Gerber Rd. – West of Elk Grove-Florin Rd.	4	30,200	D
Gerber Rd. – Elk Grove-Florin Rd. to Bradshaw Rd.	2	15,400	D
Gerber Rd. – Bradshaw Rd. to Vineyard Rd.	2	6,300	D
Gerber Rd. – Vineyard Rd. to Excelsior Rd.	2	4,500	D
Calvine Rd. – West of Elk Grove-Florin Rd.	6	49,500	E
Calvine Rd. – Elk Grove-Florin Rd. to Waterman Rd.	6	35,200	B
Calvine Rd. – Waterman Rd. to Bradshaw Rd.	6	20,200	A
Calvine Rd. – Bradshaw Rd. to Vineyard Rd.	4	16,200	A
Calvine Rd. – Vineyard Rd. to Excelsior Rd.	2	11,100	B
Calvine Rd. – Excelsior Rd. to Grant Line Rd.	2	7,100	A
S. Watt Avenue – North of SR 16	4	45,900	F
S. Watt Avenue – SR 16 to Elder Creek Rd.	4	37,000	F
S. Watt Avenue – Elder Creek Rd. to Florin Rd.	4	31,600	D
Elk Grove-Florin Rd. – Florin Rd. to Gerber Rd.	4	39,300	F
Elk Grove-Florin Rd. – Gerber Rd. to Calvine Rd.	4	38,800	F
Elk Grove-Florin Rd. – South of Calvine Rd.	4	26,300	C
Waterman Rd. – South of Calvine Rd.	2	8,400	A
Bradshaw Rd. – North of SR 16	4	28,200	C
Bradshaw Rd. – SR 16 to Elder Creek Rd.	4	28,500	C
Bradshaw Rd. – Elder Creek Rd. to Florin Rd.	4	26,300	C
Bradshaw Rd. – Florin Rd. to Gerber Rd.	4	26,500	C
Bradshaw Rd. – Gerber Rd. to Calvine Rd.	4	22,400	B
Bradshaw Rd. – South of Calvine Rd.	4	17,800	A
Vineyard Rd. – Gerber Rd. to Calvine Rd.	2	4,400	D
Excelsior Rd. – North of SR 16	2	8,000	E
Excelsior Rd. – Elder Creek Rd. to Florin Rd.	2	8,200	E
Excelsior Rd. – Florin Rd. to Gerber Rd.	2	10,500	E
Excelsior Rd. – Gerber Rd. to Calvine Rd.	2	5,500	D
Excelsior Rd. – South of Calvine Rd.	2	5,400	D

Notes: **Bold** – Unacceptable LOS according to County (LOS E) standards.
Source: Sacramento County Traffic Impact Guidelines (July 24, 1997) and Fehr & Peers Associates, 2002.

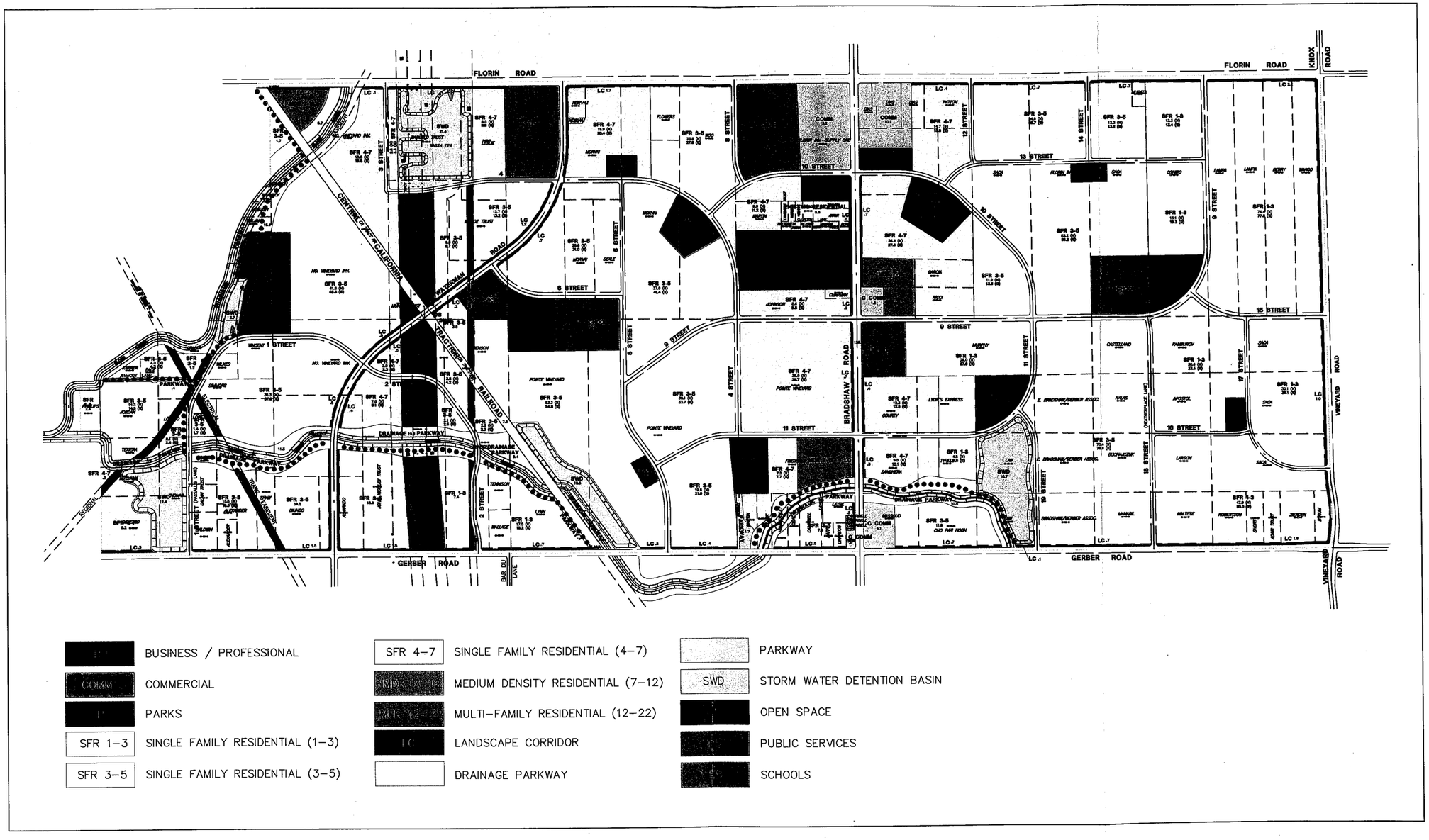
Table 7-16
Peak Hour Intersection Operations – Year 2015 Conditions Without Project

Intersection	Control	AM Peak Hour		PM Peak Hour	
		Delay / V/C	LOS	Delay / V/C	LOS
1. SR 16/S. Watt Ave.	Signal[1]	**1.28**	F	**1.17**	F
2. SR 16/Bradshaw Rd.	Signal	**1.20**	F	0.98	E
3. SR 16/Excelsior Rd.	Signal	0.73	C	0.79	C
4. Elder Creek Rd./S. Watt Ave.	Signal	0.88	D	0.85	D
5. Elder Creek Rd./Bradshaw Rd.	Signal	0.94	E	0.77	C
6. Elder Creek Rd./Excelsior Rd.	2-Way Stop[2]	1.7	A	1.7	A
7. Florin Rd./Elk Grove-Florin Rd.	Signal	0.84	D	0.90	D
8. Florin Rd./Bradshaw Rd.	Signal	**1.02**	F	0.94	E
9. Florin Rd./Excelsior Rd.	Signal	**1.19**	F	0.96	E
10. Gerber Rd./Elk Grove-Florin Rd.	Signal	0.99	E	0.91	E
11. Gerber Rd./Bradshaw Rd.	Signal	0.84	D	0.62	B
12. Gerber Rd./Vineyard Rd.	2-Way Stop	6.2	B	3.1	A
13. Gerber Rd./Excelsior Rd.	Signal	0.73	C	0.69	B
14. Calvine Rd./Elk Grove-Florin Rd.	Signal	0.75	C	0.76	C
15. Calvine Rd./Waterman Rd.	Signal	0.59	A	0.52	A
16. Calvine Rd./Bradshaw Rd.	Signal	0.45	A	0.46	A
17. Calvine Rd./Vineyard Rd.	Signal	0.51	A	0.62	B
18. Calvine Rd./Excelsior Rd.	4-Way Stop[3]	34.1	E	17.0	C

Notes: **Bold** – Unacceptable LOS according to County (LOS E) standards.
[1] Signal Control- Circular 212 Planning Methodology- Results present volume/capacity ratio and LOS
[2] 2-Way Stop Control- 1994 HCM Unsignalized Methodology- Results present delay (seconds/vehicle) and LOS
[3] 4-Way Stop Control- 1994 HCM Unsignalized Methodology- Results present delay (seconds/vehicle) and LOS

Source: Fehr & Peers Associates, 2002.

Plate TC -21
North Vineyard Station Land Use Diagram
Buildout Conditions



LAND USE

As shown in Plate TC -21, buildout of the NVSSP consists of the following land uses:

- 5,732 residential dwelling units;
- 29.9 acres of commercial;
- 7.1 acres of business/professional;
- 19.8 acre golf course;
- 20 acres of schools; and
- 63.5 acres of parks.

The above land uses were added to the 2015 SACMET Regional TDF model based on the number of households and total retail and non-retail employment. The Sacramento Area Council of Governments' (SACOG) employment yield matrix was used to estimate the employment projections for buildout of the NVSSP. Appendix B includes the traffic analysis zones and land use assumptions included in the 2015 TDF model with buildout of the NVSSP.

TRAFFIC VOLUMES

Cumulative (Year 2015) traffic forecasts with buildout of the NVSSP were developed by adding the proposed project land uses and circulation system to the 2015 SACMET Regional TDF model. The TDF model was used to generate daily and peak hour traffic volumes for buildout of the NVSSP. This methodology is appropriate for a cumulative conditions analysis because the model takes into account the buildout of local and regional land uses outside of the project site. In addition, this methodology accounts for changes in travel patterns with the additional roadways included in the NVSSP. Plate TC -22 and Plate TC -23 display the daily and peak hour traffic volumes, respectively, for cumulative conditions with buildout of the NVSSP.

ROADWAY ANALYSIS

The daily traffic volumes displayed in Plate TC -22 were compared to the roadway capacity thresholds presented in Table 7-1 to determine if the addition of buildout trips will cause roadway deficiencies. Table 7-17 summarizes the results of the arterial roadway analysis.

The addition of project trips will cause the segments of Florin Road west of S. Watt Avenue and between S. Watt Avenue and Bradshaw Road to decline from LOS D to LOS F and from LOS B to LOS F, respectively. These additional trips will also cause the segment of Bradshaw Road between Elder Creek Road and Florin Road to decline from LOS C to LOS F.

Plate TC -22
Average Daily Traffic Volumes
Year 2015 With NVSSP

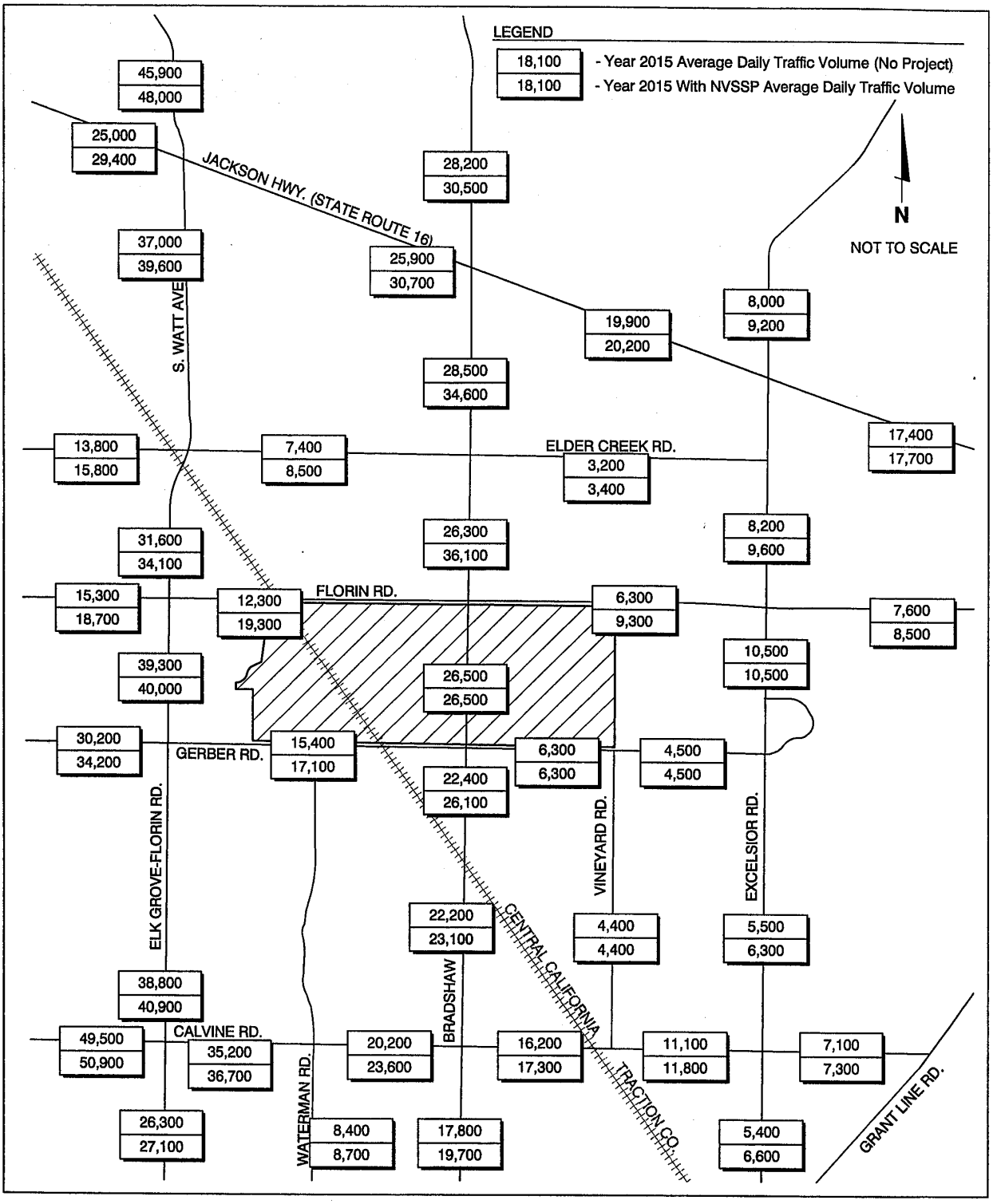


Plate TC -23
Peak Hour Traffic Volumes and Lane Configurations
Year 2015 With NVSSP

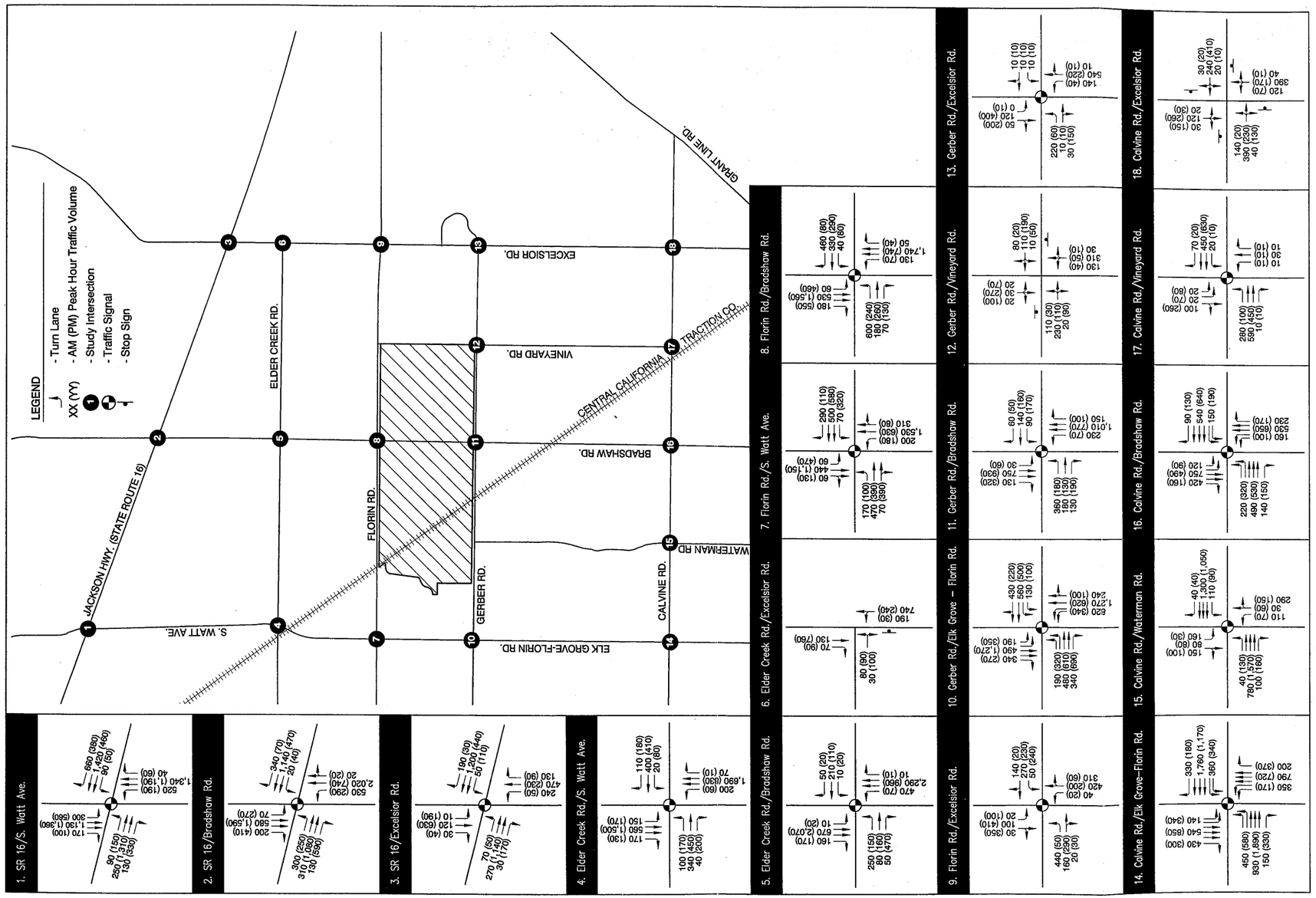


Table 7-17
Roadway Analysis – Year 2015 With Buildout of NVSSP

Roadway Segment	Year 2015 Conditions Without NVSSP			Year 2015 Conditions With NVSSP		
	Lanes	Volume	LOS	Lanes	Volume	LOS
SR 16 – West of S. Watt Ave.	4	25,000	B	4	29,400	D
SR 16 – S. Watt Ave. to Bradshaw Rd.	4	25,900	C	4	30,700	D
SR 16 – Bradshaw Rd. to Excelsior Rd.	4	19,900	A	4	20,200	A
SR 16 – East of Excelsior Rd.	2	17,400	E	2	17,700	E
Elder Creek Rd. – West of S. Watt Ave.	2	13,800	C	2	15,800	D
Elder Creek Rd. – S. Watt Ave. to Bradshaw Rd.	2	7,400	A	2	8,500	A
Elder Creek Rd. – Bradshaw Rd. to Excelsior Rd.	2	3,200	A	2	3,400	A
Florin Rd. – West of S. Watt Ave.	2	15,300	D	2	18,700	F
Florin Rd. – S. Watt Ave. to Bradshaw Rd.	2	12,300	B	2	19,300	F
Florin Rd. – Bradshaw Rd. to Excelsior Rd.	2	6,300	A	2	9,300	A
Florin Rd. – East of Excelsior Rd.	2	7,600	A	2	8,500	A
Gerber Rd. – West of Elk Grove-Florin Rd.	4	30,200	D	4	34,200	E
Gerber Rd. – Elk Grove-Florin Rd. to Bradshaw Rd.	2	15,400	D	2	17,100	E
Gerber Rd. – Bradshaw Rd. to Vineyard Road	2	6,300	D	2	6,300	D
Gerber Rd. – Vineyard Rd. to Excelsior Rd.	2	4,500	D	2	4,500	D
Calvine Rd. – West of Elk Grove-Florin Rd.	6	49,500	E	6	50,900	E
Calvine Rd. – Elk Grove-Florin Rd. to Waterman Rd.	6	35,200	B	6	36,700	B
Calvine Rd. – Waterman Rd. to Bradshaw Rd.	6	20,200	A	6	23,600	A
Calvine Rd. – Bradshaw Rd. to Vineyard Rd.	4	16,200	A	4	17,300	A
Calvine Rd. – Vineyard Rd. to Excelsior Rd.	2	11,100	B	2	11,800	B
Calvine Rd. – Excelsior Rd. to Grant Line Rd.	2	7,100	A	2	7,300	A
S. Watt Avenue – North of SR 16	4	45,900	F	4	48,000	F
S. Watt Avenue – SR 16 to Elder Creek Rd.	4	37,000	F	4	39,600	F
S. Watt Avenue – Elder Creek Rd. to Florin Rd.	4	31,600	D	4	34,100	E
Elk Grove-Florin Rd. – Florin Rd. to Gerber Rd.	4	39,300	F	4	40,000	F
Elk Grove-Florin Rd. – Gerber Rd. to Calvine Rd.	4	38,800	F	4	41,900	**F**
Elk Grove-Florin Rd. – South of Calvine Rd.	4	26,300	C	4	27,100	C
Waterman Rd. – South of Calvine Rd.	2	8,400	A	2	8,700	A
Bradshaw Rd. – North of SR 16	4	28,200	C	4	30,500	D
Bradshaw Rd. – SR 16 to Elder Creek Rd.	4	28,500	C	4	34,600	E
Bradshaw Rd. – Elder Creek Rd. to Florin Rd.	4	26,300	C	4	36,100	F
Bradshaw Rd. – Florin Rd. to Gerber Rd.	4	26,500	C	4	26,500	C
Bradshaw Rd. – Gerber Rd. to Calvine Rd.	4	22,400	B	4	26,100	C
Bradshaw Rd. – South of Calvine Rd.	4	17,800	A	4	19,700	A
Vineyard Rd. – Gerber Rd. to Calvine Rd.	2	4,400	D	2	4,400	D
Excelsior Rd. – North of SR 16	2	8,000	E	2	9,200	E
Excelsior Rd. – Elder Creek Rd. to Florin Rd.	2	8,200	E	2	9,600	E
Excelsior Rd. – Florin Rd. to Gerber Rd.	2	10,500	E	2	10,500	E
Excelsior Rd. – Gerber Rd. to Calvine Rd.	2	5,500	D	2	6,300	D
Excelsior Rd. – South of Calvine Rd.	2	5,400	D	2	6,600	D

Notes: **Bold** – Unacceptable LOS according to County (LOS E) standards.
Source: Sacramento County Traffic Impact Guidelines (July 24, 1997) and Fehr & Peers Associates, 2002.

In addition, trips generated by buildout of the NVSSP will increase the V/C ratio by 0.05 or more on the following facilities that operate at LOS F under 2015 conditions without the proposed project:

- S. Watt Avenue (North of SR 16);
- S. Watt Avenue (SR 16 to Elder Creek Road); and
- Elk Grove-Florin Road (Gerber Road to Calvine Road).

INTERSECTION ANALYSIS

The a.m. and p.m. peak hour intersection turning movements and lane configurations shown on Plate TC -23 were used to calculate the levels of service at each study intersection for cumulative conditions with buildout of the NVSSP. The level of service at each study intersection is presented in Table 7-18.

The addition of NVSSP trips will cause deficiencies at the following intersections:

- SR 16/S. Watt Avenue – The addition of project trips will increase the V/C ratio by more than 0.05 during the p.m. peak hour;

- SR 16/Bradshaw Road – The addition of project trips will increase the V/C ratio by more than 0.05 during the a.m. peak and p.m. peak hours;

- Elder Creek Road/Bradshaw Road – The addition of project trips will degrade operations from LOS E to LOS F during the a.m. peak hour and from LOS C to LOS F during the p.m. peak hour;

- Florin Road/Elk Grove-Florin Road – The addition of project trips will degrade operations from LOS D to LOS F during the p.m. peak hour; and

- Florin Road/Bradshaw Road – The addition of project trips will increase the V/C ratio by more than 0.05 during the a.m. peak hour.

As shown in Table 7-18, the intersection delay and volume-to-capacity ratios improve at four of the study intersections with buildout of the NVSSP. The Year 2015 roadway network with buildout of the NVSSP includes the extension of Waterman Road and Vineyard Road from Gerber Road to Florin Road and additional north-south roadways that provide alternative routes within the project vicinity. Consequently, travel patterns shift with buildout of the NVSSP. This decreases demand at certain study intersection (e.g., Gerber Road/Excelsior Road) because vehicles traveling north-south within the project vicinity can use the alternative routes provided with buildout of the NVSSP.

Table 7-18
Peak Hour Intersection Operations – Year 2015 With Buildout of NVSSP

Intersection	Control	Year 2015 Without NVSSP				Year 2015 With NVSSP			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Delay / V/C	LOS	Delay / V/C	LOS	Delay / V/C	LOS	Delay / V/C	LOS
1. SR 16/S. Watt Ave.	Signal[1]	**1.28**	**F**	**1.17**	**F**	**1.26**	**F**	**1.24**	**F**
2. SR 16/Bradshaw Rd.	Signal	**1.20**	**F**	0.98	E	**1.31**	**F**	**1.11**	**F**
3. SR 16/Excelsior Rd.	Signal	0.73	C	0.79	C	0.77	C	0.91	E
4. Elder Creek Rd./S. Watt Ave.	Signal	0.88	D	0.85	D	1.00	E	0.93	E
5. Elder Creek Rd./Bradshaw Rd.	Signal	0.94	E	0.77	C	**1.08**	**F**	**1.02**	**F**
6. Elder Creek Rd./Excelsior Rd.	2-Way Stop[2]	1.7	A	1.7	A	2.9	A	2.4	A
7. Florin Rd./Elk Grove-Florin Rd.	Signal	0.84	D	0.90	D	0.93	E	**1.02**	**F**
8. Florin Rd./Bradshaw Rd.	Signal	**1.02**	**F**	0.94	E	**1.29**	**F**	0.92	E
9. Florin Rd./Excelsior Rd.	Signal	**1.19**	**F**	0.96	E	**1.07**	**F**	0.89	D
10. Gerber Rd./Elk Grove-Florin Rd.	Signal	0.99	E	0.91	E	0.97	E	0.92	E
11. Gerber Rd./Bradshaw Rd.	Signal	0.84	D	0.62	B	0.74	C	0.58	A
12. Gerber Rd./Vineyard Rd.	2-Way Stop	6.2	B	3.1	A	8.0	B	5.6	B
13. Gerber Rd./Excelsior Rd.	Signal	0.73	C	0.69	B	0.53	A	0.54	A
14. Calvine Rd./Elk Grove-Florin Rd.	Signal	0.75	C	0.76	C	0.80	C	0.83	D
15. Calvine Rd./Waterman Rd.	Signal	0.59	A	0.52	A	0.64	B	0.58	A
16. Calvine Rd./Bradshaw Rd.[4]	Signal	0.45	A	0.46	A	0.51	A	0.51	A
17. Calvine Rd./Vineyard Rd.	Signal	0.51	A	0.62	B	0.42	A	0.50	A
18. Calvine Rd./Excelsior Rd.	4-Way Stop[3]	34.1	E	17.0	C	44.4	E	17.6	C

Notes: **Bold** – Unacceptable LOS according to County (LOS E) standards.
[1] Signal Control- Circular 212 Planning Methodology- Results present volume/capacity ratio and LOS.
[2] 2-Way Stop Control- 1994 HCM Unsignalized Methodology- Results present delay (seconds/vehicle) and LOS.
[3] 4-Way Stop Control- 1994 HCM Unsignalized Methodology- Results present delay (seconds/vehicle) and LOS.

[4] Assumed signal control, consistent with widening of Bradshaw Road (two to four lanes - Calvine Road to SR 16).

Source: Fehr & Peers Associates, 2002.

PROJECT IMPACTS

Based on the roadway and intersection analysis, buildout of the NVSSP will cause or contribute to deficiencies at the following study locations under Year 2015 conditions. These impacts are considered significant:

STUDY ROADWAYS

- Florin Road (West of S. Watt Avenue);
- Florin Road (S. Watt Avenue to Bradshaw Road);
- S. Watt Avenue (North of SR 16);
- S. Watt Avenue (SR 16 to Elder Creek Road) ;
- Elk Grove-Florin Road (Gerber Road to Calvine Road); and

- Bradshaw Road (Elder Creek Road to Florin Road).

Study Intersections

- SR 16/S. Watt Avenue;
- SR 16/Bradshaw Road;
- Elder Creek Road/Bradshaw Road;
- Florin Road/Elk Grove-Florin Road; and
- Florin Road/Bradshaw Road.

Mitigation Measures for 2015 Buildout Conditions

The following improvements will eliminate deficiencies caused by buildout of the NVSSP in Year 2015, and reduce impacts to less-than-significant. The study roadway and intersection improvements recommended in the NVSSP DEIR (July 1997) for cumulative plus project conditions are also summarized. Mitigation measures discussed below may vary from those included in the DEIR due to changes in the planned roadway network within the project area.

Study Roadways Mitigation Measures

TC-13. Florin Road (West of S. Watt Avenue) – Widening this segment from two to four lanes will improve operations to LOS A.

This study roadway segment was not impacted under cumulative plus project conditions in the NVSSP DEIR.

TC-14. Florin Road (S. Watt Avenue to Bradshaw) – Widening this segment from two to four lanes will improve operations to LOS A.

This study roadway segment was not impacted under cumulative plus project conditions in the NVSSP DEIR.

TC-15. S. Watt Avenue (North of SR 16) – Widening this segment from four to six lanes will improve operations to LOS D.

This study roadway segment was not impacted under cumulative plus project conditions in the NVSSP DEIR.

TC-16. S. Watt Avenue (SR 16 to Elder Creek Road) – Widening this segment from four to six lanes will improve operations to LOS C.

This study roadway segment was not impacted under cumulative plus project conditions in the NVSSP DEIR.

TC-17. Elk Grove-Florin Road (Gerber Road to Calvine Road) – Widening this segment from four to six lanes will improve operations to LOS C.

This study roadway segment was not impacted under cumulative plus project conditions in the NVSSP DEIR.

TC-18. Bradshaw Road (Elder Creek Road to Florin Road) – Widening this segment from four to six lanes will improve operations to LOS B.

The NVSSP DEIR recommended limiting access on this roadway segment. The traffic forecasts in the NVSSP DEIR indicated that traffic volumes will exceed County guidelines for roadway capacity under cumulative plus project conditions. This impact was considered significant and unavoidable in the NVSSP DEIR.

STUDY INTERSECTIONS MITIGATION MEASURES

TC-19. SR 16/S. Watt Avenue – Widening the southbound approach to include dual left-turn lanes will result in less than a 0.05 increase in the V/C ratio during the p.m. peak hour.

The NVSSP DEIR recommended modifying this intersection to include a fourth through lane on the northbound and southbound approaches under cumulative plus project conditions. However, Sacramento County does not typically construct eight-lane roadway segments. This intersection operated at LOS F with and without the NVSSP under cumulative conditions in the DEIR. Therefore, this impact was not considered significant in the DEIR.

TC-20. SR 16/Bradshaw Road – Widening the northbound and southbound approaches to include two exclusive left turn lanes, two through lanes and a shared through/right-turn lane will result in less than a 0.05 increase in the V/C ratio during the a.m. and p.m. peak hours.

The NVSSP DEIR recommended modifying this intersection to include dual right-turn lanes on the eastbound approach and triple left-turn lanes on the northbound approach under cumulative plus project conditions.

TC-21. Elder Creek Road/Bradshaw Road – Widening the northbound and southbound approaches to include a third through lane will improve operations to LOS D during the a.m. peak hour and LOS C during the p.m. peak hour. This improvement is consistent with the recommended widening of Bradshaw Road to six lanes between Elder Creek Road and Florin Road.

The NVSSP DEIR recommended modifying this intersection to include dual right-turn lanes on the eastbound approach under cumulative plus project conditions. However, intersection operations remained at LOS F during the p.m. peak hour with these improvements and the impact was considered significant and unavoidable in the NVSSP DEIR.

TC-22. Florin Road/Elk Grove-Florin Road – Widening the northbound and southbound approaches to include a third through lane will improve operations to LOS E during the p.m. peak hour.

The NVSSP DEIR recommended modifying this intersection to include a fourth through lane on the northbound and southbound approaches under cumulative plus project conditions. However, Sacramento County does not typically construct eight-lane roadway segments. Therefore, this impact was considered significant and unavoidable in the NVSSP DEIR.

TC-23. Florin Road/Bradshaw Road – Widening the northbound and southbound approaches to include a third through lane and widening the eastbound approach to include a second exclusive left-turn lane will improve operations to LOS E during the a.m. peak hour. This improvement is consistent with the recommended widening of Florin Road to four lanes between Watt Avenue and Bradshaw Road and with the recommended widening of Bradshaw Road to six lanes between Elder Creek Road and Florin Road.

The NVSSP DEIR recommended modifying this intersection to include a fourth through lane on the northbound and southbound approaches under cumulative plus project conditions. However, Sacramento County does not typically construct eight-lane roadway segments. Therefore, this impact was considered significant and unavoidable in the NVSSP DEIR.

PHASING OF IMPROVEMENTS

Subsequent to the preparation of this Traffic Study, Fehr & Peers completed its evaluation to identify the timing of roadway infrastructure improvements based on the number of dwelling units constructed in the North Vineyard Station Specific Plan (NVSSP). This evaluation expands on the traffic analysis documented in the *Final Report – Transportation Analysis for the North Vineyard Station Specific Plan Phasing Analysis*, April 3, 2002, which identified roadway and intersection improvements with phased development of the specific plan. These improvements are shown on Figure 1. However, the phasing analysis did not tie the timing of improvements to a specific number of constructed dwelling units. At the request of the Sacramento County Public Infrastructure Finance Section, we expanded the phasing analysis to identify the number of dwelling units that would trigger the need for each improvement. The following documents their analysis methodology and evaluation results.

METHODOLOGY

Fehr and Peer's analysis is based on the daily roadway volumes and peak hour intersection turning movement forecasts for each development phase contained in the April 3, 2002 phasing analysis (i.e., Phase 1A, Phase 1B, Year 2010 development, and

Year 2015 development). F & P identified the improvement triggers (i.e., the number of dwelling units constructed in the specific plan) using the following steps.

• Identified the increase in traffic on a study roadway or through a study intersection that caused an impact based on the thresholds contained in the *County of Sacramento Traffic Impact Guidelines* (July, 1997).

• Identified the specific plan's traffic contribution to the impacted facility.

• Identified the number of dwelling units that would generate the specific plan's traffic contribution.

Although F & P's analysis is based on the proposed phasing of the NVSSP contained in the April 3, 2002 *Final Report*, the results reported below reference the new phase numbers (i.e., Phases A-1, A-2, B, C, D, and E) for the NVSSP. The following table summarizes the number of dwelling units that trigger each improvement. For reference, F & P has identified the total number of dwelling units by phase, the dwelling unit trigger by phase, and the cumulative number of dwelling units constructed at the time an improvement is triggered. For example, Florin Road/Excelsior Road intersection improvements would be triggered with the 300th unit constructed in Phase B, which corresponds to 1,848 total units constructed in the specific plan.

Table TC-19
Dwelling Unit Triggers for Construction of Improvements

Phase	Improvement Location	Dwelling Unit Trigger by Phase	Cumulative Number of Units Constructed
A-1 (601 Units)	None	-	601
A-2 (947 Units)	Gerber Road – Elk Grove Flroin Road to Bradshaw Road	300	901
	South Watt Avenue/Elder Creek Road Intersection	600	1,201
B (1,261 Units)	Florin Road/Excelsior Road Intersection	300	1,848
	South Watt Avenue/State Route 16 Intersection	700	2,248
	Gerber Road/Excelsior Road Intersection	1,000	2,548
	Elk Grove Florin Road – Gerber Road to Calvine Road		
	South Watt Avenue – North of SR 16		
C (1,260 Units)	Bradshaw Road/SR 16 Intersection	300	3,109
D (920 Units)	South Watt Avenue – Elker Creek Road to SR 16	400	4,469
	Florin Road – Bradshaw Road to Elk Grove Florin Road		
	Florin Road – East of Elk Grove Florin Road		
E (729 Units)	Bradshaw Road – Elder Creek Road to Florin Road	700	5,689
		Specific Plan Build-Out	5,718

RECOMMENDATIONS/REQUIREMENTS OF THE COUNTY DEPARTMENT OF TRANSPORTATION:

VINEYARD CREEK SUBDIVISION

1. The spacing between A Drive and F Way must be a minimum of 420 feet apart in order to accommodate two left turn pockets on Waterman Road.

2. Construct a minimum 48-foot street section including 36 feet of pavement and a 12-foot median for the offsite right-of-way on Waterman Road per the North Vineyard Station P.F.F.P.

3. Grant the County right-of-way on Waterman Road based on either a 72-foot modified arterial without a median or a 76-foot modified arterial with a landscape median pursuant to the North Vineyard Station Specific Plan, the Sacramento County Improvements Standards, and to the satisfaction of the Department of Transportation.

4. Install public street improvements along Waterman Road pursuant to the North Vineyard Station Specific Plan, the Sacramento County Improvement Standards, and to the satisfaction of the Department of Transportation.

5. Show the required raised median on the Waterman Road street section.

6. Dedicate additional right-of-way on Waterman Road and A Drive for intersection widening per the Sacramento County Improvement Standard Drawing 4-6B and to the satisfaction of the Department of Transportation. Note: A bus turnout will be required on Waterman Road.

7. Grant the County right-of-way on Florin Road based on a 96-foot modified thoroughfare pursuant to the North Vineyard Station Specific Plan, the Sacramento County Improvement Standards, and to the satisfaction of the Department of Transportation.

8. Install public street improvements along Florin Road pursuant to the North Vineyard Station Specific Plan, the Sacramento County Improvement Standards, and to the satisfaction of the Department of Transportation.

9. Dedicate additional right-of-way on Florin ~~r~~Road and L Way for intersection widening per the Sacramento County Improvement Standard Drawing 4-5 and to the satisfaction of the Department of Transportation. Note: A bus turnout will be required on Florin Road.

10. No more than 100 units with access to L Way shall be constructed until there is a second point of access.

11. Lot 380 shall not be allowed to develop unless access can be provided to the west in order to avoid crossing the CCTC.

12. Reconfigure area comprising G Circle in order to bring street elbow into compliance with County standards.

13. Dedicate the landscaped lots to the County of Sacramento and provide a maintenance entity with an ongoing funding source. The maintenance entity shall be approved and found acceptable by County representatives. Annexation to a current Lighting and Landscape District or a Mello Roos Community Finance District may be possible and is the preferred course of action.

14. Traffic control devices shall be installed where needed to the satisfaction of the Department of Transportation. Traffic control locations will be determined at time of improvement plan submittal.

VINEYARD POINT SUBDIVISION

1. Grant the County right-of-way on Gerber Road based on a 72-foot modified standard and install public street improvements pursuant to Sacramento County Improvement Standards and to the satisfaction of the Department of Transportation.

2. Grant the County right-of-way on Bradshaw Road based on a 96-foot modified standard and install public street improvements pursuant to Sacramento County Improvement Standards and to the satisfaction of the Department of Transportation.

3. Dedicate additional right-of-way on Bradshaw Road and ‘11’ Street for intersection widening per Standard Drawing 4-8 of the Sacramento County Improvement Standards and to the satisfaction of the Department of Transportation. Note: A bus turnout will be required on Bradshaw Road.

4. Dedicate additional right-of-way on Bradshaw Road and ‘9’ Street for intersection widening per Standard Drawing 4-8 of the Sacramento County Improvement Standards and to the satisfaction of the Department of Transportation. Note: A bus turnout will be required on Bradshaw Road.

5. Dedicate additional right-of-way on Gerber Road and ‘5’ Street for intersection widening per Standard Drawing 4-8 of the Sacramento County Improvement Standards and to the satisfaction of the Department of Transportation. Note: A bus turnout will be required on Gerber Road. In addition, the median at the intersection of ‘P’ Drive/’O’ Circle and ‘5’ Street will need to be redesigned to allow full turning movements at that intersection.

6. Provide a 30-foot half width along park frontages for on-street parking. Note: If the park will be providing recreational areas such as soccer fields and/or baseball fields, then on site parking will be required.

7. Stop signs should be installed where needed to the satisfaction of the Department of Transportation. Stop sign locations will be determined at time of improvement plan submittal.

8. The proposed public street entrance from Gerber Road should be a minimum of 50 feet in width, excluding median width, for a distance of 100 feet per the Sacramento County Improvement Standards and to the satisfaction of the Department of Transportation.

9. The proposed public street entrance from Bradshaw Road should be a minimum of 50 feet in width, excluding median width, for a distance of 100 feet per the Sacramento County Improvement Standards and to the satisfaction of the Department of Transportation.

10. Visibility easements should be included where needed per the Sacramento County Improvement Standards and to the satisfaction of the Department of Transportation.

11. All pedestrian access ramps affected by this project must be installed/upgraded pursuant to the State of California Title 24 Code of Regulations and to the satisfaction of the Department of Transportation.

8 AIR QUALITY

INTRODUCTION

An air quality analysis was prepared for the previous EIR for the North Vineyard Station Specific Plan. The EIR concluded that the project will increase regional concentrations of ozone and could further delay the eventual attainment of state and federal standards. Also, the projects carbon monoxide emissions would contribute to adverse localized air quality conditions at congested intersections. Any reduction in project vehicle trips and emissions would help reduce impacts on air quality; however, basin-wide emissions would increase with the project. Because these emissions would contribute to conditions that already violate air quality standards, effects upon air quality were considered significant and unavoidable.

IMPACTS AND ANALYSIS

According to the Sacramento County Department of Transportation (Clark):

> "The Department of Transportation has reviewed the trip generation analysis prepared for the proposed changes in the land use plan for the North Vineyard Specific Plan by Fehr & Peers Transportation Consultant, March 4, 2003, and concurs with the conclusions that the changes in overall project trip generation are minor. The increase in project trip generation with the change in number of units is around 2%. Department of Transportation staff believes that this increase in the project trip generation will not result in any changes in the conclusions presented in the FEIR."

Because the changes in the land use plan are considered minor, it is not expected that these changes will contribute to additional regional air quality impacts beyond those already analyzed in the prior FEIR.

As for short-term construction-related impacts, the standard for particulate matter (dust) measuring ten microns or less (PM_{10}) has been revised since the previous EIR was published. The SMAQMD's threshold of significance for dust/PM_{10} is now 50 micrograms per cubic meter; it was 275 pounds per day for projects undergoing CEQA review prior to May 2002. The previous EIR concluded that construction dust impacts were less than significant. However, with the revised standard, particulate emissions must be more carefully managed and the ability to mitigate to less than significant levels for large projects is difficult if not impossible to achieve. Therefore construction impacts for the project are now considered a significant impact. This issue is discussed further in this section.

REGIONAL EMISSIONS

The following travel demand reduction measures were included in the adopted NVSSP. These measures were intended to lessen air quality impacts by reducing trip generation and attendant traffic congestion. Travel demand reduction measures were included to lessen the impact to air quality by eliminating vehicle trips, reducing their length, or changing the time of day when they occur.

The NVSSP addressed General Plan policies intended to mitigate land use development impact on air quality in the following manner:

Policy AQ-23. Promote mixed-use development to reduce the length and frequency of vehicle trips.

> The Plan includes a mixture of land uses and over 38 acres designed for retail commercial and business/professional uses. While these uses are not intended to meet all employment and commercial needs of Plan area residents, it is anticipated that the length and frequency of trips will be reduced to some degree.

Policy AQ-24. Provide for increased intensity of development along existing and proposed transit corridors.

> The Plan is consistent with Policy AQ-24 because the highest intensity land uses (Neighborhood Commercial and Business/Professional) and the majority of the highest density residential uses (Multi-Family Residential) are located near the Transit Center, a proposed future light rail station. All Commercial and Medium and Multi-Family Residential land uses are located on major arterials easily served by transit.

BUS AND LIGHT RAIL TRANSIT FACILITIES

Provision of Public transit within the county is guided by the following General Plan Policy:

> *Policy CI-4. Require full and accurate analysis of all alternatives for public transit, including expanded bus service, private carrier operations, road capacity improvements, and rail transit, prior to committing funds for construction. Evaluation shall specifically include full social and economic costs and benefits, as well as net system effects and per-new-rider costs.*

Regional Transit's Transit Master Plan identified costs and benefits of transit service, including specific recommendations for the study area. These recommendations include bus service along major streets and future light rail service through the Plan area within the California Central Traction Railroad right-of-way.

TRANSIT CORRIDORS

The transit facilities included as part of the Plan are designed to coordinate with and maximize the potential of those transit corridors identified by RT and Sacramento County. As noted in the Plan, RT guidelines recommend bus stops at one-quarter mile intervals in suburban settings, and they recommend turnouts when traffic volumes, speeds, and service frequency warrant safe stopping areas for buses. Consistent with this standard, the Circulation Plan shows bus stops at one-quarter mile intervals.

Roadways with the Specific Plan area will be designed to accommodate transit facilities such as turnouts, bus stops, and shelters should individual routes be designated on major collector streets. Thus, implementation of the proposed project will not disrupt or interfere with existing or planned transit operations in the area, and no operational deficiencies have been identified.

The Plan area has been designed to capitalize upon the designated bus routes. Specifically, higher density residential development, as well as commercial uses, are located at major intersections along transit routes, and the highest intensity land uses are located near the Transit Center.

TRANSIT CENTER

A 10-acre Transit Center has been designated in the Plan to ultimately provide parking for car pools and buses and to facilitate the possible future extension of light rail transit into the Plan area. Included are a 1.1-acre transit station site and nine acres for park and ride lots. The Transit Center adjoins the Plaza Park, a specialized park intended to compliment the transit facilities and attract transit users.

The Transit Center, as described in the Plan is designed in accordance with Sacramento RT design standards for suburban light rail stations with the following amenities:

- Security features
- Shelters (platforms and ramps)
- Station furniture (benches, trash receptacles, telephones, drinking fountains)
- Information display (kiosks, schedule displays)
- Fare vending equipment
- Lighting
- Landscaping/planters
- Bicycle lockers/secure bicycle racks
- Artwork
- Concessionaires

On the basis of RT standards of 100 parking spaces per acre, the nine-acre parking area can be expected to accommodate approximately 900 vehicles. Also, park and ride areas are permitted uses in the Commercial sites. These provisions for park and ride facilities are consistent with the following General Plan policy:

Policy AQ-28. Require that large new developments dedicate land for use as park-and-ride lots if suitably located.

TRAVEL DEMAND REDUCTION MEASURES

Travel demand reduction measures are incorporated into various aspects of the Plan in order to reduce vehicle emissions, thereby reducing traffic congestion and improving air quality. The General Plan addresses air quality in the following policy:

Policy AQ-15. All new major indirect sources of emissions shall be reviewed and modified or conditioned to achieve a reduction in emissions. This indirect source review program will be developed in coordination with SACOG and SMAQMD, and include the following features:

A. *A 15 percent reduction in emissions from the level that would be produced by a base-case project assuming full trip generation per the current ITE Trip Generation Handbook.*

B. *A focus on cost-effectiveness measured in terms of cost per ton of pollutant avoided.*

C. *A list of cost-effective measures to be developed, maintained, and annually reviewed by SMAQMD.*

D. *A maximum expenditure cap that will be computed for each indirect source on the basis of factors including, but not limited to, total emissions and project value.*

E. *A process for obtaining a waiver from the 15 percent requirement if it is found that a lower level of reduction is all that can be achieved with const-effective measures and offsets, or that achieving the full 15 percent reduction would cost more that expenditure cap.*

F. *An exception for projects that have already undergone the indirect source review at some point in the development approval process.*

G. *A procedure to give full credit for other measures required in a project that may also achieve a reduction in emissions.*

Sacramento County has developed a preliminary list of measures and corresponding credits that can be applied to the required 15 percent reduction in emissions. This list is based on data originally prepared by the SMAQMD in a February, 1995 report entitled *Indirect Source Review Program: Implementation Guidelines*. Sacramento County is currently developing specific requirements that will be incorporated into the Zoning Code.

The following measures, which are incorporated into the North Vineyard Station Specific Plan, are all contained in the preliminary list of acceptable measures. According to the

County's preliminary guidelines, the above measures result in a 15.5 percent reduction in emissions and meet the requirements of General Plan Policy AQ-15.

1. The Plan contains a mixture of complementary land uses (residential, commercial, parks, schools) located within the project or within one-half mile of the project boundaries. Approximately half of the Plan meets the County's criteria, which allows for up to a 6% credit. SPECIFIC PLAN CREDIT = 3%.

2. The Plan is designed to provide a transit stop within a reasonable distance of all land uses. The proposed roadway network of Arterial, Thoroughfare, and Collector streets would accommodate bus stops within one-quarter mile of most land uses. SPECIFIC PLAN CREDIT = 2%.

3. The Plan will include easements to accommodate bus stop improvements (route signs, benches, shelters and lighting) at all major transit stops. Current RT policy only requires easements for stops since a private firm provides the shelter and related improvements in exchange for advertising space. SPECIFIC PLAN CREDIT = 2%.

4. The Plan is designed to accommodate and provide access to the planned on-street (Class II) bicycle lanes as identified in the 2010 Sacramento City/County Bikeway Master Plan. On-street facilities within one-half mile of the project site are planned on Florin, Bradshaw, and Gerber Roads, and the entire Plan area meets the criteria. SPECIFIC PLAN CREDIT = 2%

5. In addition to the bikeways included in the Bikeway Master Plan, both on-street and off-street facilities are included throughout the Plan area and will be located within one-half mile of all major land uses. SPECIFIC PLAN CREDIT = 1.5%.

6. Through policy language, the Plan provides for direct (i.e., minimum distance) pedestrian connections between adjacent and complementary land uses. All parks, schools, and commercial areas will be connected to residential areas by interconnected roads and pathways. SPECIFIC PLAN CREDIT = 2%.

7. The Plan circulation system provides direct automobile access between complementary land uses to minimize the distance traveled, within the limits of physical constraints (i.e., drainage parkways). SPECIFIC PLAN CREDIT = 1%

8. The Plan area will participate in a Transportation Management Association to create, administer, and finance on-going programs to reduce vehicle trips. The Financing Plan for the Plan will include means to fund the TMA. SPECIFIC PLAN CREDIT = 3%.

TOTAL SPECIFIC PLAN CREDIT: 15.5%

CONSTRUCTION EMISSIONS

Since the previous EIR was published, the standard for particulate matter measuring ten microns or less (PM_{10}) has been revised. The SMAQMD's threshold of significance for dust/PM_{10} is now 50 micrograms per cubic meter; it was 275 pounds per day for projects undergoing CEQA review prior to May 2002.

Short-term air quality impacts are mostly due to dust (PM_{10}) generated by construction and development activities and the equipment and vehicles used during these activities. Dust generation is dependent on soil type and soil moisture, as well as the amount of total acreage actually involved in clearing, grubbing and grading activities. Clearing and earthmoving activities comprise the major source of construction dust generation, but traffic and general disturbance of the soil also contribute to the problem. Also sand, lime or other fine particulate materials may be used during construction, and stored on-site. If not stored properly, such materials could become airborne during periods of high winds. The effects of construction activities include increased dust fall and locally elevated levels of suspended particulates. As noted previously, PM_{10} is considered unhealthy because the particles are small enough to inhale and damage lung tissue, which can lead to respiratory problems. In the vicinity of the project the most sensitive local dust receptor would be residential uses and schools.

Some PM_{10} emissions during project construction will be reduced through compliance with institutional requirements for dust abatement and erosion control. These institutional measures include the SMAQMD "District Rule 403-Fugitive Dust", in the Sacramento County Code relating to land grading and erosion control [Title 16, Chapter 16.44, Section 16.44.070(K)], and the County's *'Standard Construction Specification'* requirements (BOS Resolution No. 92-0846) Section GS-6-16.

Calculation of PM_{10} emissions under the new standard of 50 micrograms per cubic meter requires use of a computer model. For an example, when SMAQMD ran a new air quality model for a shopping center project based on the new PM_{10} threshold of 50 micrograms per cubic meter, the analysis concluded that exposed surface site grading of 10 acres to a maximum of 25 acres at a time can be mitigated to a less than significant level if on site mobile source vehicles are limited to a maximum of seven vehicles, exposed soil is kept moist, soil piles are kept moist at all times or covered at all times, and least two feet of freeboard is maintained around the piles. The most critical assumption in this model run to ensure PM_{10} is kept to a less than significant level was <u>keeping exposed soil moist at all times</u>. In contrast, when a standard mitigation measure of watering exposed soil twice daily was substituted for the mitigation measure calling for keeping the soil moist at all times, the 50 micrograms per cubic meter was exceeded by 11 micrograms.

According to SMAQMD, greater dust mitigation could be achieved if development were required to "water exposed soil with adequate frequency to keep soil moist <u>at all times</u>" versus the standard requirement of watering exposed surfaces twice daily. However,

strict compliance with the requirement to “keep soil moist at all times” does not appear to be a practical measure to be imposed throughout the Plan area over the entire build-out period. Dust generation during construction activities is expected to exceed the PM_{10} threshold for significant impact given the level of construction activity expected within the Specific Plan area.

Construction activities are also a source of organic gas emissions; therefore, the project would elevate existing levels in the vicinity. Solvents in adhesives, non-waterbase paints, thinners, and some insulating and caulking materials would evaporate and participate in the photochemical reaction that creates urban ozone. Asphalt use in paving is also an organic gas for a short time after its application. Construction activities would result in the release of small amounts of solvents and other materials that are considered toxic air contaminants. In general, the highest exposure would occur for construction workers. Exposure to neighboring properties is not likely to be problematic because of the small amounts used and the short duration of release.

In an effort to further reduce emissions of pollutants to the atmosphere during the construction phase of the project, SMAQMD staff has identified mitigation that ensures the use of reduced-emission engines and reduced-emission alternative fuels (such as PuriNox and Ultra-Low Sulfur Diesel [ULSD]) to power heavy-duty on-road and off-road equipment during project construction. SMAQMD specific requirements and recommendations are included at the end of this chapter. Two of the SMAQMD requirements for diesel powered equipment NOx and visible emissions are also included as air quality mitigation measures to ensure emission reduction compliance is monitored pursuant to CEQA and SMAQMD.

VINEYARD CREEK AND VINEYARD POINT SUBDIVISIONS

The Sacramento Metropolitan Air Quality District (SMAQMD) commented that, due to their size, the Vineyard Creek and Vineyard Point projects exceed the District’s thresholds of significance. Therefore, construction related air quality impacts are considered significant. The following mitigation measures may reduce this impact but not likely to less-than-significant levels given the size of the developments.

RECOMMENDATIONS OF THE SMAQMD

The following are recommendations of the SMAQMD and are not mitigation measures:

1. The use of an aqueous base alternative fuel as a fuel for heavy-duty, off-road, diesel-powered equipment is also recommended. These alternative fuels will reduce NOx emissions by approximately 14% and PM10 emissions by approximately 63%.

2. Limit diesel engine idling to not more than 5 minutes, before turning off the engine.

3. During the construction phase(s) of the project, District Rule 403 – Fugitive Dust, will apply. The developer/contractor is required to control dust emissions from earth moving activities, or any other construction activity, to prevent airborne dust from leaving the project site. District Rules are available at www.airquality.org.

4. Any architectural coatings used must comply with District Rule 442 – Architectural Coatings. The developer/contractor is required to use coatings that comply with the volatile organic compound content limits specified in Rule 442. Questions regarding Rule 442 should be directed to the District's Compliance Assistance Hotline at (916) 874-4884.

5. We recommend that all required street trees be a minimum 24-inch box size. Larger trees provide shade that not only reduce heat, but also are more attractive to pedestrians for short trips to parks and neighborhood facilities.

6. If gas appliances are to be used in the dwelling units, District staff recommends the use of low NOx (Nitrogen Oxides) furnaces, water heaters, and cooking facilities.

7. We recommend that the developer install "Energy-Star" labeled roofing materials.

8. We recommend that the project comply with SMUD Advantage (Tier II or III) energy standards.

9. We recommend that an AQ-15 Air Quality Plan be developed to mitigate the air quality impacts of the project. Submission and approval of the plan should be completed as a condition of approval for the project. The AQ Plan should include, but not be limited to, the mitigation measures listed above.

MITIGATION MEASURES

AQ-1. The project shall provide a plan for approval by the County of Sacramento and SMAQMD demonstrating that the heavy-duty (>50 horsepower) off-road vehicles to be used in the construction project, including owned, leased and subcontractor vehicles, will achieve a project wide fleet-average 20 percent NOx reduction and 45 percent particulate reduction compared to the most recent CARB fleet average; and

AQ-2. The project representative shall submit to the County of Sacramento and SMAQMD a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 horsepower, that will be used an aggregate of 40 or more hours during any portion of the construction project. The inventory shall include the horsepower rating, engine production year, and hours of use or fuel throughput for each piece of equipment. The inventory shall be updated and submitted monthly throughout the duration of the project, except that an

inventory shall not be required for any 30-day period in which no construction activity occurs. At least 48 hours prior to the use of subject heavy-duty off-road equipment, the project representative shall provide SMAQMD with the anticipated construction timeline including start date, and name and phone number of the project manager and on-site foreman.

AQ-3. The project shall ensure that emissions from all off-road diesel powered equipment used on the project site do not exceed 40 percent opacity for more than three minutes in any one hour. Any equipment found to exceed 40 percent opacity shall be repaired immediately, and the County of Sacramento and SMAQMD shall be notified within 48 hours of identification of non-compliant equipment. A visual survey of all in-operation equipment shall be made at least weekly, and a monthly summary of the visual survey results shall be submitted throughout the duration of the project, except that the monthly summary shall not be required for any 30-day period in which no construction activity occurs. The monthly summary shall include the quantity and type of vehicles surveyed as well as the dates of each survey. The SMAQMD and/or other officials may conduct periodic site inspections to determine compliance. Nothing in this section shall supercede other SMAQMD or state rules or regulations.

AQ-4. The following construction-related measures apply to construction activities within the Specific Plan area:

- Water exposed, graded surfaces at least two times per day and if possible, keep soil moist at all times.
- Properly maintain diesel and/or gas fueled construction equipment.
- Water haul roads at least two times per day
- Use low VOC architectural coatings

AQ-5. Comply with the adopted AQ-15 Plan, which is included in section 7.6 (Travel demand reduction measures of the NVSSP text).~~.~~

~~AQ-6.Individual development projects within the Specific Plan Area shall achieve an additional 2 percent reduction in combined operational and area source air quality emissions to ensure overall AQ-15 compliance.~~

~~AQ-7.~~AQ-6. No wood burning appliances shall be permitted in new construction within the Specific Plan area. Fireplaces and similar “wood stoves” shall be fueled by natural gas or propane.

9 NOISE

BACKGROUND

Project related noise impacts on existing and future sensitive receptors were evaluated in the prior EIR. The analysis concluded that residential uses within the Plan Area could be adversely affected by noise generated by traffic, railroad operations and new commercial, business/professional, and school uses. The extent to which existing or future residential developments would be affected by these noise sources would depend on the proximity of the developments to the various noise sources. Residential developments close to major roadways were expected to be significantly impacted by traffic noise. Some residential uses located near the railroad track could also be adversely impacted by train operation noise. Future siting of commercial, business/professional, and school uses in proximity to residential uses could also cause noise-related land use compatibility impacts.

As a general precautionary measure, where noise sensitive land uses are proposed within the 60 dB L_{dn} noise contour for future traffic or railroad operations, an acoustical analysis should be required so that noise mitigation measures specific to a particular situation may be incorporated into the project design. The objectives of these mitigation measures are to ensure compliance with the Sacramento County noise standards and to protect noise sensitive developments from excessive noise levels.

The two maps submitted, as well as the water treatment facility, are located within the 60 dB Ldn noise contour, and require an acoustical analysis. Noise analyses for each were prepared by Bollard & Brennan, Inc. (December 2003) and are presented in the following discussion.

SETTING

Motor vehicle traffic is the major contributor to the existing noise environment in the Plan Area. Major vehicular noise in the Plan Area occurs along Florin Road, Gerber Road, and Bradshaw Road. Another major noise source in the Plan Area occurs along the Central California Traction Railroad Tracks as a result of train movement and operations along the railroad tracks. A third potentially significant noise source impacting the Plan Area is Mather Field, about 3 miles northeast of the Plan Area. There are no significant stationary noise sources, such as factories, stadiums, or industrial, or commercial uses, located in the Plan Area.

Residential uses are the primary ‘noise sensitive receptors’ located throughout the Plan Area. There are numerous existing residences located within the Plan Area and vicinity. Residences are principally located along Florin, Gerber, and Bradshaw Rroads. The

exception are the agricultural-residential homes located along minor roads such as McCoy Lane, Passalis Lane, and Hedge Avenue in the west Plan Area and vicinity, Heather Place Lane in the east Plan Area, Gavern Lane on the west side of Bradshaw Road, and Bar Du Lane on the south side of the Plan Area.

REGULATORY SETTING

In order to limit population exposure to physically and/or psychologically damaging noise levels, the State of California and Sacramento County have established standards and ordinances to control noise.

STATE OF CALIFORNIA

The California Department of Health Services' (DHS) Office of Noise Control has studied the correlation of noise levels and their effects on different land uses. As a result, the DHS has established four categories for judging the severity of noise intrusion on specified land use. Noise in the "normally acceptable" category places no undue burden on affected receptors and would need no mitigation. As noise rises into the "conditionally acceptable" range, some mitigation of exposure, as established by an acoustic study, would be warranted. At the next level, noise intrusion is so severe that it is classified "normally unacceptable" and would require extraordinary noise reduction measures to avoid disruption. Finally, noise in the "clearly unacceptable" category is so severe that it cannot be mitigated.

Title 24 of the California Administrative Code establishes standards governing interior noise levels that apply to all new multifamily residential units in California. The standards require that acoustical studies be performed prior to construction at building locations where the existing L_{dn} exceeds 60 dBA. Such acoustical studies are required to establish mitigation measures that will limit maximum L_{dn} noise levels to 45 dBA in any inhabitable room. The U.S. Department of Housing and Urban Development (HUD) has set an L_{dn} of 45 as its goal for interior noise in residential units built with HUD financing.

COUNTY GENERAL PLAN NOISE ELEMENT

In accordance with State noise regulations, the Sacramento County General Plan Noise Element sets forth land use compatibility criteria for various community noise levels, as shown on Table 9-1. For noise generated by transportation noise sources (roads and railroads), the Noise Element specifies that residential land uses are unconditionally compatible with exterior noise levels of up to 60 dB L_{dn}[1]. The 60 dB L_{dn} noise level is

[1] Ldn is the average day/night level where nighttime noise (10pm-7am) is mathematically increased by 10 decibels before averaging to account for increased sensitivity to nighttime noise. CNEL is the community

considered an acceptable noise environment for residential outdoor activities. Where the exterior noise level from transportation sources is between 60 and 75 dB L_{dn}, the Noise Element specifies that residential uses should be permitted only after careful study and inclusion of noise reduction, or attenuation measures as needed. In these instances, an exterior noise level of 65 dB L_{dn} may be allowed in outdoor activity areas provided that "all practical" exterior noise reduction measures are applied.

An interior noise level criteria of 45 dB L_{dn} is specified in the Noise Element for residential land uses exposed to transportation noise sources. The intent of this interior noise standard is to provide a suitable environment for indoor communication and sleep. For noise generated by non-transportation noise sources (industrial and commercial machinery and uses, etc.), the Noise Element specifies that residential land uses are compatible with exterior daytime levels up to 80 dB L_{max}.

The Noise Element policies associated with transportation and non-transportation noise sources applicable to the current project are as follows:

Policy NO-1. Noise created by new transportation* noise sources should be mitigated so as not to exceed 60 dB L_{dn}/CNEL** at the outdoor activity areas of any affected residential lands or land use situated in the unincorporated areas. When a practical application of the best available noise-reduction technology cannot achieve the 60dB L_{dn} CNEL standard, then an exterior noise level of 65dB L_{dn} CNEL may be allowed in outdoor activity areas.

Policy NO-2. Noise created by new non-transportation noise sources shall be mitigated so as not to exceed any of the noise level standards of Table II-1 (*Table 9-2 of this EIR*), as measured immediately within the property line of any affected residentially designated lands or residential land use situated in the unincorporated areas.

Policy NO-3. Where proposed non-transportation noise sources are likely to produce noise levels exceeding the performance standards of Table II-1 (*Table 9-2 of this EIR*) at existing or planned residential uses, an acoustical analysis shall be required as part of the environmental review process so that noise mitigation may be included in the project design. (Requirements for the content of an acoustical analysis are given by Table II-2.)

Policy NO-4. Where residential land uses are proposed in areas exposed to existing or projected exterior noise levels exceeding either 60 dB

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noise equivalent level. Generally equal to the Ldn, CNEL calculations also penalize evening noises (7pm-10pm) by 5 decibels before calculating the average.

L_{dn}/CNEL or the performance standards of Table II-1 (*Table 9-2 of this EIR*), an acoustical analysis shall be required as part of the environmental review process so that noise mitigation may be included in the project design.

Table 9-1
County Land Use Compatibility for Community Noise Environments

LAND USE CATEGORY	**COMMUNITY NOISE ENVIRONMENTS** L_{dn} or CNEL dB					
	55	60	65	70	75	80
RESIDENTIAL Including AR-1 and AR-2						
AGRICULTURAL RESIDENTIAL 5 and 10 acres						
TRANSIENT LODGING-MOTELS, HOTELS						
SCHOOLS, LIBRARIES, CHURCHES, HOSPITALS, NURSING HOMES						
AUDITORIUMS, CONCERT HALLS, AMPHITHEATRES, SPORTS ARENAS						
PLAYGROUNDS, NEIGHBORHOOD PARKS						
GOLF COURSES, RIDING STABLES, WATER RECREATION, CEMETERIES						
OFFICE BUILDINGS, BUSINESS COMMERCIAL AND PROFESSIONAL						
INDUSTRIAL, MANUFACTURING, UTILITIES, AGRICULTURE						
OPEN SPACE, AGRICULTURE						

	ACCEPTABLE: Specified land use is satisfactory.

	CONDITIONALLY ACCEPTABLE Use should be permitted only after careful study and inclusion of protective measures as needed for intended use and to satisfy policies of the Noise Element
	UNACCEPTABLE: Development not feasible in accordance with Noise Element. Use prohibited

Policy NO-5 New residential development shall not be allowed where the noise level due to non-transportation noise sources will exceed the noise level standards of Table II-1 (*Table 9-2 of this EIR*), as measured immediately within the property line of the new development.

Policy NO-6. The compatibility of proposed nonresidential projects with existing and future noise levels due to transportation noise sources shall be evaluated through a comparison to Figure II-1, "Land Use Compatibility for Community Noise Environments" and Table II-3, "Acceptable Noise Levels in Unoccupied Rooms" (*Table 9-3 of this EIR*), and to Figure II-4 for projects affected by aircraft noise.

Policy NO-7. Proposed development of residential land uses should not be permitted: 1) In areas exposed to existing or projected levels of noise from transportation noise sources which exceed 60 dB to 65 dB L_{dn}/CNEL unless the project design includes effective mitigation measures to reduce noise to 60 dB to 65 dB L_{dn}/CNEL or less in outdoor activity areas, and 45 dB L_{dn}/CNEL or less in indoor areas; and 2) For 5 and 10 acre Agricultural-Residential land use the standard for exterior noise is also 60 dB to 65 dB L_{dn}/CNEL. The standard remains at 45 dB L_{dn}/CNEL for interior noise levels.

Table 9-2
Sacramento County Noise Level Performance Standards
For Residential Areas Affected by Non-transportation Noise

Statistical Noise Level Descriptor	**Exterior Noise Level Standard**	
	Daytime (7am-10pm)	**Nighttime (10pm-7am)**
L_{50}	50 dB	45 dB
L_{max}	70 dB	65 dB

Source: Sacramento County Noise Element, Table II-1 (p.7).

Table 9-3
Acceptable Noise Levels in Unoccupied Rooms Affected by Transportation Noise

Location	Average Sound Level, dB [1]
Radio studios, recording studios	25-30
Concert halls, large auditoriums	30-35
Motion picture theaters	40-45
Conference rooms, small offices	40-45
Public offices (large), banks, stores	45-50
Restaurants, cafeterias	45-55
Libraries	40-45
Music rooms	30-35
Theaters (speech)	30-35
Churches	35-40
Classrooms	35-45
Hospitals	40-45
Court rooms	40-45

[1] L_{eq} during worst case hour when in use.

Source: Brown Buntin & Associates. *Environmental Noise Analysis, North Vineyard Station Specific Plan*, December 4, 1996.

COUNTY NOISE CONTROL ORDINANCE

Noise generated by non-transportation noise sources are regulated by the County Noise Ordinance as summarized in Table 9-4.

RAILROADS

The Sacramento County General Plan Noise Element includes operational information from the three railroad companies within the County (Southern Pacific, Union Pacific, and Central California Traction). This information was used as inputs to the “Simplified Procedure for Assessment of Noise Emitted by On-Line Railroad Operations”, prepared by Wyle Laboratories in 1974. The Wyle laboratories methodology for prediction of railroad noise exposure is recommended by the State Office of Noise Control, and is considered to be reasonably accurate for generalized noise contour development. The operational information collected included average number of and nighttime trains, train speeds and warning horn usage locations. To ensure that railroad noise modeling methods would accurately portray noise levels in Sacramento County, noise measurements were performed at several locations in the County. Single event noise level information collected at each measurement site included the maximum noise level, duration and Sound Exposure Level (SEL) of each train passage. The reported and observed number of operations, and the noise measurement and prediction results are contained in Table 9-5.

Table 9-4
Sacramento County Noise Ordinance Standards

Cumulative Duration of the Intrusive Sound	Descriptor	Exterior Noise Standard, dB	
		Daytime (7am-10pm)	Nighttime (10pm-7am)
30-60 minutes per hour	L_{50}	55	50
15-30 minutes per hour	L_{25}	60	55
5-15 minutes per hour	L_{08}	65	60
1-5 minutes per hour	L_{02}	70	65
Level not to be exceeded at any time	L_{max}	75	70

Table 9-5
Operational Information and Noise Measurement Results
Sacramento County Railroads

	Total Daily Trains		Nighttime Trains		L_{dn}, dB at 100 feet		Distance to 60 dB L_{dn} Noise Contour
Railroad	Reported	Observed	Reported	Observed	Wyle	Computed *	
SPRR							
North	40	37	16 – 20	23	77	67	1360
South	20	19	8 – 10	8	74	70	860
Placerville	2	-	0	-	57	-	60
Ione	N/A**	-	-	-	-	-	-
UPRR							
North	15	17	5	7	72	70	630
South	15	7	5	3	72	69	630
CCTC	2	-	0	-	57	-	60

*L_{dn} values computed from noise measurement results and reported operational data.

**The Ione branch line is used infrequently by “local” freights, and no specific operational data are available

NON-REGULATORY SETTING

SUBJECTIVE REACTIONS TO CHANGES IN NOISE LEVELS

Another means of assessing noise impact is to estimate public reaction to the change in noise level which result from a given project. Expected human reaction to changes in ambient noise levels have been quantified by metrics that define short-term exposure (e.g. hourly L_{eq}, L_{max}, and L_n). These metrics are usually used to describe noise impacts due to industrial operations, machinery and other sources that are not associated with transportation. An increase of at least 3 dB is usually required before most people will perceive a change in noise levels, and an increase of 5 dB is required before the change will be clearly noticeable.

Table 9-6 is used to show expected public reaction to changes in environmental noise levels. This table was developed on the basis of test subjects' reactions to changes in the levels of steady-state pure tones or broad-band noise and to changes in levels of a given noise source.

Table 9-7 is based upon 1992 recommendations made by the Federal Interagency Committee on Noise (FICON) to provide guidance in the assessment of changes in ambient noise levels resulting from aircraft operations. FICON recommendations are based upon studies that relate aircraft noise levels to the percentage of persons highly annoyed by the noise. Although the FICON recommendations were specifically developed to assess aircraft noise impacts, it has been assumed for this analysis that they are applicable to all sources of noise that are described in terms of cumulative noise exposure metrics such as the L_{dn} or CNEL.

Table 9-6
Subjective Reaction to Changes in Noise Levels of Similar Sources

Change in Level, dB	Subjective Reaction	Factor Change in Acoustical Energy
1	Imperceptible (Except for tones)	1.3
3	Just Barely Perceptible	2.0
5	Clearly Noticeable	3.2
10	About Twice (or Half) as loud	10.0

Source: *Architectural Acoustics, M. David Egan, 1988.*

Table 9-7
Significance of Changes in Cumulative Noise Exposure

Ambient Noise Level Without Project (L_{dn} or CNEL)	Significant Impact
<60 dB	+5.0 dB or more
60-65 dB	+3.0 dB or more
>65 dB	+1.5 dB or more
Source: Federal Interagency Committee on Noise (FICON), as applied by Brown-Buntin Associates, Inc.	

NOISE ANALYSIS

PRIOR NOISE STUDY FOR NVSSP

In accordance with Policies NO-3 and NO-4, an environmental noise analysis was prepared for the Specific Plan by Acoustical Consultants, Brown Buntin and Associates (BBA). The analysis concluded that the following measure would be implemented for any new development within the Specific Plan Area:

> Future noise sensitive residential land uses proposed for development within the future 60 dB L_{dn} traffic or railroad operation noise contours shall be required to prepare an acoustical analysis and to implement identified noise attenuation measures necessary to ensure compliance with the noise standards of the County General Plan Noise Element.

In accordance with this measure, acoustical analyses have been prepared for the Vineyard Creek subdivision, Vineyard Point subdivision, and the proposed water treatment facility. The acoustical consulting firm of Bollard and Brennan, Inc. was retained by the project applicant to prepare these analyses.

VINEYARD CREEK SUBDIVISION

TRAFFIC NOISE PREDICTION METHODOLOGY

Bollard and Brennan, Inc. employs the Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA RD-77-108) for the prediction of traffic

noise levels. The FHWA model is the analytical method currently favored for traffic noise prediction by most state and local agencies, including the California Department of Transportation (Caltrans). The model is based upon the CALVENO noise emission factors for automobiles, medium trucks and heavy trucks, with consideration given to

vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site.

On June 9, 2003, Bollard and Brennan, Inc. conducted noise level measurements and concurrent counts of Florin Road traffic at the project site. The purpose of the short-term traffic noise level measurement was to determine the accuracy of the FHWA model in describing the existing noise environment on the project site, actual travel speeds, and roadway grade. Noise measurement results were compared to the FHWA model results by entering the observed traffic volume, speed, and distance as inputs to the FHWA model. See Plate NS -1 for noise measurement locations.

Instrumentation used for the measurement was a Larson Davis Laboratories (LDL) Model 820 precision integrating sound level meter which was calibrated in the field before use with and LDL CA-200 acoustical calibrator. Table 9-8 shows the results of the traffic noise calibration. Based upon the calibration results, the FHWA Model was found to accurately predict Florin Road traffic noise levels within 0.6 dB of the measured noise levels on the project site.

Existing Traffic Noise Levels

Average daily traffic volumes for existing conditions were obtained from the traffic study performed for the NVSSP Phasing Analysis (Fehr & Peers Associates April 3, 2003). The day/night distribution was derived from Bollard and Brennan, Inc. file data for similar roadways. The percentages of medium and heavy trucks were estimated from Bollard and Brennan traffic counts. Estimated future traffic speed assumptions were based on posted speed limits and field observations. The FHWA Model inputs are contained in Table 9-9.

The FHWA model was used with the Table 9-9 data to predict future traffic noise levels at the project site. The results of that analysis at the identified locations of future outdoor activity areas (back yards) within the development are shown in Table 9-10.

Table 9-8
Comparison of FHWA Model to Measured Florin Road Traffic

Vehicles/Hr.				Speed (mph)	Dist. (Feet)[1]	Measured Leq , dB	Modeled Leq, dB[2]	Difference
Site	Autos	Med. Trk	Hvy. Trk					
1	328	16	4	50	50	63.8	64.4	+0.6 dB

[1] The noise measurement location is from the roadway centerline.
[2] Acoustically “soft” site assumed

Table 9-9
FHWA Traffic Noise Prediction Model Inputs, Existing Conditions
(Vineyard Creek Subdivision)

Roadway	Future ADT	Day/Night	Medium Trucks	Heavy Trucks	Speed
Florin Road	7,800	83%/17%	3.5%	2%	45 mph
Waterman Road	N/A	83%/17%	3.5%	2%	45%

Source: Traffic Study for the NVSSP Phasing Analysis, and Bollard and Brennan, Inc. file data.

Table 9-10
Existing Traffic Noise Levels
(Vineyard Creek Subdivision)

Location	Distance from Backyard to Roadway Centerline	Computed L_{dn}, dB (unmitigated)	Distance to 60 dB Contour	Distance to 65 dB Contour
Florin Road	100’	63	153’	71’
Waterman Road	NA[1]	NA	NA	NA

[1]Waterman Road does not yet exist on the site.

PREDICTED FUTURE TRAFFIC NOISE LEVELS

The FHWA model was used with the Table 9-11 data to predict future traffic noise levels at the project site. The results of that analysis, at the identified locations of future outdoor activity areas (backyards), within the development, are shown in Table 9-12.

Table 9-11
FHWA Traffic Noise Prediction Model Inputs, Future Conditions
(Vineyard Creek Subdivision)

Roadway	Future ADT	Day/Night	Medium Trucks	Heavy Trucks	Speed
Florin Road	19,300	83%/17%	3.5%	2%	45 mph
Waterman Road	8,700	83%/17%	3.5%	2%	45%

Source: Traffic Study for the NVSSP Phasing Analysis, and Bollard and Brennan, Inc. file data.

Table 9-12
Predicted Future Traffic Noise Levels
(Vineyard Creek Subdivision)

Location	Distance from Backyard to Roadway Centerline	Computed L_{dn}, dB (unmitigated)	Distance to 60 dB Contour	Distance to 65 dB Contour
Florin Road	100’	67	280’	130’
Waterman Road	80’	65	165’	76’

EXTERIOR TRAFFIC NOISE LEVELS

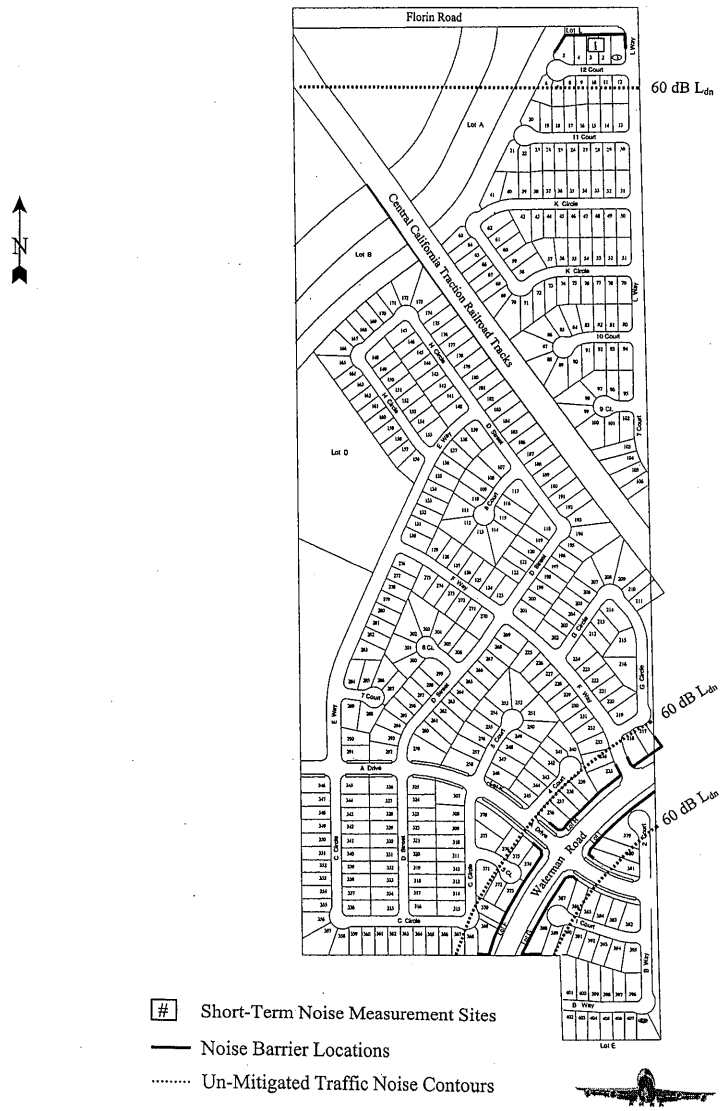
It is apparent from the Table 9-12 data that the residences proposed nearest to Florin Road and Waterman Road would be exposed to future traffic noise levels which exceed the 60 dB L_{dn} Sacramento County Noise Element standard. The ~~Table XX~~ Table 9-12data indicate that the predicted future unmitigated traffic noise levels in the nearest proposed lots adjacent to Florin Road and Waterman Road would be approximately 67 db L_{dn} and 65 dB L_{dn} respectively.

To achieve compliance with the Sacramento County 60 dB L_{dn} exterior noise level standard, Bollard and Brennan, Inc. evaluated the effectiveness of a solid noise barrier in reducing future Florin Road and Waterman Road traffic noise levels for this development.

The FHWA Model traffic noise barrier insertion loss methodology was used to determine the noise reduction which would be provided by a noise barrier of various heights. All assumptions were per usual FHWA practice, with the receiver located at a height of 5 feet above ground in the approximate center of the back yard area, and the autos, medium and heavy trucks located at heights of 0,2 and 8 feet above the roadway elevation, respectively. The summarized results of the FHWA barrier analysis for the receivers located nearest to Florin Road and Waterman Road are contained in Table 9-13.

Plate NS -1
Noise Measurement Sites and Barrier Locations
(Vineyard Creek Subdivision)

Figure 2
Vineyard Creek Subdivision
Noise Measurement Sites and Barrier Locations



Bollard & Brennan, Inc.

Table 9-13
Predicted Future Traffic Noise Levels with Varying Property Line Barrier Heights (Vineyard Creek Subdivision)

Roadway	Location	Barrier Height	Predicted L_{dn}, dB
Florin Road	Property Line	6’	61
		7’	60
		8’	59
Waterman Road	Property Line	6’	59
		7’	58
		8’	57
Note: All barriers are assumed to be located at the rear of the residential backyards. The distance shown reflects the approximate locations of the center of the backyards to the roadway centerline.			

The Table 9-13 data indicate that barrier heights of 7-feet and 6-feet would be required to reduce future traffic noise levels to less than 60 dB L_{dn} at the lots proposed nearest to Florin Road and Waterman Road, respectively. A 30-foot barrier wrap should be provided at the ends of all barriers in order to provide complete shielding to the outdoor areas. Openings for access roads should wrap a minimum of 10-feet. Barrier locations are shown in Plate ~~XX~~NS-1.

Interior Traffic Noise Levels

The Table 9-12 data indicate that future Florin Road and Waterman Road traffic noise levels at the unshielded first-floor locations of the nearest residences would be approximately 67 dB L_{dn} and 65 dB L_{dn}, respectively. Following construction of the property line noise barriers, future traffic noise levels at first floor facades will be 60 dB L_{dn} or less. Due to reduced ground absorption at elevated positions, second floor noise levels are generally about 2-3 dB higher than unshielded first floor locations (70 dB L_{dn} and 68 dB L_{dn}). To achieve compliance with the Sacramento County 45 dB L_{dn} interior noise level standard at exposed second floor locations nearest to the roadways, building façade noise level reductions of approximately 25 dB and 23 dB would be required. At first floor facades, a building façade noise reduction of 15 – 20 dB would be required.

Standard residential construction (wood siding, STC-28 windows, door weatherstripping, exterior wall insulation, composition plywood roof), results in an exterior to interior noise reduction of about 25 dB with windows closed, and approximately 15 dB with windows open. Therefore, standard construction would be acceptable for first and second floor facades.

Evaluation of Future Railroad Noise Levels

The CCTC railroad tracks cross diagonally through the project site. According to a representative of the Sacramento Area Council of Governments (SACOG), the CCTC

no longer uses these tracks and they have not been used in over 2 years. In addition, there are currently no plans for use of these tracks for either light or heavy rail.

Based upon the Vineyard Creek Tentative Map, residential property lines are located 50 feet from the railroad track centerline, and therefore, the property lines are inside of the 60 dB L_{dn} noise level contour, associated with the CCTC operations. However, all residential outdoor activity areas within the Vineyard Creek subdivision are a minimum of 10 feet from the property line, and are therefore, located outside of the 60 dB L_{dn} CCTC noise contour.

IMPACTS

Residences proposed nearest to Florin Road and Waterman Road would be exposed to future traffic noise levels that exceed the 60 dB L_{dn} Sacramento County Noise Element Standard. This impact is considered significant.

MITIGATION MEASURES

NO-1. A 7-foot tall property line barrier along Florin Road and a 6-foot tall property line barrier along Waterman Road, shall be constructed. Sufficient barrier wrap should be provided as shown in Plate NS -1.

VINEYARD POINT SUBDIVISION

TRAFFIC NOISE PREDICTION MODEL

Bollard and Brennan, Inc. employs the Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA RD-77-108) for the prediction of traffic noise levels. The FHWA model is the analytical method currently favored for traffic noise prediction by most state and local agencies, including the California Department of Transportation (Caltrans). The model is based upon the CALVENO noise emission factors for automobiles, medium trucks and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site.

On June 9, 2003, Bollard and Brennan, Inc. conducted noise level measurements and concurrent counts of Bradshaw Road and Gerber Road traffic at the project site. The purpose of the short-term traffic noise level measurement was to determine the accuracy of the FHWA model in describing the existing noise environment on the project site, actual travel speeds, and roadway grade. Noise measurement results were compared to the FHWA model results by entering the observed traffic volume, speed, and distance as inputs to the FHWA model. See Plate NS -2 for noise measurement locations.

Instrumentation used for the measurement was a Larson Davis Laboratories (LDL) Model 820 precision integrating sound level meter which was calibrated in the field

before use with and LDL CA-200 acoustical calibrator. Table 9-14 shows the results of the traffic noise calibration. Based upon the calibration results, the FHWA Model was found to accurately predict Florin Road traffic noise levels within 0.6 dB of the measured noise levels on the project site.

Table 9-14
Comparison of FHWA Model to Measured
Bradshaw Road and Gerber Road Traffic

Vehicles/Hr.				Speed (mph)	Dist. (feet)[1]	Measured L_{eq}, dB	Modeled L_{eq}, dB[2]	Difference
Site	Autos	Med. Trk.	Hvy. Trk.					
1	1292	32	40	45	60	67.0	68.6	+1.6dB
2	804	48	8	50	60	66.1	67.2	+1.1dB
3	692	32	0	50	60	65.9	65.8	-0.1dB

[1]The noise measurement location is from the roadway centerline
[2]Acoustically "soft" site assumed

Existing Traffic Noise Levels

Average daily traffic volumes for existing conditions were obtained from the traffic study performed for the NVSSP Phasing Analysis (Fehr & Peers Associates April 3, 2002). The day/night distribution was derived from Bollard and Brennan, Inc. file data for similar roadways. The percentages of medium and heavy trucks were estimated from Bollard and Brennan traffic counts. Estimated future traffic speed assumptions were based on posted speed limits and field observations. The FHWA Model inputs are contained Table 9-15.

The FHWA model was used with the Table 9-15 data to predict existing traffic noise levels at the project site. The results of that analysis at the identified locations of future outdoor activity areas (back yards) within the development are shown in Table 9-16

Plate NS -2
Noise Measurement Sites and Barrier Locations
(Vineyard Point Subdivision)

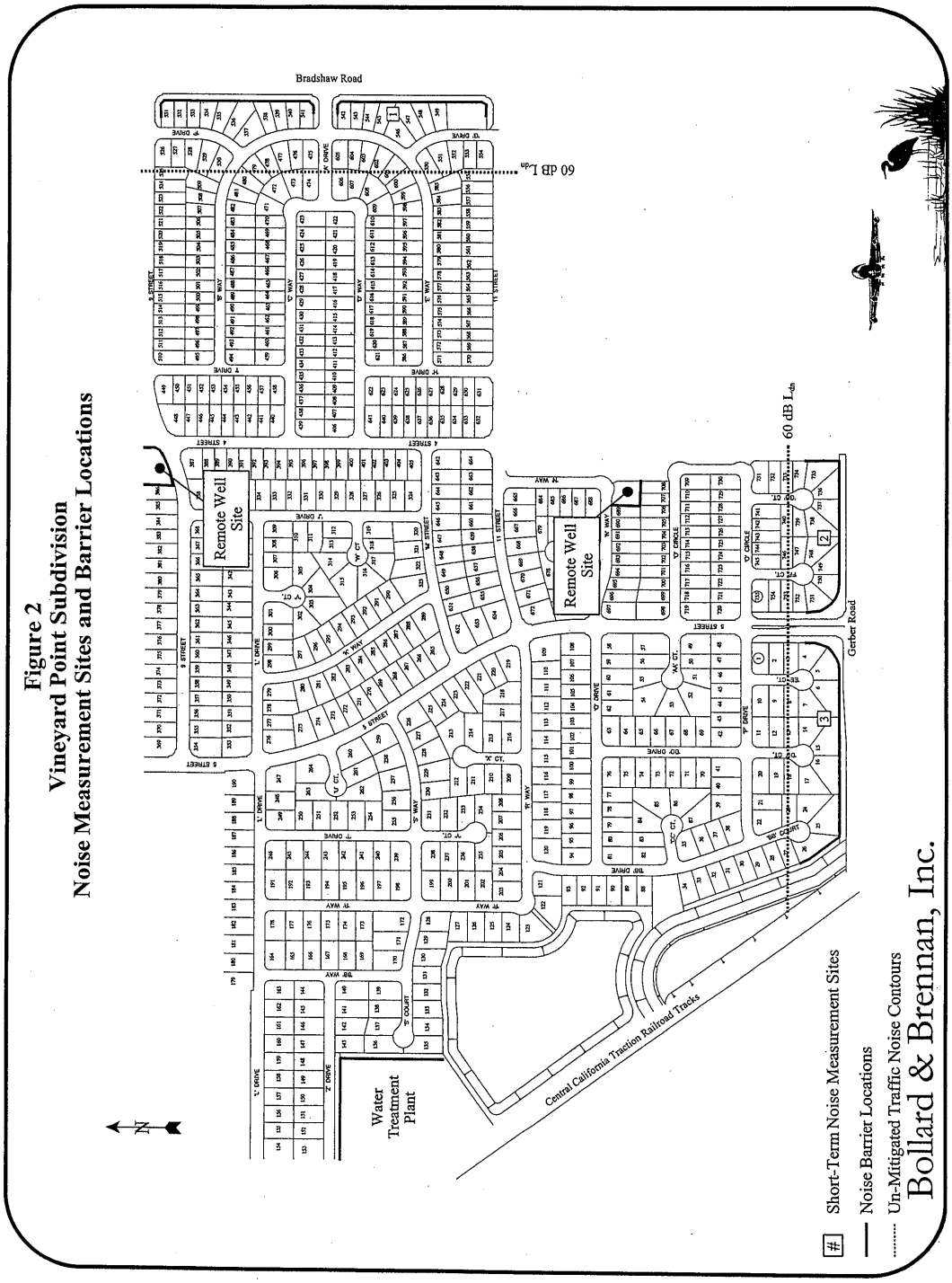


Table 9-15
FHWA Traffic Noise Prediction Model Inputs, Existing Conditions
(Vineyard Point Subdivision)

Roadway	Future ADT	Day/Night	Medium Trucks	Heavy Trucks	Speed
Bradshaw Road	14,500	83%/17%	2.5%	2%	45 mph
Gerber Road	7,500	83%/17%	2.5%	2%	45mph
Source: Traffic Study for the NVSSP Phasing Analysis, and Bollard and Brennan, Inc. file data.					

Table 9-16
Existing Traffic Noise Levels
(Vineyard Point Subdivision)

Location	Distance from Backyard to Roadway Centerline	Computed L_{dn}, dB (unmitigated)	Distance to 60 dB Contour	Distance to 65 dB Contour
Bradshaw Road	90’	66	226’	105’
Gerber Road	80’	64	145’	68’

FUTURE TRAFFIC NOISE LEVELS

Average daily traffic volumes for future conditions were obtained from the traffic study performed for the NVSSP Phasing Analysis (Fehr & Peers Associates April 3, 2003). The day/night distribution was derived from Bollard and Brennan, Inc. file data for similar roadways. The percentages of medium and heavy trucks were estimated from Bollard and Brennan traffic counts. Estimated future traffic speed assumptions were based on posted speed limits and field observations. The FHWA Model inputs are contained in Table 9-17.

Table 9-17
FHWA Traffic Noise Prediction Model Inputs, Future Conditions
(Vineyard Point Subdivision)

Roadway	Future ADT	Day/Night	Medium Trucks	Heavy Trucks	Speed
Bradshaw Road	26,500	83%/17%	3.5%	2%	45 mph
Gerber Road	17,100	83%/17%	3.5%	2%	45mph
Source: Traffic Study for the NVSSP Phasing Analysis, and Bollard and Brennan, Inc. file data.					

Predicted Future Traffic Noise Levels

The FHWA model was used with the Table 9-17 data to predict future traffic noise levels at the project site. The results of that analysis at the identified locations of future outdoor activity areas (back yards) within the development are shown in Table 9-18.

Table 9-18
Predicted Future Traffic Noise Levels
(Vineyard Point Subdivision)

Location	Distance from Backyard to Roadway Centerline	Computed L_{dn}, dB (unmitigated)	Distance to 60 dB Contour	Distance to 65 dB Contour
Bradshaw Road	90’	69	337’	157’
Gerber Road	80’	67	252’	117’

Exterior Noise Levels

It is apparent from the Table 9-18 data that the residences proposed nearest to Bradshaw Road and Gerber Road would be exposed to future traffic noise levels that exceed the 60 dB Ldn Sacramento County Noise Element standard. The Table 9-18 data indicate that the predicted future unmitigated traffic noise levels in the nearest proposed lots adjacent to Bradshaw Road and Gerber Road would be approximately 69 dB Ldn and 67 Ldn, respectively.

To achieve compliance with the Sacramento County 60 dB Ldn exterior noise level standard, Bollard and Brennan, Inc. evaluated the effectiveness of a solid property line barrier in reducing future Bradshaw Road and Gerber Road traffic noise levels for this development.

The FHWA model traffic noise insertion loss methodology was used to determine the noise reduction that would be provided by property line barriers of various heights. All assumptions were per usual FHWA practice, with the receiver located at a height of 5 feet above ground in the approximate center of the back yard area, and the autos, medium and heavy trucks located at heights of 0,2, and 8 feet above the roadway elevation, respectively. The summarized results of the FHWA barrier analysis for the receivers located nearest to Bradshaw Road and Gerber Road are contained in Table 9-19.

Table 9-19
Predicted Future Traffic Noise Levels with Varying Property Line Barrier Heights (Vineyard Point Subdivision)

Roadway	Location	Barrier Height	Predicted L_{dn}, dB
Bradshaw Road	Property Line	6’	63
		7’	62
		8’	61
		9’	60
		10’	59
Gerber Road	Property Line	6’	61
		7’	61
		8’	59
		9’	58
		10’	57
Note: All barriers are assumed to be located at the rear of the residential backyards. The distance shown reflects the approximate locations of the center of the backyards to the roadway centerline.			

The Table 9-19 data indicate that barrier heights of 9 and 8 feet would be required to reduce future traffic noise levels to less than 60 dB Ldn at the lots proposed nearest to Bradshaw Road and Gerber Road, respectively. A 30-foot barrier wrap should be provided at the ends of all barriers in order to provide complete shielding to the outdoor areas. Openings for access roads should wrap a minimum of 10-feet. Barrier locations are shown in Plate NS -2.

INTERIOR TRAFFIC NOISE LEVELS

The Table 9-18 data indicate that future Bradshaw Road and Gerber Road traffic noise levels at the unshielded first-floor locations of the nearest residences would be approximately 69 dB Ldn and 67 dB Ldn. Following construction of the property line

barriers, future traffic noise levels at first floor facades will be 60 dB Ldn or less. Due to reduced ground absorption at elevated positions, second floor noise levels are generally about 2 – 3 dB higher than unshielded first floor locations (72dB Ldn and 70 dB Ldn). To achieve compliance with the 45 dB Ldn interior noise level standard of the Sacramento County at exposed second floor locations nearest to the roadways, building facade noise level reductions of approximately 27 dB and 25 dB would be required. Standard residential construction (wood siding, STC-28 windows, door weatherstripping, exterior wall insulation, composition plywood roof), results in an exterior to interior noise reduction of about 25 dB with windows closed, and approximately 15 dB with windows open. Therefore, standard construction would be acceptable for first floor facades since those facades would be shielded by the required property line barrier. However, improvements to second-floor bedroom window assemblies are recommended for the lots adjacent to Bradshaw Road to achieve compliance with the County's interior noise level standard. In addition, mechanical ventilation (air conditioning) should be provided to allow occupants to close doors and windows to achieve the desired traffic noise isolation.

To satisfy the interior noise level standard of 45 dB at the second floor facades of the residences constructed adjacent to Bradshaw Road, all second-floor bedroom windows, from which the roadway is visible, should have a minimum sound transmission class (STC) rating of 30.

Evaluation of Future Railroad Noise Levels

The CCTC railroad tracks border the west side of the project site. According to a representative of the Sacramento Area Council of Governments (SACOG), the CCTC no longer uses these tracks and they have not been used in over 2 years. In addition, there are currently no plans for use of these tracks for either light or heavy rail.

Based upon the Vineyard Point Tentative Map, residential property lines are located outside the 60 dB Ldn CCTC noise contour.

Impacts

Residences proposed nearest to Bradshaw Road and Gerber Road would be exposed to future traffic noise levels that exceed the 60 dB L_{dn} Sacramento County Noise Element Standard. This impact is considered significant.

Mitigation Measures

NO-2. A 9-foot tall property line barrier along Bradshaw Road and an 8-foot tall property line barrier along Gerber Road, shall be constructed. Sufficient barrier wrap should be provided as shown in Plate NS -2.

NO-3. STC-30 windows shall be installed in the second floor of the first row of houses which are adjacent to Bradshaw Road. In these houses, only second floor windows with a direct view of Bradshaw Road need to be upgraded.

EVALUATION OF WATER TREATMENT FACILITY AND WELL SITES

WATER TREATMENT FACILITY

Noise from activities at the water treatment facility, may result in noise levels which exceed the Sacramento County hourly noise criteria for non-transportation noise sources. The most significant noise sources at the water treatment plant will be the booster pumps, electric motors, and the emergency generator.

As a means of determining the likely noise impacts associated with the booster pumps and motors, Bollard and Brennan, Inc. conducted noise level measurements of a similar pump assembly at the SSWD Northrop Darnejo #68 Pump Station in Sacramento on March 4, 2003. The pump and motor assembly included a 150-horse power Newton electric motor and Johnson pump.

Instrumentation used for collecting overall A-weighted sound levels and linear frequency data included a Larson Davis (LD) Model 824 precision integrating sound level meter and real time analyzer which is capable of narrow-band and 1/3 octave band frequency analysis. The equipment meets ANSI standards for precision sound level meters and narrow band filters. The equipment was calibrated in the field before use with an LDL CA200 acoustical calibrator. Table 9-20 and Table 9-21 show the results of the noise level measurements.

Table 9-20
Pump and Motor Overall A-Weighted Noise Level Measurement Results
March 4, 2003

Site	Distance	Measured Sound Level, dBA		Comments
		L_{50}	L_{max}	
A	2 feet	84.6	85.1	Pump motor is primary noise source
B	20 feet	70.8	73.1	Pump motor is primary noise source

Table 9-21
Pump and Motor Octave Band Noise Level Measurement Results
March 4, 2003

Site	Distance	Linear Sound Level for each Octave Band Center Frequency (Hz)								
		31.5	63	125	250	500	1k	2k	4k	8k
A	2 feet	68.0	75.5	82.4	78.0	81.5	80.4	77.0	73.9	72.7
B	20 feet	56.5	61.1	65.4	62.7	65.6	67.0	63.2	60.9	59.8

Residential uses are located to the north and east of the proposed water treatment facility. The nearest residential property line is located approximately 150 feet from the booster pumps. Based upon the noise level measurement data contained within Table 9-20, the predicted noise level at the backyard of the nearest residence is 53 dB L_{50}. This level exceeds the Sacramento County hourly noise criteria of 50 dB L_{50} for daytime noise and the 45 dB L_{50} criteria for nighttime noise. Since the booster pumps are expected to operate during the nighttime hours, it is recommended that noise control measures, which will reduce overall pump noise levels by a minimum of 8 dBA, be included in the project design. According to the project design, the treatment facility will be bordered by 7-foot masonry sound walls on the north and east sides. Bollard and Brennan, Inc. evaluated the effectiveness of these property line barriers in reducing noise levels associated with the booster pumps and electric motors. The results of this analysis are shown in Table 9-22. Barrier locations are shown in Plate NS -2.

Table 9-22
Predicted Water Treatment Facility Noise Levels
with Varying Property Line Barrier Heights
(Vineyard Point Subdivision)

Source	Location	Barrier Height	Noise Reduction, dB	Predicted L_{50}, dB
Water Treatment Plant	Property Line	6’	-5.2	47.8
		7’	**-6.1**	**46.9**
		8’	-7.2	45.8
		9’	-8.3	44.7

The data in Table 9-22 indicate that a 7-foot property line barrier would reduce booster pump noise by 6.1 dB to an overall level of 46.9 dB L_{50}. This level still exceeds the Sacramento County nighttime noise criteria of 45 dB L_{50}. The use of a 7-foot tall property line barrier would not be sufficient to reduce nighttime noise levels to within the Sacramento County hourly noise criteria.

The project engineers for the treatment facility (Luhdorff and Scalmanini) have stated the desire of enclosing the pump assemblies within a concrete building in order to provide noise reduction, improved aesthetics, and security. Such a building could provide a significant reduction in overall pump noise levels. However, ventilation

requirements may be needed for the equipment, therefore, openings for air flow will be required, which may compromise noise control.

A typical concrete building would provide a 20 dB minimum noise reduction. To ensure adequate air flow for the electrical equipment, all openings in the concrete building must be fitted with acoustical louvers or silencers similar to Vibron Brand Low Frequency Rectangular Silencers Model VRS-SV. The silencers should be applied to the supply and return air sides. The silencers or louvers should provide a minimum insertion loss of 10 – 15 dB at the 125 Hz through 1000 Hz frequency ranges.

Companies that provide silencers can provide assistance in determining proper air flow and pressure drop requirements are met.

Doors on the enclosure should have weather stripping to reduce flanking sound.

This type of structure, along with the proposed 7-foot tall property line barriers would be sufficient to reduce booster pump noise levels to within the Sacramento County nighttime noise criteria of 45 dB L_{dn}.

Emergency Generator Exhaust

The treatment facility will also include a backup diesel generator that could exceed the Sacramento County noise level standards. Table 9-23 provides manufacturers noise level data for an un-muffled exhaust stack for a single generator.

Table 9-23
Noise Level Data
Caterpillar 1000 ekW Standby Generator Exhaust Stack

Component	Overall Noise Level	Octave Band Center Frequency, Hz							
		63	125	250	500	1000	2000	4000	8000
Exhaust Stack	102 dB	94 dB	110 dB	105 dB	96 dB	94 dB	95 dB	95 dB	92 dB

The nearest residential property line to the exhaust stacks would be approximately 150 feet away. The predicted un-muffled exhaust noise level with the generator in operation is predicted to be 85 dBA at the backyard of the nearest residence. Assuming that the generator operates continually for one half of an hour while being exercised, the hourly L_{50} (sound level not to be exceeded 30 minutes of the hour) is 82 dBA. This level would exceed the daytime and nighttime noise level criteria of 50 dBA L_{50} and 45 dBA L_{50}, respectively.

Mufflers such as a Vibron-brand residential muffler, which is generally used in residential areas or hospitals will provide an overall noise level reduction of up to 47 dBA. Therefore, use of mufflers on the exhaust stacks would result in noise levels at the nearest residences of less than 45 dB L_{50}. The use of mufflers would reduce noise

levels within compliance with the Sacramento County daytime and nighttime exterior noise level criteria of 50 dBA L_{50} and 45 dBA L_{50}, respectively.

It is recommended that all routine exercising of the emergency generator is done during the weekday daytime hours. All doors to the generator enclosure should be in the closed position during the testing.

Use of this type of muffler and these operating procedures would result in a less than significant noise impact.

REMOTE WELL SITES

The project designers have proposed the use of vertical turbine pumps for use at the two remote well sites. The pumps are to be housed within concrete masonry buildings and surrounded by solid masonry walls at the adjacent residential property lines. The noise emissions of these pumps are expected to be similar to those shown in Table 9-23~~Table XX~~. Assuming that the pumps will be located in the middle of each of the sites, the nearest residential property lines would be approximately 40 feet from the backyard of the nearest residence. This level exceeds the Sacramento County hourly noise criteria of 50 dB L50 for daytime noise and the 45 dB L50 criteria for nighttime noise. Since the pump and motor assembly are expected to operate during the nighttime hours, it is recommended that the noise control measures, which will reduce overall pump noise levels by a minimum of 17 dBA, be included in the project design. According to the project designer, the remote well sites will be bordered by 7-foot masonry sound walls on the sides adjacent to residential properties. Bollard and Brennan, Inc. evaluated the effectiveness of this property line barrier in reducing noise levels associated with the booster pumps and electric motors. The results of this analysis are shown in Table 9-24.

Table 9-24
Predicted Water Treatment Facility Noise Levels
with Varying Property Line Barrier Heights
(Vineyard Point Subdivision)

Source	Location	Barrier Height	Noise Reduction, dB	Predicted L_{50}, dB
Remote Well Sites	Property Line	6’	-5.6	56.4
		7’	**-7.2**	**54.8**
		8’	-9.0	53.1
		9’	-10.4	51.6

The data in Table 9-24 indicate that a 7-foot property line barrier would reduce well pump noise by 7.2 dB to an overall level of 54.8 dB L_{50}. The use of a 7-foot tall property line barrier would not be sufficient to reduce nighttime noise levels to within the Sacramento County noise criteria of 45 dB L_{50}.

The project engineers have stated the desire of enclosing the remote well pump within a concrete building in order to provide noise reduction, improved aesthetics, and security. Such a building could provide a significant reduction in overall pump noise levels. However, ventilation requirements may be needed for the equipment, therefore, openings for air flow will be required, which may compromise noise control.

A typical concrete building would provide a 20 dB minimum noise reduction. To ensure adequate air flow for the electrical equipment, all openings in the concrete building must be fitted with acoustical louvers or silencers similar to Vibron Brand Low Frequency Rectangular Silencers Model VRS-SV. The silencers should be applied to the supply and return air sides. The silencers/louvers should provide a minimum insertion loss of 10-15 dB at the 125 Hz through 1000 Hz frequency ranges.

Companies that provide silencers can provide assistance in determining proper air flow and pressure drop requirements are met.

Doors on the enclosure should have weather stripping to reduce flanking sound.

This type of structure, along with the proposed 7-foot tall property line barriers would be sufficient to reduce remote well pump noise levels to within the Sacramento County Noise Criteria.

IMPACTS

Based upon the noise level measurement data contained within Table 9-20, the predicted noise level at the backyard of the nearest residence to the water treatment facility is 53 dB $L_{50.}$ This level exceeds the Sacramento County hourly noise criteria of 50 dB L_{50} for daytime noise and the 45 dB L_{50} criteria for nighttime noise. Since the booster pumps are expected to operate during the nighttime hours, it is recommended that noise control measures, which will reduce overall pump noise levels by a minimum of 8 dBA, be included in the project design.

The predicted un-muffled exhaust noise level with the emergency generator in operation is predicted to be 85 dBA at the backyard of the nearest residence. Assuming that the generator operates continually for one half of an hour while being exercised, the hourly L_{50} (sound level not to be exceeded 30 minutes of the hour) is 82 dBA. This level would exceed the daytime and nighttime noise level criteria of 50 dBA L_{50} and 45 dBA L_{50}, respectively.

The following mitigation measures will ensure that noise impacts associated with the project are less-than-significant.

MITIGATION MEASURES

NO-4. The water treatment facility should have 7-foot tall property line barriers at the adjacent residential property lines. In addition to the solid barriers, the pumps should be housed in concrete buildings with acoustical louvers/silencers and

weather stripping around the doors. The louvers/silencers must provide a minimum insertion loss of 10-15 dB at the 125 Hz through 1000 Hz frequency ranges.

NO-5. A muffler such as a Vibron brand residential muffler should be fitted on the exhaust stack at the water treatment facility in order to provide adequate noise reduction to meet the Sacramento County noise standards.

NO-6. Remote well (Pump) sites should have 7-foot tall property line barriers at the adjacent residential property lines. In addition to the solid barriers, the pumps should be housed in concrete buildings with acoustical louvers/silencers and weather stripping around the doors. The louvers/silencers must provide a minimum insertion loss of 10-15 dB at the 125 Hz through 1000 Hz frequency ranges.

10 BIOLOGICAL RESOURCES

INTRODUCTION

The prior FEIR indicated that the Plan Area contained a variety of biological resources including wetlands, vernal pools, and a variety of plant and animal species. This section looks in more detail at the current proposal including the Vineyard Creek and Vineyard Point subdivisions, the NVSSP Drainage Master Plan, and the NVSSP Water Treatment Facility.

REGULATORY SETTING

GENERAL PLAN (GP) CONSERVATION ELEMENT

Given that the project area contains tree resources, riparian resources, and wetlands, the following *Sacramento County General Plan* policies apply to the proposed projects.

The Conservation Element contains several policies designed to foster the protection of native and landmark trees, riparian vegetation, and wetlands.

CO-130 Make every effort to protect and preserve non-oak native, excluding cottonwoods, and landmark trees and protect and preserve native oak trees measuring 6 inches in diameter at 4.5 feet above the ground in urban and rural areas, excluding parcels zoned exclusively for agriculture.

CO-131 Native trees other than oaks, which cannot be protected, shall be replaced with in-kind species in accordance with established tree planting specifications, the combined diameter of which shall equal the combined diameter of the trees removed. In addition, with respect to oaks, a provision for a comparable on-site area for the propagation of oak trees may substitute for replacement of tree planting requirements at the discretion of the County Tree Coordinator when removal of a mature oak tree is necessary in accordance with consistent policy.

CO-132 If the project site is not capable of supporting all the required replacement trees, a sum equivalent to the replacement cost of the number of trees that cannot be accommodated shall be paid to the County's Tree Preservation Fund. The replacement cost of trees shall be established in accordance with the Council of Tree and Landscape Appraiser's standards for appraising trees.

CO-134 Mitigate for loss of trees for road expansion and development consistent with County Tree Ordinance and General Plan policies.

CO-62. Ensure no net loss of marsh and riparian woodland acreage, values or functions.

CO-96. Prior to adoption of the mitigation banking ordinance, utilize on a county-wide basis, the adopted interim wetland mitigation/compensation policy: All wetland acreage proposed to be disturbed by any project over which the Board of Supervisors has discretionary approval shall be mitigated/compensated for by either one or a combination of the following methods:

1. Preserve or create wetlands sufficient to result in no net loss of wetland acreage, and protect their required watersheds as is necessary for the continued function of wetlands on the project site. The appropriate hearing body shall determine that project design, configuration, and wetland management plan, provide reasonable assurances that the wetlands will be protected and their long-term ecological health maintained.

2. Where a Section 404 Permit has been issued by the Corps of Engineers, or an application has been made to obtain a Section 404 Permit, the Mitigation and Management Plan required by that permit or proposed to satisfy the requirements of the Corps for granting a permit may be submitted for purposes of satisfying paragraph 1, provided a no net loss of wetlands is achieved and, provided, further, that such mitigation and management plan shall be subject to the independent, discretionary approval of the Board of Supervisors.

3. Pay to the County of Sacramento an amount based on a rate of $35,000 per acre for the unmitigated/uncompensated wetlands, which shall constitute mitigation for purposes of implementing adopted no net loss policies and CEQA required mitigation. The payment shall be collected by the Department of Planning and Community Development at the time of Improvement Pplan or Building Permit approval, whichever occurs earlier, and deposited into the Wetlands Restoration Trust Fund.

WATERS OF THE UNITED STATES

The U.S. Army Corps of Engineers (Corps) has jurisdiction and permitting authority under Section 404 of the Clean Water Act (CWA) over the discharge of dredged or fill material into waters of the United States, including wetlands. The Corps determines the

significance of and approves, restricts, or prohibits discharges through application of the Section 404(b)(1) guidelines, the substantive criteria for dredged and fill material discharges under the CWA. These guidelines have been developed by the U.S. EPA in conjunction with the Corps. The guidelines are based on the precept that dredged or fill material should not be discharged into the aquatic ecosystem, unless it can be demonstrated that such a discharge will not have an unacceptable adverse impact either individually or in combination with known and/or probable impacts of other activities affecting the ecosystems of concern. Under the Fish and Wildlife Coordination Act, the USFWS advises the Corps on projects involving dredge and fill activities in waters and wetlands of the United States.

SENSITIVE SPECIES

The United States Congress passed the Federal Eendangered Species Act (FESA) in 1973 to protect those species that are endangered or threatened with extinction. In 1984, the State of California enacted a similar law, the California Endangered Species Act (CESA), to protect species identified and listed by the California Fish and Game Commission as endangered or threatened with extinction.

The state and federal Endangered Species Acts are intended to operate in conjunction with CEQA and the National Environmental Policy Act (NEPA) to help protect ecosystems that endangered and threatened species depend upon. The United States Fish and Wildlife Service (USFWS) is responsible for implementation of the FESA while the California Department of Fish and Game (CDFG) implements the CESA.

Accidental or intentional killing of a threatened or endangered species is labeled “take.” “Take” is defined by the FESA as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect” any threatened or endangered wildlife species. Take may include significant habitat modification or degradation and is applied to threatened or endangered plant species as well.

Incidental take to an otherwise lawful activity may be authorized by one of two procedures. If a federal agency is involved with the permitting, funding, or carrying out of the project, then initiation of formal consultation between that agency and USFWS pursuant to Section 7 of the FESA is required if a proposed project may affect a federally listed species. Such consultation would result in a biological opinion that addresses the anticipated effects of the project to listed species and may authorize a limited level of incidental take. If a federal agency is not involved with the project, and federally listed species may be taken as part of the project, then an incidental take permit pursuant to Section 10(a) of the FESA must be obtained. The USFWS may issue such a permit upon completion of a satisfactory conservation plan for any listed species that would be affected by the project.

Under CEQA, species officially proposed for listing (federal classification), candidate species (federal and state classification), species of special concern (State of California classification), and species of concern (federal classification) are fully protected. Plants

identified as “1B” by the California Native Plant Society are also afforded protection pursuant to CEQA.

Raptors (birds of prey) and migratory birds are protected by both federal and state law. The federal Migratory Bird Treaty Act (MBTA) prohibits the killing, possessing, or trading of any migratory birds (including raptors) except in accordance with regulations prescribed by the Secretary of Interior. Raptors are also protected by the Fish and Game Code of California.

Collectively, the sensitive species outlined above are referred to as *special status species.*

The USFWS requires the following notification to be provided in the environmental document for any project which has the potential to adversely affect threatened or endangered species:

> The applicant is hereby notified of additional conditions as stipulated by the U.S. Fish and Wildlife Service. Features of the applicant’s project may adversely affect federally listed threatened or endangered species. An applicant must go through one of two processes to obtain authorization to take federally listed species incidental to completing his or her project. One of the processes is formal consultation. When the authorization or funding of a Federal agency is an aspect of a project that may affect federally listed species, section 7 of the Endangered Species Act requires the Federal agency to formally consult with the Service. Formal consultation is concluded when the Service issues a biological opinion to the Federal agency. The biological opinion includes terms and conditions to minimize the effect of take on listed species. The Federal agency must make the terms and conditions of the biological opinion into binding conditions of its own authorization to the project applicant. An example of this process is when the U.S. Army Corps of Engineers consults with the Service prior to issuing a permit to fill jurisdictional waters under Section 404 of the Clean Water Act. The terms and conditions of the biological opinion become binding on the project applicant through the Corps’ 404 authorization. When no Federal funding or authorization is involved in a project, an applicant must prepare a habitat conservation plan and obtain a permit directly from the Service in accordance with section 10(a)(1)(B) of the Act. For additional information on these processes please contact the Endangered Species Division of the U.S. Fish and Wildlife Service’s Sacramento Fish and Wildlife Office at (916) 979-2725.

VINEYARD POINT

ENVIRONMENTAL SETTING

The site is comprised of leveled and gently rolling terrain, and is situated at an elevation of approximately 60 feet above mean sea level. According to the *Soil Survey of Sacramento County, California* (U.S. Department of Agriculture, Natural Resource Conservation Service 1993), several soil units, or types, have been mapped for the site These are: (157) Hedge loam, 0-2 percent slopes, (191) Redd Bluff loam, 0-2 percent slopes, (197) Redding loam, 2-8 percent slopes, (198) Redding gravelly loam, 0-8 percent slopes, (213) San Joaquin silt loam, leveled, 0-1 percent slopes, (214) San Joaquin silt loam, 0-3 percent slopes, (215) San Joaquin silt loam, 3-8 percent slopes, (216) San Joaquin-Durixeralfs complex, 0-1 percent slopes, (218_ San Joaquin-Galt complex, 0-3 percent slopes, and (221) San Joaquin-Xerarents complex, leveled, 0-1 percent slopes.

The primary vegetation community present on-site is annual grassland. Within the annual greassland are ephemeral features including vernal pools, wetland swales, and intermittent drainages. ~~An unnamed~~Gerber Creek, a tributary to Elder Creek meanders through the southwestern corner of the subject property. The western portion of the site has been historically leveled and farmed. These leveled areas have been farmed in the past with various row crops and rice. The historic rice fields were ~~.~~located in the northwestern corner of the property but have since been leveled and no evidence of rice farming remains. The eastern half of the site has been historically farmed with dry cereal crops such as oats but was not leveled. Through the entire property, active farming and tilling has not occurred for over five years, and the annual grassland community persists.

The annual grassland community is comprised primarily of non-native naturalized Mediterranean grasses. These include ripgut brome (*Bromus diandrus*), soft brome (*Bromus hordeaceus*), wild oats (*Avena fatua*), ryegrass (*Lolium multiflorum*), Mediterranean barley (*Hordeum marinum*), and medusahead grass (*Taeniatherum caput-medusae*). Other non-native herbaceous species in this community include hairy hawk-bit (*Leontodon taraxacoides*), filaree (*Erodium botrys*), pinapple weed (*Chamomilla suaveolens*), and yellow-star thistle (*Centaurea solstitialis*). Several blue gum (*Eucalyptus globules*), Fremont cottonwood (*Populus fremontii*), locust ~~tree~~ (*Robinia pseudoacacia*),~~m~~ and other non-native ornamental trees are scattered throughout the site, particularly at the southern boundary, where homes were once located.

WATERS OF THE U.S.

A wetland delineation was conducted in accordance with the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987). The entire site was walked to determine the extent of potential waters of the U.S. within the project site. Potentially jurisdictional waters of the U.S. mapped include wetlands (8.50 acres) and

other waters (0.52 acres). Wetlands consist of vernal pools (8.41 acres) and seasonal wetland swale (0.09 acres). Other waters include the intermittent creek (0.52 acres).

WETLANDS

Vernal pools are scattered through the site. Vernal pools are topographic basins within the grassland community and typically are underlain with an impermeable or semi-permeable hardpan or duripan layer. Vernal pools are inundated up to one foot through the wet season and are dry by late spring through the following wet season.

A total of 8.41 acres of vernal pools have been mapped within the site. The plant species composition within vernal pools is predominantly native annual species that include slender popcorn flower (*Plagiobothrys stipitatus*), bractless hedge hyssop (*Gratiola ebracteata*), annual hairgrass (*Deswchampsia danthonioides*), dwarf wooly heads (*Psilocarphus brevissimuys*), and Fremont's goldfields (*Lasthenia fremontii*).

Seasonal wetland swales are ephemerally wet linear features. The vegetative composition of the seasonal wetlands on-site is primarily comprised ~~on~~ of non-native wetland generalist plants. These include ryegrass, Mediterranean barley, hyssop loosestrife (*Lythrum hyssopifolium*), and curly dock (*Rumex crispus*).

OTHER WATERS

~~The unnamed tributary to Elder Creek~~Gerber Creek, which flows in a westerly direction towards Elder Creek, has been mapped as an intermittent creek, according to the "Elk Grove, California" 7.5-minute quadrangle. However, this Elder Creek and its tributaries may be perennial during high water years or as irrigation runoff increases from upstream sources. In general the intermittent creek exhibits bed-and-bank characteristics and is largely unvegetated due to the depth and scouring effects of flowing water. However, some hydrophytic vegetation may be present along the upper edges, and in areas where sediment accumulations provide a substrate suitable for plant establishment and growth.

SPECIAL STATUS SPECIES

Based upon vegetation communities present on the property, species' known distributive data, and the references cited above, a list of potentially occurring special status species has been developed for the Vineyard Point property. This list is presented in Plate BR -1. Species include: six plant species, two invertebrates, one amphibian, two reptiles, fifteen birds, and seven mammals.

PLANTS

Special status plants that may occur on-site include those that are associated with vernal pools and marshes. The vernal pool species include dwarf downingia (*Downingia pusilla*, CNPS list 2), Boggs Lake hedge-hyssop (*Gratiola heterosepala*,

California-endangered and CNPS List 1B), Ahart's dwarf rush (*Juncus leiospermus* var. ahartii, federal species of concern and CNPS list 1B), Green's legenere (*Legenere limosa*, federal species of concern and CNPS List 1B), slender Orcutt grass (*Orcuttia tenuis*, California endangered, federal threatened, and CNPS List 1B) and Sacramento Orcutt grass (*Orcuttia viscida*, California endangered, federal endangered, and CNPS List 1B), and the marsh species includes Sanford's arrowhead (*Sagittaria sanfordii*, federal species of concern and CNPS List 1B). Of these, Boggs Lake hedge-hyssop, slender Orcutt grass, and Sacramento Orcutt grass are listed and protected pursuant to the state and/or federal Endangered Species Acts. Dwarf downingia, Green's legenere, Ahart's dwarf rush, and Sanford's arrowhead are not listed and protected pursuant to either state or federal Acts.

ECORP Consulting, Inc. conducted a rare plant survey for the proposed Vineyard Point project site. These surveys were conducted during the optimum blooming period for each of the potentially occurring special-status species. ECORP biologist Jinnah Hansen conducted surveys on May 28 and May 29, 2003. The survey was conducted by walking transects through the appropriate wetland features depicted on the wetland delineation map. Plant species found during the survey were identified using *The Jepson Manual, Higher Plants of California* (Hickman, 1993). No special-status species were observed on-site during the surveys.

INVERTEBRATES

The vernal pool basins on-site can provide habitat for the federally listed vernal pool fairy shrimp (*Branchinecta lynchi*, federal threatened) and vernal pool tadpole shrimp (*Lepidurus packardi*, federal endangered), and as such, are often considered by the U.S. Fish and Wildlife Service (USFWS) to represent potentially occupied habitat.

FISH

There are no immediate fish issues within ~~the unnamed tributary to Elder~~Gerber Creek. However, impacts to ~~the Creek and its tributaries~~Gerber Creek may affect down stream conditions for federally listed fish species such as Sacramento Splittail and Central Valley Evolutionarily Significant Units (ESU) anadromous salmonids, such as Central Valley steelhead, Fall-run Chinook salmon, and spring-run salmon.

AMPHIBIANS

The vernal pools and adjacent grasslands on-site represent potentially suitable habitat for the western spadefoot toad (*Spea hammondi*, CDFG species of special concern and federal species of concern). No other special-status amphibians have the potential to occur on-site.

REPTILES

Two special-status reptiles may occur on-site, the giant garter snake (*Thamnophis gigas*, California and federally threatened) and northwestern pond turtle (*Clemmys marmorata marmorata*, CDFG species of special concern and California Code of Regulation Title 14 fully protected species). Giant garter snakes typically occupy perennial ponds, marshes, slow-moving streams, and agricultural ditches containing adequate water supply during the spring and summer months. Northwestern pond turtles typically occur within perennial streams, creeks, ponds and marshes. This reach of Gerber Creek within the subject property represents potentially suitable giant garter snake and northwestern pond turtle habitat.

BIRDS

The potentially occurring special status birds on-site include nesting raptors, nesting songbirds, and wintering or migrant birds. The nesting raptors include both tree nesting and ground nesting species.

The potential for raptors nesting in trees is unlikely due to the limited number of available trees. The potential nesting trees are limited to several Fremont cottonwood (*Populus fremontii*) and other ornamental trees around the existing buildings, barns, and corrals. However, several raptor species have been observed nesting within close proximity of human habitation. These tree nesting species are white-tailed kite (*Elanus leucurus*, Fish and Game Code fully protected and USFWS bird of management concern), Cooper's hawk (*Accipiter cooperii*, CDFG species of special concern), and Swainson's hawk (*Buteo swainsoni*, California threatened).

Potentially occurring ground nesting birds on-site include northern harrier (*Circus cyaneus*, CDFG species of special concern) and burrowing owl (*Athene cunicularia*, CDFG species of special concern and federal species of concern).

Special status songbirds that may occur within the project site include loggerhead shrike (*Lanius ludovicianus*, CDFG species of special concern and USFWS bird of management concern) and tricolored blackbird (*Agelaius tricolor*, CDFG species of special concern and USFWS bird of management concern).

Other special status birds that may occur on-site are not known to nest in this region and/or suitable nesting habitat is not present on-site. However, grassland and pastures on the project site represent potential foraging habitat for these remaining species. These are: sharp-shinned hawk (*Accipiter striatus*, CDFG species of special concern), ferruginous hawk (*Buteo regalis*, CDFG species of special concern and USFWS Bird of Management Concern), golden eagle (*Aquila chrysaetos*, Fish and Game Code §3511 fully protected species and CDFG species of special concern), Merlin (*Falco columbarius*, CDFG species of special concern), prairie falcon (*F. mexicanus*, CDFG species of special concern), mountain plover (*Charadrius montanus*, federally proposed threatened and USFWS Bird of Management Concern), long-billed curlew (*Nemenius*

americanus, CDFG species of s~~S~~pecial concern and USFWS Bird of Management Concern), and short-eared owl (*Asio flammeus*, CDFG species of special concern).

MAMMALS

~~Elder~~ Gerber Creek and the irrigated pastures on-site may provide foraging habitat for a variety of special-status bats that are known to occur in this region. These are: small-footed myotis (*Myotis ciliolabrum*), long-eared myotis (*M. evotis*), fringed myotis (*M. thysanodes*), long-legged myotis (*M. volans*), Yuma myotis (*M. yumanensis*), Townsend's big-eared bat (*Corynorhinus townsendii*), and pallid bat (*Antrozous pallidus*). Typical roosting and breeding sites for these species are not present within the project site but include appropriate cliffs, buildings, caves, mines and bridges. None of these species are listed and protected pursuant to the California or federal Endangered Species Act; they are considered CDFG species of special concern, Forest Service sensitive species, and/or Bureau of Land Management sensitive species.

IMPACTS AND ANALYSIS (VINEYARD POINT)

Impact: Impacts to wetlands.

The proposed project will impact 9.02 acres of waters of the United States. The proposed mitigation will ensure that this impact is less-than-significant.

MITIGATION MEASURES:

BR-1. To compensate for the loss of wetlands and waters of the U.S., one of the following measures shall be implemented:

1. Preserve or create wetlands sufficient to result in no net loss of wetland acreage, and protect their required watersheds as is necessary for the continued function of wetlands on the project site. The appropriate hearing body shall determine that project design, configuration, and wetland management plan, provides reasonable assurances that the wetlands will be protected and their long-term ecological health maintained.

2. Where a Section 404 Permit has been issued by the Corps of Engineers, or an application has been made to obtain a Section 404 Permit, the Mitigation and Management Plan required by that permit or proposed to satisfy the requirements of the Corps for granting a permit may be submitted for purposes of satisfying paragraph 1, provided a no net loss of wetlands is achieved. ~~and, provided, further, that such mitigation and management plan shall be subject to the independent, discretionary approval of the Board of Supervisors.~~

3. Pay to the County of Sacramento an amount based on a rate of $35,000 per acre for the unmitigated/uncompensated wetlands, which shall constitute mitigation for purposes of implementing adopted no net loss policies and

CEQA required mitigation. The payment shall be collected by the Department of Planning and Community Development at the time of Improvement Plan or Building Permit approval, whichever occurs earlier, and deposited into the Wetlands Restoration Trust Fund.

Impact: Effects on Vernal Pool Species.

Construction of the proposed project will remove 8.41 acres of vernal pools, habitat for the vernal pool fairy shrimp, vernal pool tadpole shrimp, and spadefoot toad. Removal of this habitat represents a significant impact.

MITIGATION MEASURES**:**

BR-2. The applicant shall compensate for impacts to vernal pool species through consultation with the U.S. Fish and Wildlife Service as outlined in Section 7 of the Endangered Species Act. The applicant shall implement all measures included in the Biological Opinion issued as a result of this consultation.

Impact: Effects on birds of prey.

Project construction has the potential to disturb nesting activities of listed birds of prey. In addition, the proposed project will remove ~~179~~ 181.8 acres of Swainson's Hawk foraging habitat upon completion. Impacts to Swainson's Hawk and other raptor are considered significant.

MITIGATION MEASURES**:**

BR-3. If construction is proposed during the raptor breeding season (February – August), a focused survey for migratory bird nests shall be conducted within 30 days prior to the beginning of construction activities by a qualified biologist in order to identify active nests on the site. If active nests are found, no construction activities shall take place within 500 feet of the nest until the young have fledged. Trees containing nests that must be removed as a result of project implementation shall be removed during the non-breeding season (September – January). If no active nests are found during the focused survey, no further mitigation will be required.

BR-4. To mitigate for the loss of ~~179~~ 181.8 acres of Swainson's hawk foraging habitat, prior to the approval of Improvement Plans or building permits, or recordation of Final Subdivision Map, whichever occurs first, the applicant shall perform one of the following:

~~BR-5.~~1. The project proponent shall preserve ~~89.5~~90.9 acres (0.50 acre for each acre lost) of similar habitat within a 10-mile radius of the project site. This land shall be protected through fee title or conservation easement (acceptable to the California Department of Fish and Game).

~~1.~~2. The project proponent shall, to the satisfaction of the California Department of Fish and Game, prepare and implement a Swainson's hawk mitigation plan that will include preservation of Swainson's hawk foraging habitat.

~~2.~~3. The project proponent shall submit payment of a Swainson's hawk impact mitigation fee per acre impacted to the Department of Planning and Community Development in the amount as set forth in Chapter 16.130 of the Sacramento County Code as such may be amended from time to time and to the extent that said Chapter remains in effect.

~~3.~~4. Should the County Board of Supervisors adopt a Swainson's hawk mitigation policy/program (which may include a mitigation fee) prior to the implementation of one of the measures above, the project proponent may be subject to that program instead.

Impacts to Giant Garter Snake and Northwestern Pond Turtle

The portion of Gerber Creek located within the project area represents potential habitat for the giant garter snake and the northwestern pond turtle. Construction of creek improvements and construction near ~~the~~ Gerber Creek could impact both GGS and northwestern pond turtle. Impacts to GGS and northwestern pond turtle are potentially significant.

MITIGATION MEASURES**:**

~~BR-6.~~BR-5. The project site shall be surveyed for giant garter snakes and the northwestern pond turtle by a qualified biologist within 24 hours prior to the start of construction activities (including clearing and grubbing) located within 200 feet of ~~Elder~~ Gerber Creek. Survey of the area shall be repeated if a lapse in construction activity of two weeks or greater occurs. If a giant garter snake and/or northwestern pond turtle is encountered during construction, activities shall cease until appropriate corrective measures have been completed or it has been determined that the snake and/or turtle will not be harmed. Giant garter snakes and northwestern pond turtles encountered during construction should be allowed to move away on their own. Capture and relocation of trapped or injured individuals shall only be attempted by personnel or individuals with current USFWS recovery permits. Any incidental take shall be reported to the USFWS at (916) 979-2725 and Department of Environmental Review and Assessment at (916) 874-7914 within one working day. Any giant garter snake and/or northwestern pond turtle sightings shall be reported within 24 hours to the Department of Environmental Review and Assessment at 874-7914.

Plate BR -1
Potentially Occurring Special-Status Species
Vineyard Point Subdivision

Attachment D. Potentially Occurring Special-Status Species

Common Name	Scientific Name	Federal Status	State Status	Other Status	Habitat Description	Approximate Survey Period (J F M A M J J A S O N D)
Plants						
Boggs Lake hedge-hyssop	*Gratiola heterosepala*	-	CE	1B	vernal pools	
Ahart's dwarf rush	*Juncus leiospermus* var. *ahartii*	-	-	FSC, 1B	vernal pools	
Greene's legenere	*Legenere limosa*	-	-	FSC, 1B	vernal pools	
Slender orcutt grass	*Orcuttia tenuis*	FT	CE	1B	vernal pools	
Sacramento orcutt grass	*Orcuttia viscida*	FE	CE	1B	vernal pools	
Sanford's arrowhead	*Sagittaria sanfordii*	-	-	FSC, 1B	marsh, creeks, ditches	
Invertebrates						
Vernal pool fairy shrimp	*Branchinecta lynchi*	FT	-	-	vernal pools/wetlands	
Vernal pool tadpole shrimp	*Lepidurus packardi*	FE	-	-	vernal pools/wetlands	
Amphibians						
Western spadefoot toad	*Spea hammondi*	-	-	CSC, CCR, BLM	vernal pools, wetlands/adjacent grassland	
Reptiles						
Northwestern pond turtle	*Clemmys marmorata marmorata*	-	-	CSC, CCR, FS	creeks, ponds	
Giant garter snake	*Thamnophis gigas*	FT	CT	CCR	ditches, sloughs, marshes	
Birds						
White-tailed kite	*Elanus leucurus*	-	-	CFP, MNB	woodland, grassland	
Northern harrier	*Circus cyaneus*	-	-	CSC	marsh, grassland	
Sharp-shinned hawk	*Accipiter striatus*	-	-	CSC	woodland	
Cooper's hawk	*Accipiter cooperii*	-	-	CSC	woodland	
Swainson's hawk (nesting)	*Buteo swainsoni*	-	CT	-	grassland, riparian	
Ferruginous hawk	*Buteo regalis*	-	-	CSC, MNB	grassland	
Golden eagle	*Aquila chrysaetos*	-	-	CFP, CSC, CDF	grassland	
Merlin	*Falco columbarius*	-	-	CSC	woodland, grassland	
Prairie falcon	*Falco mexicanus*	-	-	CSC	grassland	
Mountain plover (wintering)	*Charadrius montanus*	FPT	-	CSC, MNB	grassland, pasture	
Long-billed curlew (nesting)	*Numenius americanus*	-	-	CSC, MNB	grassland, pasture	
Burrowing owl	*Athene cunicularia*	-	-	CSC, MNB, BLM	grassland	
Short-eared owl	*Asio flammeus*	-	-	CSC, MNB	marsh, grassland	
Loggerhead shrike	*Lanius ludovicianus*	-	-	CSC, MNB	grassland, woodland	
Tricolored blackbird	*Agelaius tricolor*	-	-	CSC, MNB, BLM	marsh, grassland	
Mammals						
Small-footed myotis	*Myotis ciliolabrum*	-	-	BLM	various woodland/shrubland	

2002-053 SSS List

Plate BR-1 (cont.)
Potentially Occurring Special Status Species
Vineyard Point Subdivision

Attachment D. Potentially Occurring Special-Status Species

Common Name	Scientific Name	Federal Status	State Status	Other Status	Habitat Description	Approximate Survey Period J	F	M	A	M	J	J	A	S	O	N	D
Long-eared myotis	*Myotis evotis*	-	-	BLM	deciduous or coniferous												
Fringed myotis	*Myotis thysanodes*	-	-	BLM	deciduous or coniferous												
Long-legged myotis	*Myotis volans*	-	-	CNDDB	deciduous or coniferous												
Yuma myotis	*Myotis yumanensis*	-	-	CSC, BLM	Riparian woodland												
Townsend's big-eared bat	*Corynorhinus townsendii*	-	-	CSC, FS, BLM	mines, man-made structures,												
Pallid bat	*Antrozous pallidus*	-	-	CSC, FS, BLM	mines, man-made structures,												

Status Codes

FE - Federally listed, Endangered.
FT - Federally listed, Threatened.
FPT - Formally Proposed for federal listing as Threatened.
FC - Candidate for federal listing as Threatened or Endangered.
FSC - U. S. Fish and Wildlife Service Species of Concern
MNB - U. S. Fish and Wildlife Service Migratory Nongame Birds of Management Concern
BLM - Bureau of Land Management Sensitive Species
CE - California listed, Endangered.
CT - California listed, Threatened.
CCR - California Code of Regulations Title 14 Fully Protected Species
CFP - Fish and Game Code of California Fully Protected Species (§3511-birds, §4700-mammals, §5050-reptiles/amphibians).
CSC - California Department of Fish and Game Species of Special Concern.
CDF - California Department of Forestry Sensitive Species
1B - California Native Plant Society/Rare or Endangered in California and elsewhere
2 - California Native Plant Society/Rare or Endangered in California, more common elsewhere
4 - California Native Plant Society/Plants of Limited Distribution
CNDDB - Species that is tracked by CDFG's Natural Diversity Database but does not have any of the above special-status designations otherwise.

2002-053 SSS List

VINEYARD CREEK

ENVIRONMENTAL SETTING

The site is comprised of leveled pasture and is situated at an elevation of approximately 50 feet above mean sea level. Rural residences and a horse boarding facility are located at the northern portion of the site. According to the *Soil Survey of Sacramento County, California* (U.S. Department of Agriculture, Natural Resource Conservation Service 1993), two soil units, or types, have been mapped for the site. These are: (213) San Joaquin silt loam, leveled, 0-1 percent slopes and (214) San Joaquin silt loam, 0-3 percent slopes.

The primary vegetation community present on-site is annual grassland. Within the annual grassland are ephemeral features (i.e., vernal pools). Elder Creek meanders through the northern and western portion of the subject property. Gerber Creek is located adjacent to the southeast corner of the property. The site has been historically leveled and farmed. Currently, the pasture north of the railroad easement is being grazed by horses and is no longer actively irrigated. The pasture immediately south of the railroad easement is being grazed by horses and is irrigated. A small pen of cows is located within this pasture. The southernmost pasture currently lies fallow and is not irrigated.

The non-irrigated annual grassland community is comprised primarily of non-native naturalized Mediterranean grasses. These include ripgut brome (*Bromus diandrus*), soft brome (*Bromus hordeaceus*), wild oats (*Avenua fatua*), ryegrass (*Lolium multiflorum*), Mediterranean barley (*Hordeum marinum*), and medusahead grass (*Taeniatherum caput-medusae*). Other non-native herbaceous species in this community include hairy hawk-bit (*Leontodon taraxacoides*), filaree (*Erodium botrys*), pinapple weed (*Chamomilla suaveolens*), and yellow-star thistle (*Centaurea solstitialis*). The irrigated pasture is comprised of a mixture of native and non-native hydrophytic plants. These include Bermuda grass (*Cynondon da*ctylon), curly dock (*Rumex crispus*), spiny-fruit buttercup (*Ranunculus muricatus*), rye grass (*Lolium multiflorum*), Mediterranean barley (*Hordeum marinum*), and slender popcorn flower (*Plagiobothrys stipitatus*). The leveled irrigated pasture was not considered a potential water of the U.S., as it is likely that wetland hydrology, hydrophytic vegetation, and Hydric soils would not persist in the absence of irrigation. Also, because this pasture has been leveled, there are no distinct topographic basins that, in the absence of irrigation, would pond water long enough during the growing season to exhibit wetland characteristics.

WATERS OF THE U.S.

A wetland delineation was conducted in accordance with the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987). The entire site was walked to determine the extent of potential waters of the U.S. within the project site. Potentially jurisdictional waters of the U.S. mapped include wetlands (1.85 acres) and other waters (0.84 acres). Wetlands consist of vernal pools (1.77) and seasonal

wetlands (0.08), and Elder Creek is mapped as the other waters. This acreage includes those areas needed for off-site infrastructure.

WETLANDS

Two relatively large vernal pools have been mapped within the non-irrigated pastures. Vernal pools are topographic basins within the grassland community and typically are underlain with an impermeable or semi-permeable hardpan or duripan layer. Vernal pools are inundated up to one foot through the wet season and are dry by late spring through the following wet season.

A total of 1.77 acres of vernal pools have been mapped within the site. The plant species composition within the vernal pools is predominantly native annual species that include slender popcorn flower (*Plagiobothrys stipitatus*), bractless hedge hyssop (*Gratiola ebracteata*), annual hairgrass (*Deschampsia danthonioides*), dwarf wooly heads (*Psilocarphus brevissimus*), and Fremont's goldfields (*Lasthenia fremontii*).

OTHER WATERS

Elder Creek, which flows in a westerly direction, has been mapped as a seasonal creek according to the "Elk Grove, California" 7.5-minute quadrangle. However, Elder Creek and its tributaries may be perennial during high water years or as irrigation runoff increases from upstream sources. In general, Elder Creek exhibits bed-and-bank characteristics and is largely unvegetated due to its depth and the scouring effects of flowing water. However, some hydrophytic vegetation may be present along the upper edges, and in areas where sediment accumulations provide a substrate suitable for plant establishment and growth. Himalaya blackberry (*Rubus discolor*) thickets can be found along the banks at various reaches of the creek.

SPECIAL STATUS SPECIES

Based upon vegetation communities present on the property, species' known distributive data, and the references cited above, a list of potentially occurring special-status species has been developed for the Vineyard Creek project site. This list is presented in Plate BR -2. Species include: six plant species, two invertebrates, one amphibian, two reptiles, fifteen birds, and seven mammals.

PLANTS

Special status plants that may occur on-site include those that are associated with vernal pools and marshes. The vernal pool species include dwarf downingia (*Downingia pusilla*, CNPS list 2), Boggs Lake hedge-hyssop (*Gratiola heterosepala*, California-endangered and CNPS List 1B), Ahart's dwarf rush (*Juncus leiospermus* var. ahartii, federal species of concern and CNPS list 1B), Green's legenere (*Legenere limosa*, federal species of concern and CNPS List 1B), slender Orcutt grass (*Orcuttia tenuis*, California endangered, federal threatened, and CNPS List 1B) and Sacramento

Orcutt grass (*Orcuttia viscida*, California endangered, federal endangered, and CNPS List 1B), and the marsh species includes Sanford's arrowhead (*Sagittaria sanfordii*, federal species of concern and CNPS List 1B). Of these, Boggs Lake hedge-hyssop, slender Orcutt grass, and Sacramento Orcutt grass are listed and protected pursuant to the state and/or federal Endangered Species Acts. Dwarf downingia, Green's legenere, Ahart's dwarf rush, and Sanford's arrowhead are not listed and protected pursuant to either state or federal Acts.

ECORP Consulting, Inc. conducted a rare plant survey for the proposed Vineyard Point project site. These surveys were conducted during the optimum blooming period for each of the potentially occurring special-status species. ECORP biologist Jinnah Hansen conducted surveys on May 29, 2003. The survey was conducted by walking transects through the appropriate wetland features depicted on the wetland delineation map. Plant species found during the survey were identified using the *Jepson Manual, Higher Plants of California* (Hickman, 1993). No special-status species were observed on-site during the surveys.

INVERTEBRATES

The vernal pool basins on-site can provide habitat for the federally listed vernal pool fairy shrimp (*Branchinecta lynchi*, federal threatened) and vernal pool tadpole shrimp (*Lepidurus packardi*, federal endangered), and as such, are often considered by the U.S. Fish and Wildlife Service (USFWS) to represent potentially occupied habitat.

FISH

There are no immediate fish issues within Elder Creek. However, impacts to the Creek may affect down stream conditions for federally listed fish species such as Sacramento Splittail and Central Valley Evolutionarily Significant Units (ESU) anadromous salmonids, such as Central Valley steelhead, Fall-run Chinook salmon, and spring-run salmon.

AMPHIBIANS

The vernal pools and adjacent grasslands on-site represent potentially suitable habitat for the western spadefoot toad (*Spea hammondi*, CDFG species of special concern and federal species of concern). No other special-status amphibians have the potential to occur on-site.

REPTILES

Two special-status reptiles may occur on-site, the giant garter snake (*Thamnophis gigas*, California and federally threatened) and northwestern pond turtle (*Clemmys marmorata marmorata*, CDFG species of special concern and California Code of Regulation Title 14 fully protected species). Giant garter snakes typically occupy perennial ponds, marshes, slow-moving streams, and agricultural ditches containing

adequate water supply during the spring and summer months. Northwestern pond turtles typically occur within perennial streams, creeks, ponds and marshes. This reach of Elder Creek within the subject property and the reach of Gerber Creek adjacent to the southeast corner of the property, represents potentially suitable giant garter snake and northwestern pond turtle habitat.

BIRDS

The potentially occurring special status birds on-site include nesting raptors, nesting songbirds, and wintering or migrant birds. The nesting raptors include both tree nesting and ground nesting species.

Tree nesting species that may nest on-site are white-tailed kite (*Elanus leucurus*, Fish and Game Code fully protected and USFWS bird of management concern), Cooper's hawk (*Accipiter cooperii*, CDFG species of special concern), and Swainson's hawk (*Buteo swainsoni*, California threatened). A white-tailed kite was foraging within the site but was not observed nesting within the project site during the April 2002 field assessment. The probability for raptors nesting within the trees on-site is considered low due to the tree's close proximity to areas of daily human activity (i.e., home and horse boarding). These trees include Fremont cottonwood (*Populus fremontii*) and a variety of ornamental non-native species.

Potentially occurring ground-nesting birds on-site include northern harrier (*Circus cyaneus*, CDFG species of special concern) and burrowing owl (*Athene cunicularia*, CDFG species of special concern and federal species of concern). Burrowing owls have been reported by the current occupants to have nested within the dry perimeter of the irrigated pasture, but none were observed during the field assessment.

Special status songbirds that may occur within the project site include loggerhead shrike (*Lanius ludovicianus*, CDFG species of special concern and USFWS bird of management concern) and tricolored blackbird (*Agelaius tricolor*, CDFG species of special concern and USFWS bird of management concern). During the April 2002 field assessment, a large tricolored blackbird colony of up to 500 pairs was nesting within the blackberry thicket along Elder Creek. Most of the nesting had been completed or very near completion by the June survey date.

Other special status birds that may occur on-site are not known to nest in this region and/or suitable nesting habitat is not present on-site. However, grassland and pastures on the project site represent potential foraging habitat for these remaining species. These are: sharp-shinned hawk (*Accipiter striatus*, CDFG species of special concern), ferruginous hawk (*Buteo regalis*, CDFG species of special concern and USFWS Bird of Management Concern), golden eagle (*Aquila chrysaetos*, Fish and Game Code §3511 fully protected species and CDFG species of special concern), Merlin (*Falco columbarius*, CDFG species of special concern), prairie falcon (*F. mexicanus*, CDFG species of special concern), mountain plover (*Charadrius montanus*, federally proposed threatened and USFWS Bird of Management Concern), long-billed curlew (*Nemenius*

americanus, CDFG species of Special concern and USFWS Bird of Management Concern), and short-eared owl (*Asio flammeus*, CDFG species of special concern).

MAMMALS

Elder Creek and the irrigated pastures on-site may provide foraging habitat for a variety of special-status bats that are known to occur in this region. These are: small-footed myotis (*Myotis ciliolabrum*), long-eared myotis (*M. evotis*), fringed myotis (*M. thysanodes*), long-legged myotis (*M. volans*), Yuma myotis (*M. yumanensis*), Townsend's big-eared bat (*Corynorhinus townsendii*), and pallid bat (*Antrozous pallidus*). Typical roosting and breeding sites for these species include appropriate cliffs, buildings, caves, mines and bridges. The homes, outbuildings, and horse barns may be potentially used as roost sites, but breeding or nursery use is highly unlikely due to the presence of human disturbances. None of these species are listed and protected pursuant to the California or federal Endangered Species Act; they are considered CDFG species of special concern, Forest Service sensitive species, and/or Bureau of Land Management sensitive species.

IMPACTS AND ANALYSIS (VINEYARD CREEK)

Impact: Impacts to wetlands.

The proposed project will impact 2.69 acres of waters of the United States. The proposed mitigation will ensure that this impact is less-than-significant.

MITIGATION MEASURES**:**

~~BR-7.~~BR-6. To compensate for the loss of wetlands and waters of the U.S., one of the following measures shall be implemented:

1. Preserve or create wetlands sufficient to result in no net loss of wetland acreage, and protect their required watersheds as is necessary for the continued function of wetlands on the project site. The appropriate hearing body shall determine that project design, configuration, and wetland management plan, provides reasonable assurances that the wetlands will be protected and their long-term ecological health maintained.

2. Where a Section 404 Permit has been issued by the Corps of Engineers, or an application has been made to obtain a Section 404 Permit, the Mitigation and Management Plan required by that permit or proposed to satisfy the requirements of the Corps for granting a permit may be submitted for purposes of satisfying paragraph 1, provided a no net loss of wetlands is achieved. ~~and, provided, further, that such mitigation and management plan shall be subject to the independent, discretionary approval of the Board of Supervisors.~~

3. Pay to the County of Sacramento an amount based on a rate of $35,000 per acre for the unmitigated/uncompensated wetlands, which shall constitute mitigation for purposes of implementing adopted no net loss policies and CEQA required mitigation. The payment shall be collected by the Department of Planning and Community Development at the time of Improvement Plan or Building Permit approval, whichever occurs earlier, and deposited into the Wetlands Restoration Trust Fund.

Plate BR -2
Potentially Occurring Special Status Species
Vineyard Creek Subdivision

Attachment D. Potentially Occurring Special-Status Species

Common Name	Scientific Name	Federal Status	State Status	Other Status	Habitat Description	Approximate Survey Period (J F M A M J J A S O N D)
Plants						
Boggs Lake hedge-hyssop	*Gratiola heterosepala*	-	CE	1B	vernal pools	
Ahart's dwarf rush	*Juncus leiospermus* var. *ahartii*	-	-	FSC, 1B	vernal pools	
Greene's legenere	*Legenere limosa*	-	-	FSC, 1B	vernal pools	
Slender orcutt grass	*Orcuttia tenuis*	FT	CE	1B	vernal pools	
Sacramento orcutt grass	*Orcuttia viscida*	FE	CE	1B	vernal pools	
Sanford's arrowhead	*Sagittaria sanfordii*	-	-	FSC, 1B	marsh, creeks, ditches	
Invertebrates						
Vernal pool fairy shrimp	*Branchinecta lynchi*	FT	-	-	vernal pools/wetlands	
Vernal pool tadpole shrimp	*Lepidurus packardi*	FE	-	-	vernal pools/wetlands	
Amphibians						
Western spadefoot toad	*Spea hammondi*	-	-	CSC, CCR, BLM	vernal pools, wetlands/adjacent grassland	
Reptiles						
Northwestern pond turtle	*Clemmys marmorata marmorata*	-	-	CSC, CCR, FS	creeks, ponds	
Giant garter snake	*Thamnophis gigas*	FT	CT	CCR	ditches, sloughs, marshes	
Birds						
White-tailed kite	*Elanus leucurus*	-	-	CFP, MNB	woodland, grassland	
Northern harrier	*Circus cyaneus*	-	-	CSC	marsh, grassland	
Sharp-shinned hawk	*Accipiter striatus*	-	-	CSC	woodland	
Cooper's hawk	*Accipiter cooperii*	-	-	CSC	woodland	
Swainson's hawk (nesting)	*Buteo swainsoni*	-	CT	-	grassland, riparian	
Ferruginous hawk	*Buteo regalis*	-	-	CSC, MNB	grassland	
Golden eagle	*Aquila chrysaetos*	-	-	CFP, CSC, CDF	grassland	
Merlin	*Falco columbarius*	-	-	CSC	woodland, grassland	
Prairie falcon	*Falco mexicanus*	-	-	CSC	grassland	
Mountain plover (wintering)	*Charadrius montanus*	FPT	-	CSC, MNB	grassland, pasture	
Long-billed curlew (nesting)	*Numenius americanus*	-	-	CSC, MNB	grassland, pasture	
Burrowing owl	*Athene cunicularia*	-	-	CSC, MNB, BLM	grassland	
Short-eared owl	*Asio flammeus*	-	-	CSC, MNB	marsh, grassland	
Loggerhead shrike	*Lanius ludovicianus*	-	-	CSC, MNB	grassland, woodland	
Tricolored blackbird	*Agelaius tricolor*	-	-	CSC, MNB, BLM	marsh, grassland	
Mammals						
Small-footed myotis	*Myotis ciliolabrum*	-	-	BLM	various woodland/shrubland	

2002-051 SSS List

Plate BR-2 (cont.)
Potentially Occurring Special Status Species
Vineyard Creek Subdivision

Attachment D. Potentially Occurring Special-Status Species

Common Name	Scientific Name	Federal Status	State Status	Other Status	Habitat Description	Approximate Survey Period J	F	M	A	M	J	J	A	S	O	N	D
Long-eared myotis	*Myotis evotis*	-	-	BLM	deciduous or coniferous												
Fringed myotis	*Myotis thysanodes*	-	-	BLM	deciduous or coniferous												
Long-legged myotis	*Myotis volans*	-	-	CNDDB	deciduous or coniferous												
Yuma myotis	*Myotis yumanensis*	-	-	CSC, BLM	Riparian woodland												
Townsend's big-eared bat	*Corynorhinus townsendii*	-	-	CSC, FS, BLM	mines, man-made structures,												
Pallid bat	*Antrozous pallidus*	-	-	CSC, FS, BLM	mines, man-made structures,												

Status Codes

FE - Federally listed, Endangered.
FT - Federally listed, Threatened.
FPT - Formally Proposed for federal listing as Threatened.
FC - Candidate for federal listing as Threatened or Endangered.
FSC - U. S. Fish and Wildlife Service Species of Concern
MNB - U. S. Fish and Wildlife Service Migratory Nongame Birds of Management Concern
BLM - Bureau of Land Management Sensitive Species
CE - California listed, Endangered.
CT - California listed, Threatened.
CCR - California Code of Regulations Title 14 Fully Protected Species
CFP - Fish and Game Code of California Fully Protected Species (§3511-birds, §4700-mammals, §5050-reptiles/amphibians).
CSC - California Department of Fish and Game Species of Special Concern.
CDF - California Department of Forestry Sensitive Species
1B - California Native Plant Society/Rare or Endangered in California and elsewhere
2 - California Native Plant Society/Rare or Endangered in California, more common elsewhere
4 - California Native Plant Society/Plants of Limited Distribution
CNDDB - Species that is tracked by CDFG's Natural Diversity Database but does not have any of the above special-status designations otherwise.

2002-051 SSS List

Impact: Effects on Vernal Pool Species.

Construction of the proposed project will remove 1.49 acres of vernal pools, habitat for the vernal pool fairy shrimp, vernal pool tadpole shrimp, and spadefoot toad. Removal of this habitat represents a significant impact.

MITIGATION MEASURES**:**

~~BR-8.~~BR-7. The applicant shall compensate for impacts to vernal pool species through consultation with the U.S. Fish and Wildlife Service as outlined in Section 7 of the Endangered Species Act. The applicant shall implement all measures included in the Biological Opinion issued as a result of this consultation.

Impact: Effects on birds of prey.

Project construction has the potential to disturb nesting activities of listed birds of prey. In addition, the proposed project will remove ~~108~~ 104.8 acres of Swainson's Hawk foraging habitat upon completion. Impacts to Swainson's Hawk and other raptors are considered significant.

MITIGATION MEASURES**:**

~~BR-9.~~BR-8. If construction is proposed during the raptor breeding season (February – August), a focused survey for migratory bird nests shall be conducted within 30 days prior to the beginning of construction activities by a qualified biologist in order to identify active nests on the site. If active nests are found, no construction activities shall take place within 500 feet of the nest until the young have fledged. Trees containing nests that must be removed as a result of project implementation shall be removed during the non-breeding season (September – January). If no active nests are found during the focused survey, no further mitigation will be required.

~~BR-10.~~BR-9. To mitigate for the loss of ~~108~~ 104.8 acres of Swainson's hawk foraging habitat, prior to the approval of Improvement Plans or building permits, or recordation of Final Subdivision Map, whichever occurs first, the applicant shall perform one of the following:

1. The project proponent shall preserve ~~56~~ 52.4acres (0.50 acre for each acre lost) of similar habitat within a 10-mile radius of the project site. This land shall be protected through fee title or conservation easement (acceptable to the California Department of Fish and Game).

2. The project proponent shall, to the satisfaction of the California Department of Fish and Game, prepare and implement a Swainson's hawk mitigation plan that will include preservation of Swainson's hawk foraging habitat.

3. The project proponent shall submit payment of a Swainson's hawk impact mitigation fee per acre impacted to the Department of Planning and Community Development in the amount as set forth in Chapter 16.130 of the Sacramento County Code as such may be amended from time to time and to the extent that said Chapter remains in effect.

4. Should the County Board of Supervisors adopt a Swainson's hawk mitigation policy/program (which may include a mitigation fee) prior to the implementation of one of the measures above, the project proponent may be subject to that program instead.

Impacts to Tricolor Blackbird

During the April 2002 field assessment, a large tricolor blackbird colony of up to 500 pairs was nesting within the blackberry thicket along Elder Creek. Construction activities have the potential to disturb nesting activities and remove habitat. Impacts to Tricolor Blackbird are, therefore, potentially significant.

MITIGATION MEASURES**:**

~~BR-11.~~BR-10. Prior to the ~~issuance of a work authorization permit~~approval of grading plans, submit a Tricolored Blackbird Mitigation Plan to the California Department of Fish and Game (CDFG) for review and approval. The plan shall include the following:

1. Preliminary surveys to determine the presence of nesting tricolored blackbirds;

2. Avoidance of active nesting colonies present on the site to the extent possible through establishment of temporary setbacks around the colonies until a qualified biologist verifies that young birds have successfully fledged.

Impacts to Giant Garter Snake and Northwestern Pond Turtle

The portion of Elder Creek located within the project area and the portion of Gerber Creek located adjacent to the southeast corner of the project area, represent~~s~~ potential habitat for the giant garter snake and the northwestern pond turtle. Construction of creek improvements and construction near ~~the~~ Elder Creek and Gerber Creek could impact both GGS and northwestern pond turtle. Impacts to GGS and northwestern pond turtle are potentially significant.

MITIGATION MEASURES**:**

~~BR-12.~~BR-11. The project site shall be surveyed for giant garter snakes and the northwestern pond turtle by a qualified biologist within 24 hours prior to the start of construction activities (including clearing and grubbing) located within 200 feet of Elder and Gerber Creek. Survey of the area shall be repeated if a lapse in

construction activity of two weeks or greater occurs. If a giant garter snake and/or northwestern pond turtle is encountered during construction, activities shall cease until appropriate corrective measures have been completed or it has been determined that the snake and/or turtle will not be harmed. Giant garter snakes and northwestern pond turtles encountered during construction should be allowed to move away on their own. Capture and relocation of trapped or injured individuals shall only be attempted by personnel or individuals with current USFWS recovery permits. Any incidental take shall be reported to the USFWS at (916) 979-2725 and Department of Environmental Review and Assessment at (916) 874-7914 within one working day. Any giant garter snake and/or northwestern pond turtle sightings shall be reported within 24 hours to the Department of Environmental Review and Assessment at 874-7914.

NVSSP Drainage Master Plan

Waters of the U.S.

On behalf of the County of Sacramento, ECORP Consulting, Inc. conducted a wetland delineation of the North Vineyard Station Specific Plan Area (NVSSP) Drainage Master Plan Site located in Sacramento County, California.

A portion of the NVSSP wetland delineation was conducted in accordance with the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987), and several parcels have subsequently been field verified by the Corps. Waters of the U.S. mapped on-site include wetlands and other waters. Wetlands consist of seasonal wetlands, wetland swales, vernal pools, and seasonal marshes. Other waters include Elder Creek and Gerber Creek.

Waters of the U.S. within the Drainage Master Plan field verified by the Corps of Engineers within the Vineyard Creek, Vineyard Point, and Morvai properties total 2.31 acres and are comprised of 0.94 acre of vernal pool, and 1.37 acres of creek.

Waters of the U.S. mapped according to Corps of Engineers protocol but not yet verified include 0.14 acre of vernal pool, 0.84 acre of seasonal wetland, 0.03 acre of wetland swale, and 7.21 acres of creek. Waters of the U.S. mapped via aerial photograph interpretation in the absence of ground-truthing include 0.03 acre of seasonal wetland, 4.90 acres of creek, and 0.84 acre of stock pond.

Wetlands

Vernal pools have been mapped throughout the unleveled and non-irrigated grasslands. Vernal pools are topographic basins within the grassland community and typically are underlain with an impermeable or semi-permeable hardpan or duripan layer. Vernal pools are inundated up to one foot through the wet season and are dry by late spring

through the following wet season. The plant species composition within vernal pools is predominantly native annual species that include slender popcorn flower (*Plagiobothrys stipitatus*), bractless hedge hyssop (*Gratiola ebracteata*), annual hair grass (*Deschampsia danthonioides*), dwarf wooly heads (*Psilocarphus brevissimus*), and Fremont's goldfields (*Lasthenia fremontii*).

The seasonal wetlands and wetland swales on-site are ephemerally wet features where runoff accumulates from adjacent upland areas into topographic basins or swales, which is further directed into larger creeks and streams. The vegetative composition of the seasonal wetlands and wetland swales on-site is primarily comprised on non-native wetland generalist plants with scattered native annual species. These include ryegrass, Mediterranean barley, annual hairgrass (*Deschampsia danthonioides*), hyssop loosestrife (*Lythrum hyssopifolium*), and little quaking grass (*Briza minor*). Seasonal wetlands have been mapped within the unleveled and non-irrigated pastures but have also been found within the previously farmed areas that have been left fallow and not irrigated.

Other Waters

Elder Creek and Gerber Creek, which flow in a westerly direction, have been mapped as seasonal creeks according to the "Elk Grove, California" 7.5-minute quadrangle. However, they may be perennial during high water years or as irrigation runoff increases from upstream sources. In general, both creeks exhibit bed-and-bank characteristics and ~~is~~ are largely unvegetated due to ~~its~~ depth and the scouring effects of flowing water. However, some hydrophytic vegetation may be present along the upper edges, and in areas where sediment accumulations provide a substrate suitable for plant establishment and growth. Himalaya blackberry (*Rubus discolor*) thickets can be found along the banks at various reaches of the creek.

Two stock ponds have been mapped within the Drainage Master Plan area. These aquatic features were not field mapped but appear to be excavated basins adjacent to the creeks. They likely fill to overflowing during the wet season and may be artificially maintained during the dry season.

Special Status Species

Based upon vegetation communities present on the property, species' known distributive data, and the references cited above, a list of potentially occurring special-status species has been developed for the Drainage Master Plan project area. This list is presented in Plate BR -3. Species include: six plant species, three invertebrates, one amphibian, two reptiles, fifteen birds, and seven mammals.

Plants

Special status plants that may occur on-site include those that are associated with vernal pools and marshes. The vernal pool species include dwarf downingia

(*Downingia pusilla*, CNPS list 2), Boggs Lake hedge-hyssop (*Gratiola heterosepala*, California-endangered and CNPS List 1B), Ahart's dwarf rush (*Juncus leiospermus* var. ahartii, federal species of concern and CNPS list 1B), Green's legenere (*Legenere limosa*, federal species of concern and CNPS List 1B), slender Orcutt grass (*Orcuttia tenuis*, California endangered, federal threatened, and CNPS List 1B) and Sacramento Orcutt grass (*Orcuttia viscida*, California endangered, federal endangered, and CNPS List 1B), and the marsh species includes Sanford's arrowhead (*Sagittaria sanfordii*, federal species of concern and CNPS List 1B). Of these, Boggs Lake hedge-hyssop, slender Orcutt grass, and Sacramento Orcutt grass are listed and protected pursuant to the state and/or federal Endangered Species Acts. Dwarf downingia, Green's legenere, Ahart's dwarf rush, and Sanford's arrowhead are not listed and protected pursuant to either state or federal Acts.

INVERTEBRATES

The vernal pool basins on-site can provide habitat for the federally listed vernal pool fairy shrimp (*Branchinecta lynchi*, federal threatened) and vernal pool tadpole shrimp (*Lepidurus packardi*, federal endangered), and as such, are often considered by the U.S. Fish and Wildlife Service (USFWS) to represent potentially occupied habitat.

Elderberry shrubs (*Sambucus mexicanus*) are host plant to the federally threatened Valley elderberry longhorn beetle (VELB, *Desmocerus californicus dimorphus*). The U.S., Fish and Wildlife Service typically consider all elderberry shrubs in this region to represent potentially occupied habitat.

FISH

There are no immediate fish issues within Elder Creek. However, impacts to the Creek may affect down stream conditions for federally listed fish species such as Sacramento Splittail and Central Valley Evolutionarily Significant Units (ESU) anadromous salmonids, such as Central Valley steelhead, Fall-run Chinook salmon, and spring-run salmon.

AMPHIBIANS

The seasonal wetlands, drainage swales, and vernal pools and adjacent grasslands on-site represent potentially suitable habitat for the western spadefoot toad (*Spea hammondi*, CDFG species of special concern and federal species of concern). No other special-status amphibians are expected to occur on-site.

REPTILES

Two special-status reptiles may occur on-site, the giant garter snake (*Thamnophis gigas*, California and federally threatened) and northwestern pond turtle (*Clemmys marmorata marmorata*, CDFG species of special concern and California Code of Regulation Title 14 fully protected species). Giant garter snakes typically occupy

perennial ponds, marshes, slow-moving streams, and agricultural ditches containing adequate water supply during the spring and summer months. Northwestern pond turtles typically occur within perennial streams, creeks, ponds and marshes. ~~This reach of Elder Creek~~The reaches of Elder Creek and Gerber Creek within the subject property represents potentially suitable giant garter snake and northwestern pond turtle habitat.

Plate BR -3
Potentially Occurring Special Status Species
NVSSP Drainage Master Plan

Attachment A. Potentially Occurring Special-Status Species

Common Name	Scientific Name	Federal Status	State Status	Other Status	Habitat Description	Approximate Survey Period (J F M A M J J A S O N D)
Plants						
Boggs Lake hedge-hyssop	*Gratiola heterosepala*	-	CE	1B	vernal pools	
Ahart's dwarf rush	*Juncus leiospermus* var. *ahartii*	-	-	FSC, 1B	vernal pools	
Greene's legenere	*Legenere limosa*	-	-	FSC, 1B	vernal pools	
Slender orcutt grass	*Orcuttia tenuis*	FT	CE	1B	vernal pools	
Sacramento orcutt grass	*Orcuttia viscida*	FE	CE	1B	vernal pools	
Sanford's arrowhead	*Sagittaria sanfordii*	-	-	FSC, 1B	marsh, creeks, ditches	
Invertebrates						
Vernal pool fairy shrimp	*Branchinecta lynchi*	FT	-	-	vernal pools/wetlands	
Vernal pool tadpole shrimp	*Lepidurus packardi*	FE	-	-	vernal pools/wetlands	
Valley elderberry longhorn beetle	*Desmocerus californicus dimorphus*	FT	-	-	riparian, woodland	
Amphibians						
Western spadefoot toad	*Spea hammondi*	-	-	CSC, CCR, BLM	vernal pools, wetlands/adjacent grassland	
Reptiles						
Northwestern pond turtle	*Clemmys marmorata marmorata*	-	-	CSC, CCR, FS	creeks, ponds	
Giant garter snake	*Thamnophis gigas*	FT	CT	CCR	ditches, sloughs, marshes	
Birds						
White-tailed kite	*Elanus leucurus*	-	-	CFP, MNB	woodland, grassland	
Northern harrier	*Circus cyaneus*	-	-	CSC	marsh, grassland	
Sharp-shinned hawk	*Accipiter striatus*	-	-	CSC	woodland	
Cooper's hawk	*Accipiter cooperii*	-	-	CSC	woodland	
Swainson's hawk (nesting)	*Buteo swainsoni*	-	CT	-	grassland, riparian	
Ferruginous hawk	*Buteo regalis*	-	-	CSC, MNB	grassland	
Golden eagle	*Aquila chrysaetos*	-	-	CFP, CSC, CDF	grassland	
Merlin	*Falco columbarius*	-	-	CSC	woodland, grassland	
Prairie falcon	*Falco mexicanus*	-	-	CSC	grassland	
Mountain plover (wintering)	*Charadrius montanus*	FPT	-	CSC, MNB	grassland, pasture	
Long-billed curlew (nesting)	*Numenius americanus*	-	-	CSC, MNB	grassland, pasture	
Burrowing owl	*Athene cunicularia*	-	-	CSC, MNB, BLM	grassland	
Short-eared owl	*Asio flammeus*	-	-	CSC, MNB	marsh, grassland	
Loggerhead shrike	*Lanius ludovicianus*	-	-	CSC, MNB	grassland, woodland	
Tricolored blackbird	*Agelaius tricolor*	-	-	CSC, MNB, BLM	marsh, grassland	
Mammals						
Small-footed myotis	*Myotis ciliolabrum*	-	-	BLM	various woodland/shrubland	
Long-eared myotis	*Myotis evotis*	-	-	BLM	deciduous or coniferous	

2002-052 SSS List

Plate BR-3 (cont.)
Potentially Occurring Special Status Species
NVSSP Drainage Master Plan

Attachment A. Potentially Occurring Special-Status Species

Common Name	Scientific Name	Federal Status	State Status	Other Status	Habitat Description	Approximate Survey Period											
						J	F	M	A	M	J	J	A	S	O	N	D
Fringed myotis	*Myotis thysanodes*	-	-	BLM	deciduous or coniferous												
Long-legged myotis	*Myotis volans*	-	-	CNDDB	deciduous or coniferous												
Yuma myotis	*Myotis yumanensis*	-	-	CSC, BLM	Riparian woodland												
Townsend's big-eared bat	*Corynorhinus townsendii*	-	-	CSC, FS, BLM	mines, man-made structures,												
Pallid bat	*Antrozous pallidus*	-	-	CSC, FS, BLM	mines, man-made structures,												

Status Codes

FE - Federally listed, Endangered.
FT - Federally listed, Threatened.
FPT - Formally Proposed for federal listing as Threatened.
FC - Candidate for federal listing as Threatened or Endangered.
FSC - U. S. Fish and Wildlife Service Species of Concern
MNB - U. S. Fish and Wildlife Service Migratory Nongame Birds of Management Concern
BLM - Bureau of Land Management Sensitive Species
CE - California listed, Endangered.
CT - California listed, Threatened.
CCR - California Code of Regulations Title 14 Fully Protected Species
CFP - Fish and Game Code of California Fully Protected Species (§3511-birds, §4700-mammals, §5050-reptiles/amphibians).
CSC - California Department of Fish and Game Species of Special Concern.
CDF - California Department of Forestry Sensitive Species
1B - California Native Plant Society/Rare or Endangered in California and elsewhere
2 - California Native Plant Society/Rare or Endangered in California, more common elsewhere
4 - California Native Plant Society/Plants of Limited Distribution
CNDDB - Species that is tracked by CDFG's Natural Diversity Database but does not have any of the above special-status designations otherwise.

2002-052 SSS List

BIRDS

The potentially occurring special status birds on-site include nesting raptors, nesting songbirds, and wintering or migrant birds. The nesting raptors include both tree nesting and ground nesting species. The potential nesting trees are scattered throughout the Drainage Master Plan area. Tree nesting species that may nest on-site are white-tailed kite (*Elanus leucurus*, Fish and Game Code fully protected and USFWS bird of management concern), Cooper's hawk (*Accipiter cooperii*, CDFG species of special concern), and Swainson's hawk (*Buteo swainsoni*, California threatened). Potentially occurring ground-nesting birds on-site include northern harrier (*Circus cyaneus*, CDFG species of special concern) and burrowing owl (*Athene cunicularia*, CDFG species of special concern and federal species of concern).

Special status songbirds that may occur within the project site include loggerhead shrike (*Lanius ludovicianus*, CDFG species of special concern and USFWS bird of management concern) and tricolored blackbird (*Agelaius tricolor*, CDFG species of special concern and USFWS bird of management concern).

Other special status birds that may occur on-site are not known to nest in this region and/or suitable nesting habitat is not present on-site. However, grassland and pastures on the project site represent potential foraging habitat for these remaining species. These are: sharp-shinned hawk (*Accipiter striatus*, CDFG species of special concern), ferruginous hawk (*Buteo regalis*, CDFG species of special concern and USFWS Bird of Management Concern), golden eagle (*Aquila chrysaetos*, Fish and Game Code §3511 fully protected species and CDFG species of special concern), Merlin (*Falco columbarius*, CDFG species of special concern), prairie falcon (*F. mexicanus*, CDFG species of special concern), mountain plover (*Charadrius montanus*, federally proposed threatened and USFWS Bird of Management Concern), long-billed curlew (*Nemenius americanus*, CDFG species of Special concern and USFWS Bird of Management Concern), and short-eared owl (*Asio flammeus*, CDFG species of special concern).

MAMMALS

Gerber Creek, Elder Creek and the irrigated pastures on-site may provide foraging habitat for a variety of special-status bats that are known to occur in this region. These are: small-footed myotis (*Myotis ciliolabrum*), long-eared myotis (*M. evotis*), fringed myotis (*M. thysanodes*), long-legged myotis (*M. volans*), Yuma myotis (*M. yumanensis*), Townsend's big-eared bat (*Corynorhinus townsendii*), and pallid bat (*Antrozous pallidus*). Typical roosting and breeding sites for these species include appropriate cliffs, buildings, caves, mines and bridges. The homes, outbuildings, and horse barns may be potentially used as roost sites, but breeding or nursery use is highly unlikely due to the presence of human disturbances. None of these species are listed and protected pursuant to the California or federal Endangered Species Act; they are considered CDFG species of special concern, Forest Service sensitive species, and/or Bureau of Land Management sensitive species.

Impact: Impacts to Waters of the U.S.

Gerber Creek and Elder Creek will generally remain in their current locations. However, 12.99 acres of the creeks will be directly or indirectly impacted by the proposed deepening and widening. In addition, in order to widen and realign the creeks, additional wetland impacts will result in some locations. These impacts include 1.08 acres of vernal pool, 0.77 acre of seasonal wetland, 0.03 acre of seasonal wetland swale, and 0.84 acre of stock pond. The reconstructed creeks will consist of a low-flow channel, associated channel bottom wetlands, wetland/riparian benches and nesting islands.

The DMP project will emphasize enhancement and long-term preservation of the creek corridors' functions and values. The initial design of the drainage corridor focused primarily on flood-flows and water quality treatment requirements. The preliminary design has been refined to avoid wetland features where possible, to incorporate a meandering low-flow channel with adjacent wetlands, wetland and riparian benches, and nesting islands to compensate for impacts to wetlands and their functions and values. The channel was designed to require minimal maintenance and allow for the establishment of woody vegetation without compromising flood protection.

The proposed DMP design replaces and enhances the acreage, functions and values of the wetlands to be impacted during construction. The existing channelized creeks will be re-contoured, widened and deepened to accommodate anticipated storm water flood-flows and provide for public safety. The existing channel alignments will be maintained wherever practicable. In order to preserve as much of the existing riparian habitat as possible, portions of the creeks that have significant vegetation have been avoided and incorporated into the final overall channel design.

The modified drainage corridors will result in 4.85 acres of creek (low-flow channel), 17.55 acres of channel bottom/wetlands and 3.23 acres of wetland/riparian benches. Post-project wetland/riparian habitat acreages will total 25.63 acres, a net gain of nearly 11.80 acres of habitat.

This plan has been submitted to the U.S. Army Corps of Engineers as part of an application for an individual permit. Impacts associated with the implementation of the NVSSP Drainage Master Plan are considered less-than-significant.

MITIGATION MEASURES**:**

None.

Impact: Effects on Vernal Pool Species.

Construction of the proposed project will remove 1.08 acres of vernal pools, habitat for the vernal pool fairy shrimp, vernal pool tadpole shrimp, and spadefoot toad. Removal of this habitat represents a significant impact.

MITIGATION MEASURES**:**

~~BR-13.~~BR-12. The applicant shall compensate for impacts to vernal pool species through consultation with the U.S. Fish and Wildlife Service as outlined in Section 7 of the Endangered Species Act. The applicant shall implement all measures included in the Biological Opinion issued as a result of this consultation.

Impact: Effects on birds of prey.

Project construction has the potential to disturb nesting activities of listed birds of prey. Impacts to Swainson's Hawk and other raptors are considered potentially significant.

MITIGATION MEASURES**:**

~~BR-14.~~BR-13. If construction is proposed during the raptor breeding season (February – August), a focused survey for migratory bird nests shall be conducted within 30 days prior to the beginning of construction activities by a qualified biologist in order to identify active nests on the site. If active nests are found, no construction activities shall take place within 500 feet of the nest until the young have fledged. Trees containing nests that must be removed as a result of project implementation shall be removed during the non-breeding season (September – January). If no active nests are found during the focused survey, no further mitigation will be required.

Impacts to Giant Garter Snake and Northwestern Pond Turtle

The portions of Elder Creek and Gerber Creek located within the project area represent potential habitat for the giant garter snake and the northwestern pond turtle. Construction of creek improvements could impact both GGS and northwestern pond turtle. Impacts to GGS and northwestern pond turtle are potentially significant.

MITIGATION MEASURES**:**

~~BR-15.~~BR-14. The project site shall be surveyed for giant garter snakes and the northwestern pond turtle by a qualified biologist within 24 hours prior to the start of construction activities (including clearing and grubbing) located within 200 feet of Elder or Gerber Creeks. Survey of the area shall be repeated if a lapse in construction activity of two weeks or greater occurs. If a giant garter snake and/or northwestern pond turtle is encountered during construction, activities shall cease until appropriate corrective measures have been completed or it has been determined that the snake and/or turtle will not be harmed. Giant garter snakes and northwestern pond turtles encountered during construction should be allowed to move away on their own. Capture and relocation of trapped or injured individuals shall only be attempted by personnel or individuals with current USFWS recovery permits. Any incidental take shall be reported to the USFWS at (916) 979-2725 and Department of Environmental Review and

Assessment at (916) 874-7914 within one working day. Any giant garter snake and/or northwestern pond turtle sightings shall be reported within 24 hours to the Department of Environmental Review and Assessment at 874-7914.

NVSSP WATER TREATMENT FACILITY

A portion of the NVSSP Water Treatment Facility is located in the northwest corner of the Vineyard Point subdivision Plate ~~XX~~BR-4. The remainder of the property lies immediately to the west, between Vineyard Point and the CCTR tracks.

The area, which is not located within the subdivision boundaries, contains a vernal pool complex as detailed by Plate BR -5. Impacts to the site are similar to impacts of the Vineyard Point subdivision.

Impact: Impacts to wetlands.

The proposed project has the potential to impact Waters of the United States including vernal pools. The proposed mitigation will ensure that this impact is less-than-significant.

MITIGATION MEASURES:

~~BR-16.~~BR-15. To compensate for the loss of wetlands and waters of the U.S., one of the following measures shall be implemented:

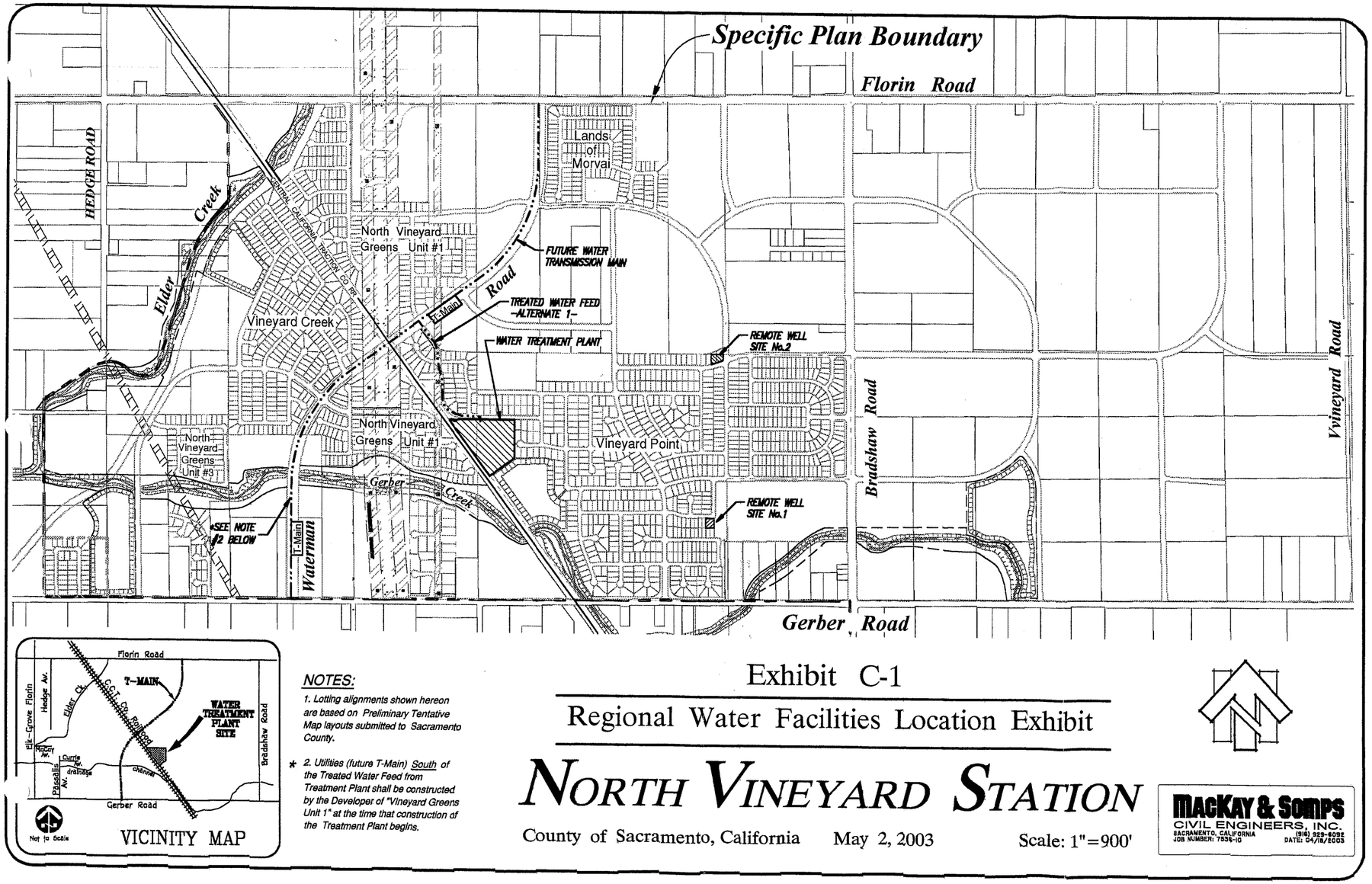
1. Preserve or create wetlands sufficient to result in no net loss of wetland acreage, and protect their required watersheds as is necessary for the continued function of wetlands on the project site. The appropriate hearing body shall determine that project design, configuration, and wetland management plan, provides reasonable assurances that the wetlands will be protected and their long-term ecological health maintained.

2. Where a Section 404 Permit has been issued by the Corps of Engineers, or an application has been made to obtain a Section 404 Permit, the Mitigation and Management Plan required by that permit or proposed to satisfy the requirements of the Corps for granting a permit may be submitted for purposes of satisfying paragraph 1, provided a no net loss of wetlands is achieved. ~~and, provided, further, that such mitigation and management plan shall be subject to the independent, discretionary approval of the Board of Supervisors.~~

3. Pay to the County of Sacramento an amount based on a rate of $35,000 per acre for the unmitigated/uncompensated wetlands, which shall constitute mitigation for purposes of implementing adopted no net loss policies and CEQA required mitigation. The payment shall be collected by the Department of Planning and Community Development at the time of Improvement Plan or

Building Permit approval, whichever occurs earlier, and deposited into the Wetlands Restoration Trust Fund.

Plate BR -4
NVSSP Water Treatment Facility Location



NOTES:

1. Lotting alignments shown hereon are based on Preliminary Tentative Map layouts submitted to Sacramento County.

* 2. Utilities (future T-Main) South of the Treated Water Feed from Treatment Plant shall be constructed by the Developer of "Vineyard Greens Unit 1" at the time that construction of the Treatment Plant begins.

Exhibit C-1

Regional Water Facilities Location Exhibit

NORTH VINEYARD STATION

County of Sacramento, California May 2, 2003 Scale: 1"=900'

MACKAY & SOMPS
CIVIL ENGINEERS, INC.
SACRAMENTO, CALIFORNIA (916) 325-6032
JOB NUMBER: 7536-10 DATE: 04/15/2003

Impact: Effects on Vernal Pool Species.

Construction of the proposed project has the potential to impact vernal pools, habitat for the vernal pool fairy shrimp, vernal pool tadpole shrimp, and spadefoot toad. Removal of this habitat represents a significant impact.

MITIGATION MEASURES**:**

~~BR-17.~~BR-16. The applicant shall compensate for impacts to vernal pool species through consultation with the U.S. Fish and Wildlife Service as outlined in Section 7 of the Endangered Species Act. The applicant shall implement all measures included in the Biological Opinion issued as a result of this consultation.

Impact: Effects on birds of prey.

Project construction has the potential to disturb nesting activities of listed birds of prey. Impacts to Swainson's Hawk and other raptor are considered potentially significant.

MITIGATION MEASURES**:**

~~BR-18.~~BR-17. If construction is proposed during the raptor breeding season (February – August), a focused survey for migratory bird nests shall be conducted within 30 days prior to the beginning of construction activities by a qualified biologist in order to identify active nests on the site. If active nests are found, no construction activities shall take place within 500 feet of the nest until the young have fledged. Trees containing nests that must be removed as a result of project implementation shall be removed during the non-breeding season (September – January). If no active nests are found during the focused survey, no further mitigation will be required.

~~BR-19.~~BR-18. To mitigate for the loss of Swainson's hawk foraging habitat, prior to the approval of Improvement Plans, the applicant shall perform one of the following:

1. The project proponent shall preserve acreage at a rate of 0.50 acre for each acre lost of similar habitat within a 10-mile radius of the project site. This land shall be protected through fee title or conservation easement (acceptable to the California Department of Fish and Game).

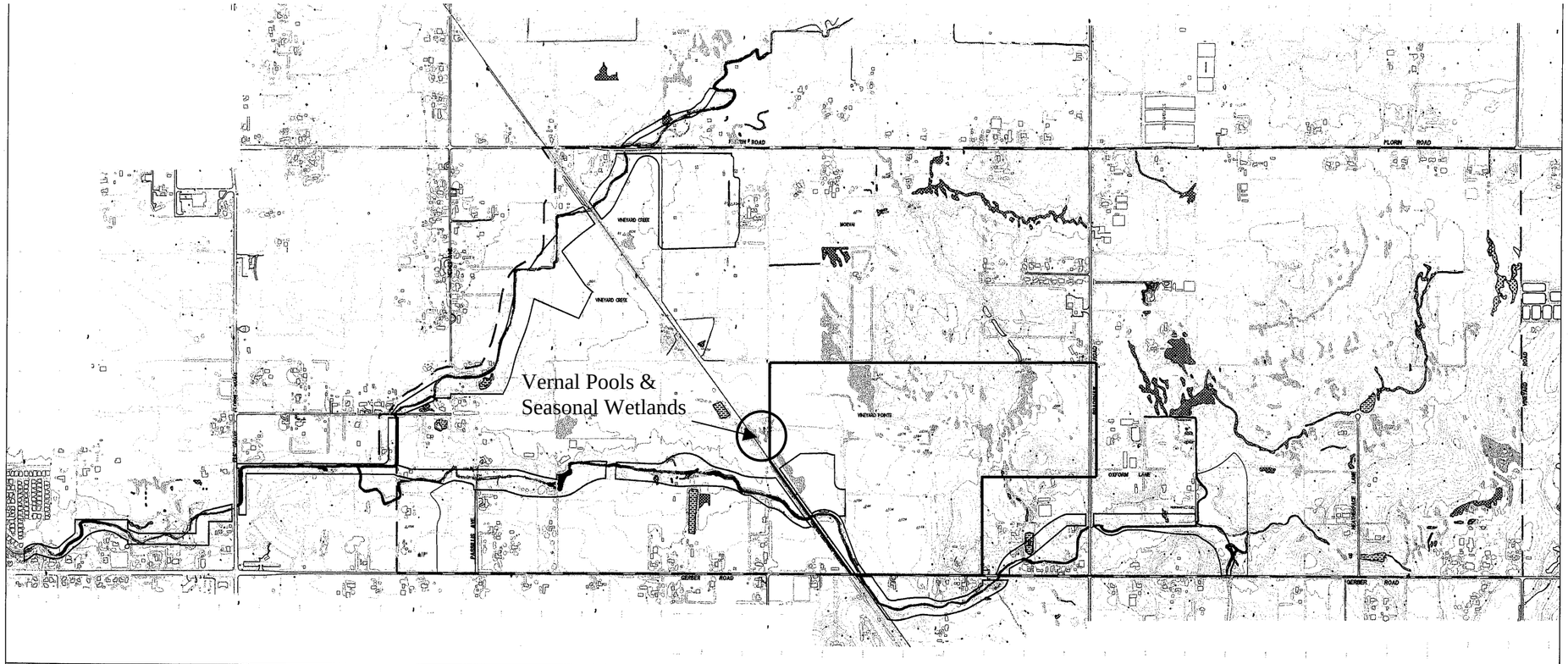
2. The project proponent shall, to the satisfaction of the California Department of Fish and Game, prepare and implement a Swainson's hawk mitigation plan that will include preservation of Swainson's hawk foraging habitat.

3. The project proponent shall submit payment of a Swainson's hawk impact mitigation fee per acre impacted to the Department of Planning and Community Development in the amount as set forth in Chapter 16.130 of

the Sacramento County Code as such may be amended from time to time and to the extent that said Chapter remains in effect.

4. Should the County Board of Supervisors adopt a Swainson's hawk mitigation policy/program (which may include a mitigation fee) prior to the implementation of one of the measures above, the project proponent may be subject to that program instead.

Plate BR -5
Wetlands on Treatment Plant Site



N

SCALE IN FEET
0 600 1200
SCALE: 1" = 1 200'

CLASSIFICATION	WATERS OF THE U.S. ACREAGE	TOTAL NVSSP ACREAGE	DMP ACREAGE
Vernal Pool		27.96	1.08
Seasonal Wetland		19.13	0.87
Seasonal Wetland Swale		1.52	0.03
Seasonal Marsh		3.92	--
Creek		13.48	13.48
Stock Pond		4.24	0.84
Fresh Water Marsh		1.97	--
TOTAL		72.22	16.30

Drainage Master Plan Boundary

NOTE:
Portions of the project have been field delineated and verified by the CORPS of Engineers. Other portions have been field delineated, but have not yet been verified by the CORPS. Those areas where permission to access the property have been delineated by aerial photograph interpretation (See Attachment) identifies the level of delineations conducted for parcels affected by the propsed project.

FILENAME: -DWGS\2002-052\NVS-WINCREST.DWG 12/6/02

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

FIGURE 9. North Vineyard Station Specific Plan Wetlands

2002-052 Vineyard Station

11 CULTURAL RESOURCES

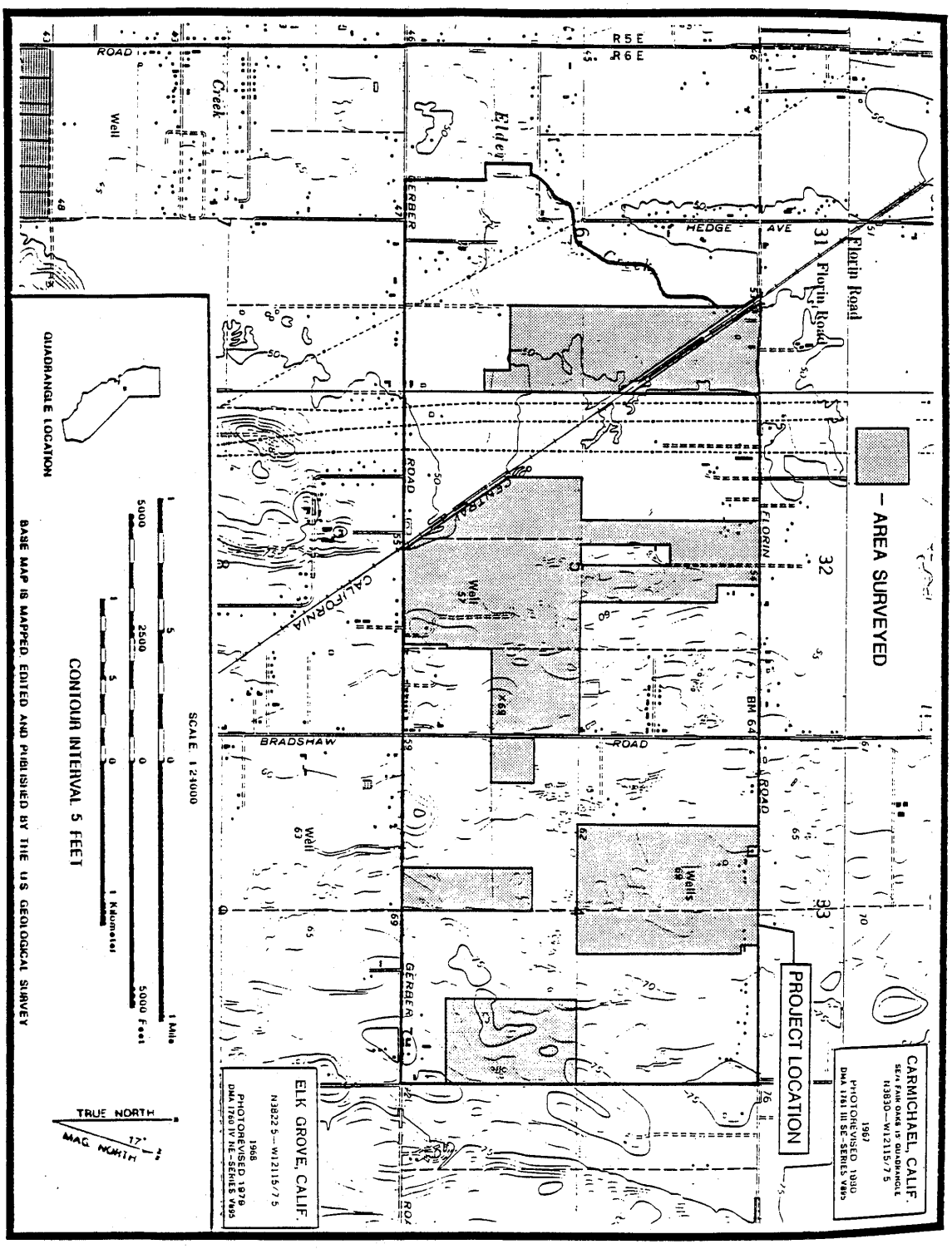
BACKGROUND

For the prior EIR, a total of 556 acres of the Specific Plan Area, known as the Survey Area (Plate CR -1), was given a complete pedestrian walk-over by a team of archeologists. This acreage includes the areas encompassed by the Vineyard Creek Subdivision and the Vineyard Point Subdivision. The remaining 1,024 acres of the Specific Plan Area were inspected for the presence or absence of historic period structures via public roadways.

No prehistoric artifacts or evidence of prehistoric use of the Survey Area was found. One historic period archeological site was discovered near the Central California Traction Railroad in the northwest portion of the Plan Area. This site consists of a small scatter of 1930s/40s era refuse that was primarily domestic in nature. Broken condiment bottles, fragments of a child's decorated ceramic tea set, sardine cans, red bricks, a sewer pipe fragment, and a bent iron pipe were all discovered protruding from the ground surface. No existing structures, or structures shown on historic period maps or other documentary sources, were located anywhere near this refuse deposit. The closest feature is the Central California Traction Railroad, which is located to the west and south of the site area. Given the types of historic period artifacts present at the site, it is unlikely that this refuse was once associated with the railroad. It would appear that this small refuse pile probably represents a single episode dumping of material that was once associated with a residence. The existing structure on this parcel is located approximately 2,000 feet to the north, northwest. This home was constructed in 1910, however, and it is possible that the refuse deposited at the site originated from this residence. According to the prior EIR, this deposit does not qualify as an important archeological resource, and no additional mitigation is required.

Twelve historic period (greater than 45 years old) structures were identified during the pedestrian and vehicular inspection of the Specific Plan Area. Three of these structures are located within the Survey Area, while the remaining nine were found within the remaining Specific Plan Area. One of these structures is located within the Vineyard Creek Subdivision area. The prior EIR concluded the following regarding the historic period structures:

Plate CR -1
Survey Area



> None of the surviving structures within the Survey Area represent the early years of pioneer settlement in this area. The earliest structures date to about the turn of the century. There are a number of structures in the Specific Plan Area dating within the 1900-1920 era representing small rural residence types and agricultural utility buildings common for this period. The types of residences within the Plan Area varied. The two most common styles were the Craftsman and bungalow, which was popular throughout rural America from about 1905 to 1920, and the Minimal Traditional, a style that became popular in the late 1930s and remained the dominant style during the post-war 1940s and 1950s. Examples in the Plan Area range from well preserved to poorly maintained to remodeled beyond recognition. None of the extant buildings are associated with important individuals or events, and therefore, do not constitute "important" resources under CEQA criteria in this area.

However, four historic structures were identified as potentially important due to their architectural integrity and as representative examples of identifiable architectural styles. One of these structures is located within the Vineyard Creek Subdivision area. The remaining three structures are located within the remaining Specific Plan planning area. At the time of publication of the prior EIR, these four properties were considered potentially significant historical resources, but were not evaluated for eligibility to the National Register of Historic Places.

The prior EIR concluded that the project could result in future disturbance of known and unknown prehistoric and/or historic resources. These impacts are considered potentially significant. The County of Sacramento has an environmental review process for projects involving discretionary permits that requires cultural resource reports to be prepared in situations where development is proposed in areas known to be sensitive for cultural (archaeological and historic) resources. Since future development within the Plan area will require additional entitlements such development will also be subject to further discretionary review. Potential construction-related impacts to cultural resources will be addressed at that time. However, to ensure impacts to cultural resources are minimized and addressed at the earliest stages of proposed development, mitigation measures were incorporated into the North Vineyard Specific Plan. These measures remain applicable to the current project.

VINEYARD CREEK

Peak & Associates prepared a Cultural Resource Inventory and Evaluation for the Vineyard Creek subdivision. This report further evaluated the potentially significant historic resources on the Vineyard Creek property using National Register criteria.

ARCHEOLOGICAL RESOURCES

Three prehistoric isolates were identified during surveys. These include:

- Isolate #1 is two basalt secondary flakes
- Isolate #2 is a single, small, black chert, tertiary flake
- Isolate #3 is a possible mano made on a gneiss stream cobble, and a possible hammerstone, made on a granitic stream cobble

All isolates were mapped and documented, and left in place. Isolates are *a priori*, considered not significant, and are ineligible for inclusion on the National Register of Historic Places, thus requiring no protective measures.

HISTORIC PERIOD SITES

FRAMEWORK FOR EVALUATION

Decisions regarding management of cultural resources hinge on their determination of significance (36 CFR 60.2). As part of this decision-making process, the National Park Service has identified components which must be considered in the evaluation process, including:

- Criteria for significance;
- Historic context; and
- Integrity

CRITERIA FOR SIGNIFICANCE

Significance of cultural resources is measured against the National Register criteria for evaluation:

> The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and,
>
> a) That are associated with events that have made a significant contribution to the broad patterns of our history; or
>
> b) That are associated with the lives of persons significant in our past; or
>
> c) That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

d) That have yielded, or may be likely to yield, information important in prehistory or history (36 CFR 60.4).

HISTORIC CONTEXT

The historic context is a narrative statement "that groups information about a series of historic properties based on a shared theme, specific time period, and geographical area" To evaluate resources in accordance with federal guidelines, these sites must be examined to determine whether they are examples of a defined "property type". The property type is a "grouping of individual properties based on shared physical or associative characteristics". Through this evaluation, each site is viewed as a representative of a class of similar properties rather than as a unique phenomenon.

A well developed historical context helps determine the association between property types and broad patterns of American history. Once this linkage is established, each resource's potential to address specific research issues can be explicated.

INTEGRITY

For a property to be eligible for listing in the National Register it must meet one of the criteria for significance (36 CFR 60.4 [a, b, c, d]) and retain integrity. Integrity is defined as "the authenticity of a property's historic identity, evidenced by the survival of physical characteristics that existed during the property's historic or prehistoric period".

The following discussion is derived from National Register Bulletin 15 ("How to Apply the National Register Criteria for Evaluation").

Within the concept of integrity, there are seven aspects or qualities that define integrity in various combinations. The seven aspects are: location, design, setting, materials, workmanship, feeling, and association. To retain historic integrity, a property will possess several or usually most of these aspects. The retention of specific aspects is necessary for a property to convey this significance. Determining which of the seven aspects are important involves knowing why, where and when the property is significant.

The prescribed steps in assessing integrity are as follows:

- Define the essential physical features that must be present for a property to represent its significance;
- Determine whether the essential physical features are visible enough to convey their significance;
- Determine whether the property needs to be compared with similar properties; and,

- Determine, based on the significance and essential physical features, which aspects of integrity are particularly vital to the property being nominated and if they are present.

Ultimately, the question of integrity is answered by whether or not the property retains the identity for which it is significant. All properties change over time. It is not necessary for a property to retain all its historic physical features or characteristics. However, the property must retain the essential physical features that enable it to convey its historic identity. The essential physical features are those features that define why a property is significant.

A property's historic significance depends on certain aspects of integrity. Determining which of the aspects is most important to a particular property requires an understanding of the property's significance and its essential physical features. For example, a property's historic significance can be related to its association with an important event, historical pattern or person. A property that is significant for its historic association is eligible for listing if it retains the essential physical features that made up its character or appearance during the period of its association with the important event, historical pattern, or person.

A property important for association with an event, historical pattern, or person ideally might retain some features of all seven aspects of integrity. Integrity of design and workmanship, however, might not be as important to the significance, and would not be relevant if the property were an archeological site. A basic integrity test for a property associated with an important event or person is whether a historical contemporary would recognize the property as it exists today. For archeological sites that are eligible under Criteria a and b, the seven aspects of integrity can be applied in much the same way as they are to buildings, structures, or objects.

In sum, the assessment of a resource's National Register eligibility hinges on meeting two conditions:

1. the site must possess the potential to be eligible for listing in the National Register under one of the evaluation criteria either individually or as a contributing element of a district based on the historic context that is established; and

2. The site must possess sufficient integrity, i.e. it must retain the qualities that make it eligible for the National Register.

For the National Register, "a district possesses a significant concentration, linkage, or continuity of … objects united historically or aesthetically by plan or physical development." The identity of a district derives from the relationship of its resources, which can be an arrangement of functionally related properties.

RESEARCH

PREVIOUS RESEARCH

Two cultural resource studies have been conducted on the subject property. The first of those studies resulted in the recordation of one of the resources –CA-SAC-715H (PAR 1995). The second study involved the recordation of a segment of a previously recorded linear resource—CA-SAC-506H, and an evaluation of both of the resources (Jones & Stokes 2001). The 2001 evaluation concluded that neither of the resources were eligible for the National Register or for the California Register of Historical Resources.

CURRENT RESEARCH

To confirm the conclusions reached by previous researchers, a minor amount of archival research has been conducted to supplement the previous research effort. Research was conducted at the California Room of the California State Library, and at the Sacramento Archives and Museums Collections Center. Documents used include County Tax Assessment Map Books, County Tax Assessment Rolls, Probate Records, County histories, and the Sacramento Bee-Union Index.

HISTORIC CONTEXT

HISTORIC LAND USE AND OCCUPANCY

The lands of this portion of Sacramento County are primarily dry plains, cut be occasional drainages. Elder Creek crosses the project area. The lands along the major drainages were the first to be occupied with settlement occurring in the dry plains and on the lesser drainages such as Elder Creek in the 1850s and early 1860s.

The lands of this portion of Sacramento County were used for dry land farming for crops such as grain and hay. With a permanent water source, some of the lands could be used for grapes and orchards, or for dairies.

The 1855 General Land Office for the Township shows no houses within three miles of the project area. Elder Creek is shown as an “arroyo” suggesting that it was a fairly minor drainage. The only agricultural improvements are “fields”, again suggesting dry-land cultivation of grain or hay.

As early as 1900, Robert Larson had acquired the east half of the northeast quarter of section 6,a total of 79 acres. The land was valued at $1,420, with improvements valued at $250 (County Tax Assessment Roll 1900). The 1903 County map indicates this ownership.

In 1912, Robert Larson land had increased in value to $2,240, and improvements had increased in value to $1,000. Larson also owned land to the north of Florin Road in section 31, Township 8 North Range 6 East.

The first detailed topographic map of the region is the 1909 Elk Grove 1:31,680 topographic map, based on a 1907 survey. There were two houses in the project vicinity. One of these locations appears to be the location of CA-SAC-715H. The other is further east, on the south side of Elder Creek.

The County Building Record gave an approximate date of construction for the residence as 1910 (Jones & Stokes 2001). It is likely that the actual date of construction preceded this by a few years, with a building at this location by 1907. The increase in improvement values between 1900 and 1912 further supports this. The second building shown on the 1909 topographic map may have been Larson's first house on the land, or the house first built by a previous owner.

By 1919, the land ownership had changed from Robert Larson to Robert and Anna Larson (County Tax Assessment Roll 1919). The Larsons owned the land together until at least 1934. In that year, the 74 acres were valued at $2,660, and improvements at $1,400. They paid a total tax of $6.88 for the year. They also had $1,800 in personal property, for which they paid an additional $3.85 in taxes (County Tax Assessment Roll 1934). The Larsons apparently raised grain and grapes.

Anna Larson died in 1934 or 1935. Her husband prepared a new will on Jan. 21, 1936, leaving all his estate to his daughter Mary Barton of Hagginwood. Nothing was left to the other two children, Minnie Lewis and Newton Larson, both of Florin, as they had been "otherwise provided for" (Probate Case File 19666).

By 1939, the land and house were owned by Minnie Lewis (County Tax Assessment Roll 1939). Lewis was the daughter of Robert and Anna Larson. This suggests that the house was turned over to Minnie right after the death of her mother, and other lands or property transferred to Newton Larson.

Robert Larson re-married after he prepared his 1936 will. He died October 3, 1939. His widow had to petition the court for $10 a month as she was left without any means of support. Ultimately, she received a portion of the estate, even though she was not named in the will (Probate Case File 19666).

The 1941 Franklin quadrangle (1:62,500 scale) produced by the U.S. Army showed two buildings on the property. The 1952 Elk Grove USGS 7.5' topographic quadrangle indicates that the creek had moved considerably southward, with the building on the south side of the creek no longer present. There was also an outbuilding to the southwest of the residence. South and east of the creek is a vineyard totaling about 10 acres.

THE RAILROAD

The early years of the twentieth century were an era of rapid development of a large number of interurban electrified railways. Technological advances related to the production and long-distance transmission of hydroelectric generated power in the late nineteenth century made this a popular form of transportation for passenger service and

freight service throughout the virtually flat terrain of the Central Valley. One of the systems to be organized and built in this era was the Central California Traction Railroad (CCT). The corporation was organized in 1905 with three goals in mind: to compete with the Southern Pacific and Western Pacific railroads for transporting agricultural products from farms on the east side of the San Joaquin and Sacramento valleys; to develop farmland along the railroad right-of-way; and to provide a major customer for the power company owned by several of the corporate directors.

The 53-mile CCT main line connected Sacramento with Stockton, with a branch from the main line to Lodi. The section from Sheldon to Sacramento including the section under review was completed in 1910. Almost from the beginning, the railroad built up a substantial freight business, and was a financial success. In the 1920s, Southern Pacific, Santa Fe and Western Pacific purchased the railway jointly. Eventually, the increasing use of personal automobiles and bus lines brought a reduction in the number of passengers for the CCT, and passenger service was eliminated in 1933. In 1946, the use of electricity was discontinued in favor of diesel service (Hilton and Due 1960: 401; Fickewirth 1992:27).

Site Descriptions

CA-SAC-715H is a two-story, square Craftsman-style house. The roof is flared and hipped, with beaded tongue and groove boxed eaves and knee braces. A large brick chimney is located along the exterior center of the eastern façade. Dormers are set in the roof on both the front and back of the residence. The house is sited on a 3-foot high concrete foundation. The top row of the concrete has wheat sheath designs impressed in the concrete. The residence is covered with 3-in-1 board siding. The west side of the residence has a bay window, and the east has an oriel window with brackets. The front porch extends across the full width of the residence, and has a hipped roof. This roof is supported by four tapered columns on concrete piers. In 1959, a second story, sympathetic to the original style, was added to the house (Jones & Stokes 2001:11-12).

CA-SAC-506H is a 400-foot segment of the Central California Traction Railroad and an associated trestle. The railroad is a single-track standard gauge line on a berm continuing onto a trestle spanning Elder Creek. The trestle is six feet in height, and is supported by five concrete and wood supports (Jones & Stokes 2001:11).

Evaluation of the Sites

CA-SAC-715H

The residence is not associated with events important in our past (Criterion A), nor with individuals important in our past (Criterion B). Robert Larson did not even have a biography in the County histories published during his prime years on the property (Willis 1913; Reed 1923).

Evaluated under Criterion C, it can be concluded that the building represents a fairly common style in Sacramento County. It is not a particularly good example of the style. The addition of the second story in 1959 destroyed the integrity of the building's original design and appearance. As such, it can be concluded that the building is not eligible for the National Register.

CA-SAC-506H

The relatively short electric interurban line is one of many electric railways built in the early years of the twentieth century. It is not associated with events or individuals important in our past (Criteria A and B). The line was constructed on the Central Valley floor, involving relatively simple construction and few engineering challenges. The conversion to diesel in 1946 involved the removal of many design elements and materials of the original system, impacting the overall integrity of the resource. The resource is not eligible for the National Register under Criterion C.

CONCLUSIONS

Neither the building nor the section of the railroad are eligible for inclusion in the National Register. No prehistoric, archaeological sites were encountered during the field investigation of the Survey Area. However, the lack of surface evidence does not preclude the existence of important, subsurface cultural materials. There is a potential to unearth buried cultural remains during future project construction activities. Caution should, therefore, be exercised during future development activities. Any accidental encountered of previously unidentified cultural materials will require notification of the Department of Environmental Review and Assessment. If skeletal remains are encountered, both the Department of Environmental Review and Assessment and the County Coroner must be immediately notified. With the implementation of the mitigation proposed in the prior EIR, however, these potential impacts to cultural resources in the Vineyard Creek subdivision are considered less than significant.

VINEYARD POINT

The Vineyard Point subdivision was also a part of the original Survey Area. No potentially significant archeological or architectural resources were discovered during the surveys. However, this does not preclude the existence of important, subsurface cultural materials. With the implementation of the mitigation proposed in the prior EIR, however, these potential impacts to cultural resources in the Vineyard Point subdivision are considered less than significant.

12 WATER SUPPLY

INTRODUCTION

An updated Master Water Supply and Water Distribution System Report (July 9, 2003) was prepared for the NVSSP by MacKay and Somps civil engineers. The purpose of this study is to identify facilities necessary to meet the water supply needs of developing the Plan area. This study updates the Master Water Supply and Water Distribution System Report for the Plan dated December 1997 also prepared by MacKay & Somps, which was incorporated into the Board certified Final EIR for the project dated February 1998.

The NVSSP comprises 1,595 acres of the 5,596-acre Northern Study Area identified in the 1998 Zone 40 Adjacent Areas Study. Approximately 1,285 acres of the NVSSP area will contribute to water demands per the approved land use designations. The NVSSP area will ultimately be served by a combination of groundwater and surface water. Water demands and associated infrastructure needs for the various land uses have been identified and hydraulic analyses, including fire flow, for all major phases of development within the NVSSP area have been prepared and are included in this report.

REGULATORY SETTING

GENERAL PLAN (GP)

The Sacramento County General Plan includes Policies CO-20 and CO-21, which state the following:

> CO-20 – In new development areas, as identified in Figure III-1 of the Land Use Element, entitlements for urban development shall not be granted until a Master Plan for water supply has been adopted by the Board of Supervisors and all agreements and financing for supplemental water supplies are in place. The land use planning process may proceed, and specific plans and rezoning may be approved.
>
> CO-21 – The Master Water Plan shall include three planning objectives which direct the plan to consider alternate conservation measures, achieve safe yield of ground water supply in conjunction with development in new urban growth areas, and formulate a five year monitoring program to review water plan progress.

The intent of these policies is to assist the County in meeting its objective of having a regionally safe ground water yield.

SACRAMENTO COUNTY WATER AGENCY (SCWA) ZONE 40

The Sacramento County Water Agency (SCWA) will provide major water facilities such as transmission pipelines, storage reservoirs, pump stations, wells and treatment facilities for the Specific Plan Area. The SCWA is governed by the Sacramento County Board of Supervisors acting as the Agency's Board of Directors. It may contract with the Federal Government and others with respect to the purchase, sale, and acquisition of surface water.

PROPOSED WATER SUPPLY MASTER PLAN

WATER DEMAND

The NVSSP currently proposes six phases of development with project buildout taking place over a 15-year period. The timelines provided are used for infrastructure planning purposes and could be somewhat different in actuality.

PHASE A-1 (YEAR EST. 2004-2005)

Phase A-1 is bounded on the north by 9 Street, on the south by Gerber Road, on the east by 4 Street, and on the west by the CCTC Railroad tracks. This initial phase is primarily comprised of single-family residential zoning of 3 to 7 units per acre. The water demands of this phase are based on current planning for the development of 114 acres, which includes construction of up to 601 residential units.

PHASE A-2 (YEARS EST. 2005-2009)

Phase A-2 is comprised of four separate areas in the western portion of the NVSSP. It consists of 166 acres of proposed development and is generally comprised of single-family residential zoning of 3 to 7 units per acre for a total of 947 residential units, including approximately 16 acres of parkland.

PHASE B (YEARS EST. 2006-2011)

Phase B is located in the north and central portion of the NVSSP. This phase is roughly bounded on the north by Florin Road, on the south by 9 Street, on the east by Bradshaw Road, and on the west by the overhead electrical transmission easement. Phase B consists of 256 acres of proposed development and is comprised of single and multi-family residential, commercial, school, parkland, and public services zoning, with a total of 1,262 residential dwelling units.

PHASE C (YEARS EST. 2008-2014)

Phase C is located in the eastern portion of the NVSSP. This phase is bounded on the north by Florin Road, on the south by Gerber Road, on the east by the Vineyard Road extension and on the west by Bradshaw Road. Phase C consists of 350 acres of proposed development and is comprised of single-family residential, school, and parkland zoning, including 1,259 residential dwelling units.

PHASE D

Phase D includes four separate areas in the NVSSP. This phase adds 240 acres of proposed development including single-family residential, commercial and school zoning, with a total number of 920 residential dwelling units.

PHASE E (BUILDOUT)

Phase E represents the final build-out condition for the NVSSP. It is comprised of the remaining 156 acres of proposed development including single and multi-family residential, commercial and parkland zoning, with a total number of 730 residential dwelling units.

Water demand for the transmission pipeline and storage facilities were derived using equivalent development unit (EDU) demands for each development phase of the Plan. Proposed unit development and land uses are converted to EDUs, which are then converted to average daily demand (ADD) by applying a single conversion factor (1 EDU + 0.41 gallons per minute (gpm) ADD x 1.07). A 7% transmission loss is accounted for in this conversion. Water supply modeling (WaterCAD) was generated for each major development phase through buildout of the Plan area. Maximum-Day and Peak-Hour demand scenarios were created for each water supply. The results are tabulated in the Master Water Supply and Water Distribution System Report Appendices. The EDU conversion factor utilized in the Land Use and Water Demand Tabulations are as follows:

Table 12-1
Equivalent Development Unit/Water Demand Conversion Factors

Zoned Land Use	EDU Conversion Factor	AVG. Daily Demand (gpm/EDU)	Max Day Demand (gpm/EDU)
Residential (1 – 3 units/acre)	1 EDU / Unit	0.41	0.82
Residential (3 – 5 units/acre)	1 EDU / Unit	0.41	0.82
Residential (5 – 7 units/acre)	1 EDU / Unit	0.41	0.82
Residential (7 – 14 units/acre)	1 EDU / Unit	0.41	0.82
Multi-Family	0.366 EDUs / Unit	0.41	0.82
Commercial/Industrial	3.34 EDUs / Acre	0.41	0.82
Schools/Institutional	6.47 EDUs / Acre	0.41	0.82
Park/Recreational Land	6.47 EDUs / Acre	0.41	0.82
Public Services Facilities	1.94 EDUs / Acre	0.41	0.82

WATER SUPPLY SOURCE

The 1997 preferred water supply alternative consisted of a combination of groundwater and surface water supplies. Groundwater was to be supplied by on-site wells and surface water was to be delivered by the City of Sacramento through a pipeline along Florin Road. The source of the surface water was through the City of Sacramento's Fairbairn Water Treatment Plant. This water could only be used within the portion of the NVSSP area that is within the City's American River Place of Use (ARPOU).

The updated preferred water supply alternative will ultimately meet demands in the western portion of the NVSSP area (west of Bradshaw Road) with surface water, and the eastern portion with groundwater. All facilities will be sized to meet maximum Day Demand. Peak demands will be met by pumping from storage met by groundwater. Maximum-Day demands are estimated to be 2,220 gpm groundwater and 2,900 gpm surface water.

Reliance on local groundwater and existing conjunctive Zone 40 sources within the NVSSP is anticipated through the occupancy of 2,530 equivalent dwelling units (EDU's) towards the end of Phase B development. No more than a cumulative total of 2,530 EDU's in tentative subdivision map lots may be approved within the NVSSP area until either surface water supply consistent with the approved NVS Water Supply Master Plan has been secured, or the SCWA Board of Directors finds that an acceptable alternative supply has been secured.

The following infrastructure components are included in the revised preferred alternative:

- Water Treatment plant site area: 6.0 acres
- Number of Storage Tanks: 2[1]
- Volume of each storage tank : 2.0 mg (4.0 mg total)
- Booster pump capacity: 10,678 gpm peak hour
- Total number of wells: 3

GROUNDWATER COMPONENT

Based on an equivalent daily production of 1,500 gpm per well, three wells will be required to supply the demands in the portion of the NVSSP Area outside the City's ARPOU. Allowing for one well to be taken out of service, the remaining two wells will be designed to produce 2,220 gpm. A single treatment facility will be centrally located with three wells providing water to it. The treated groundwater will be discharged to storage reservoirs located on-site. A booster pump station will then deliver the stored water to the distribution system.

AVAILABLE WATER SUPPLY

Initial water supply may be supplied by an extension of the Elk Grove-Florin Road T-main from existing SCWA facilities. The boundary pressure conditions modeled for Phase A-1 at the proposed initial connection to existing Zone 40 infrastructure are 45 psi as prescribed by SCWA.

The availability of water from the existing system is based on an estimate provided by SCWA. This estimate is subject to change, reflecting ongoing development and increasing water demands outside the NVSSP area. SCWA will re-evaluate available capacity prior to approval of infrastructure improvement plans. Development within the NVSSP area beyond existing water supply will be dependent on timely completion of proposed on-site groundwater treatment plant and associated supply, storage, and pumping facilities.

As Phase A-1 will depend on the construction of a single feed transmission main extending off the existing Zone 40 transmission network, the construction of a fire well within the Phase A-1 development is necessary to supplement emergency water supplies. In accordance with applicable fire code and SCWA requirements, this fire well will need to be operational prior to the storage and/or construction of any combustible materials on-site. When the on-site groundwater treatment facility is completed, this fire well will be converted to a standard municipal production well and connected to the treatment facility.

[1] NVS minimum storage requirements = 1.73 mg. Second future storage tank of 2 mg capacity included as directed by WRD.

Groundwater will be an integral component of the buildout system serving the area. However, groundwater production is limited to 2,220 gpm (sufficient 2,530 EDU's). Surface water will need to be made available for development to exceed 2,530 EDU's.

Groundwater will be extracted from the deep aquifer and then delivered to a treatment facility for removal of iron and manganese. Treatment, storage, and pumping capacities are modeled in this study to accommodate each development phase in accordance with SCWA design standards.

The groundwater treatment facility is to be constructed near the intersections of the CCTC Railroad and Waterman Road, at the west edge of Phase A-1 development (submitted Tentative Map for Vineyard Point) prior to development of Phase A-2.

The 1998 EIR for the NVSSP identified a second groundwater treatment facility with associated wells to be constructed with Phase D, southwest of the intersection of Florin Road and the Vineyard Road extension. This water treatment plant, if needed, would be constructed by SCWA.

SURFACE WATER COMPONENT

The Draft 2002 Zone 40 Water Supply Master Plan dated December 2002 is intended to update previous Zone 40 water supply plans and incorporates terms and conditions for SCWA's water supply through the year 2030 from the recently adopted Water Forum Agreement. The Water Forum Agreement includes a provision for surface water to be obtained from the City of Sacramento for that portion of Zone 40 that lies within the City's ARPOU. This provision is for up to 9,300 acre-feet per year. The NVSSP portion of this supply is approximately 25%. Transmission and treatment of this water will most likely be through the Freeport Regional Water Project. This project consists of a diversion structure on the Sacramento River near the community of Freeport and a raw water conveyance pipeline to the central portion of Zone 40. An 85-MGD (ultimate capacity) surface water treatment facility and treated water conveyance pipeline will be constructed in phases by SCWA in the vicinity of Bradshaw and Florin Roads to supply surface water throughout Zone 40.

As an alternative, SCWA could negotiate the purchase of City of Sacramento ARPOU water and deliver it through the City's Fairbairn or Sacramento River water treatment plants. This system involves purchasing treatment capacity and constructing conveyance facilities from the current City delivery point near Florin Road and Power Inn Road to the location to the location where the surface water would be introduced into the SCWA system. To deliver this water, a transmission main would need to be constructed in Florin Road, from Power Inn Road to Waterman Road. Booster pump capacity as well as additional storage would also be required.

Surface water supply facilities to meet the Specific Plan Area demands within the City's ARPOU will need to ultimately provide 2,900 gpm.

WATER TREATMENT AND STORAGE

GROUND WATER TREATMENT PLANT

Ground water treatment plants within Zone 40 are comprised of water processing facilities combined with both storage and pumping capabilities. Strategic placement of water treatment plants throughout the zone is intended to provide reliable operational pressure and flow in the system. Water is received via raw water pipelines linked to well sites in relatively close proximity to each plant. Construction of facilities within the North Vineyard Station water treatment plant, including storage tanks, pumps, processing systems, etc., may be phased in accordance with the following development-demand thresholds:

Table 12-2
Development/Demand Thresholds

Phase	Cumulative EDUs	Minimum Treatment Capacity (mgd)	Peak-Hour Distribution Capacity (gpm)	Operational Pressure (psi)
A-1	***	N/A	N/A	45*
A-2	1,666	0.98	2,924	50 – 55
B**	2,834	1.67	4,973	50 – 55
C**	4,268	2.52	7,490	50 – 55
D**	5,289	3.12	9,281	50 – 55
E**	6,085	3.59	10,678	50 – 55

* Assumed initial connection to main at Elk Grove-Florin Road T-main.
** Combination of ground and surface water sources.
*** To be determined prior to approval of infrastructure improvement plans.

Construction of groundwater treatment facilities and well sites is an integral part of development within Zone 40. The acquisition of real property in additional to planning and construction of facilities may require substantial time for completion. Real property shall be reserved per the guidelines contained in Chapter 22.50 of the Sacramento County Code and Government Title 7, Division 2, Article 4 (1/03). A site for the proposed NVS groundwater treatment plant, storage tanks, booster pump and other appurtenances has been designated on the Vineyard Point Tentative Subdivision Map on file with the County Planning Department. Phase A-1 development consists entirely of the Vineyard Point Subdivision.

To allow for proper environmental impact evaluation of the proposed water treatment plant and its operation by the County, the NVSSP proponents have had their consultant prepare a "Narrative Description with Preliminary Operation and Construction Mitigation Measures."

GROUNDWATER WELL PLACEMENT CRITERIA

Approximately 85% of water for domestic distribution in the County of Sacramento Zone 40 is supplied by groundwater sources within the district. Well sites are to be situated evenly throughout the district within development projects, as they occur, in accordance with the requirements of SCWA and the Department of Health Services (DHS). Minimum well site setbacks per DHS are as follows:

A. 50 foot separation – Primary drinking water source protection, no sanitary, industrial, storm water main, or leader lines and no house foundations without approved special provisions.

B. 100 foot separation – Secondary drinking water source protection; no sanitary sewer or storm gravity mains, septic tanks, or leach lines without approved special provisions.

C. 200 foot separation – from sanitary or storm sewer force main and/or approved special provisions.

Wells are typically designed with pumping capacities of 1,500 gpm and are considered to operate 18 hours per day. This provides an effective flow of 1,000 gpm over a 24-hour period. Based on these operational parameters, a minimum of three wells will be required to meet groundwater demands. Additional well sites may be required, if deemed necessary by SCWA, to insure long-term system reliability. Well sites and raw water mains are not included in the water distribution modeling. Well capacities and production, per phase, are proposed as follows:

Table 12-3
Well Sites

Phase	Wells Added	Cumulative Wells	Cumulative Well Production Capacity (gpm)	Daily Pumping Capability (mgd)	Average Daily Demand (mgd)
A-1	1*	1	1,500	1.44	0.56
A-2	2	3	3,000**	4.32	1.13

* Fire well upgraded to supply well in Phase A-2

** Two well sites providing 1,500 gpm continuous production with remaining well site for reduncancy to produce an ultimate 3,000 gpm

STORAGE TANK SIZING

Storage tank sizes are calculated as the aggregate total of 4 hours of peak-hour demand minus max-day demand, three hours of fire flow at 3,000 gpm, plus an emergency storage volume equal to 1/3 of the average day demand. Peak-hour demand for sizing storage facilities is the max-day demand multiplied by a peaking factor of 1.8.

Table 12-4
Minimum Storage Volume

Phase	Max-Day Demand (gpm)	Peak-Hour Demand for Storage** (gpm)	1	2		Minimum Storage Volume (mg)
			PHD – MDD x 4 hours (mg)	3,000 gpm FF x 3 hours	1/3 ADD x 3 hours	
A-1*	***	965	0.102	0.540	0.016	0.658
A-2	1,462	2,632	0.281	0.540	0.044	0.865
B	2,487	4,477	0.478	0.540	0.075	1.09
C	3,744	6,739	0.719	0.540	0.112	1.37
D	4,640	8,352	0.891	0.540	0.139	1.57
E	5,339	9,610	1.025	0.540	0.160	1.73

* Assumes initial connection to main at Elk Grove-Florin Road T-main.
** Peak-hour demand for storage is 1.8 times max-day demand.
*** To be determined prior to approval of infrastructure improvement plans.

As identified in the current WMP update (July 9, 2003) the North Vineyard Station requires a minimum storage of 1.73 million gallons. This is an update of the 1997 study that identified a needed volume of 2.3 MG. This reduced volume is based on updated modeling conditions (supply and distribution). The 4 million gallons of storage identified in the current study includes a second future 2 MG storage tank that was included as directed by WRD.

WATER DISTRIBUTION

RAW WATER MAINS

Raw water mains currently being installed in Zone 40 are generally 12 – 18 inches in diameter PVC pipe similar to potable water mains. Raw water mains, per phase, are proposed as follows:

Table 12-5
Raw Water Mains

Phase	Size (in.)	Material	Quantity
A-1	N/A	N/A	N/A
A-2	12	PVC	3,700
B	12	**PVC**	0
C	12	**PVC**	0
D	12	**PVC**	0
E	12	**PVC**	0
Totals			**3,700**

TRANSMISSION MAINS

Transmission mains (T-mains) will be installed incrementally as development progresses within the NVSSP. Transmission main sizes were determined by Zone-40 based on regional system modeling. Approximate T-main pipe lengths and size for each proposed development phase are quantified as follows:

Table 12-6
Transmission Mains

Phase	Quantity (LF)					
	12”	**16”**	**18”**	**24”**	**36”**	**48”**
A-1			2,764	7,986		
A-2			5,391	7,737		
B		657	1,981			
C		7,969	3,344	1,363		
D		4,037				
E	N/A	N/A	N/A	N/A	N/A	N/A
Totals	**N/A**	**12,663**	**13,480**	**17,086**	**N/A**	**N/A**

MAX-DAY DEMAND ANALYSIS

MAX-DAY ASSUMPTIONS/CRITERIA

Max-Day demand for the North Vineyard Specific Plan is based on the anticipated land use and respective average annual demands per EDU both outside and within the ARPOU. ~~The Max-Day values are obtained by multiplying the Average Daily demand by a factor of 2 per Sacramento County Improvement Standards Manual. Max-Day demands are individually entered at respective demand nodes in the WaterCAD® model.~~

~~The Hazen-Williams formula is used in the hydraulic study of the system, using a C-value of 125 for PVC pipe as required by the Sacramento County Improvement Standards Manual. This C-Value is generally considered conservative as it is intended to take into account various minor losses in the system.~~

Table WS-7
Summary of Results for Max-Day Demand

Phase	**Max-Day Demand* (gpm)**
A-1	536.10
A-2	1,461.87
B	2,486.55
C	3,744.90
D	4,640.61
E	5,338.99

CONCLUSIONS

The prior EIR concluded that implementation of the North Vineyard Station Specific Plan Water Master Plan would result in less than significant water supply impacts. However, the implementation of the NVSSP Water Master Plan was contingent on the implementation of the Water Master Plan for Areas Adjacent to the Zone 40 Water Supply Master Plan Update's Study Area, as well as fulfillment of the City of Sacramento American River Place of Use. Until all agreements are in place to wheel "firm" surface water supplies to the Specific Plan area, the project will contribute to the incremental decline in ground water levels. This incremental decline and the dewatering of private wells is a regional issue, beyond the scope of the proposed project. However,

the project would add to the significant adverse cumulative impacts that regional development has on ground water supplies. Compliance with the requirements of the SCWA and the Water Forum Agreement will ensure that impacts are less than significant.

REQUIREMENTS OF THE SACRAMENTO COUNTY WATER AGENCY:

The SCWA requires the following conditions of approval be placed on all tentative maps and vesting tentative maps within the North Vineyard Station Specific Plan Area:

1. That Simple Title ownership or sale agreements for the WTP lands are completed prior to any Tentative Map approvals within the North Vineyard Station Specific Plan area. WTP lands shall be reserved per the guidelines contained in Chapter 22.50 of the Sacramento County Code and Government Title 7, Division 2, Article 4.(1/03).

2. That well sites be identified prior to Tentative map approvals for subdivisions within the North Vineyard Station Specific Plan area and reserved per the guidelines contained in Chapter 22.50 of the Sacramento County Code and Government Title 7, Division 2, Article 4.(1/03).

3. That well sites be reserved on the Final Subdivision Maps of subdivisions within the North Vineyard Station Specific Plan area.

4. That no more than a cumulative total of 2,530 equivalent dwelling units (EDUs) in Tentative Subdivision Map lots may be approved within the North Vineyard Station Specific Plan area until either surface water supply consistent with the approved NVS Water Supply Master Plan has been secured, or the SCWA Board of Directors finds that an acceptable alternative supply consistent with the Zone 40 Water Supply Master Plan has been secured.

Comments were also provided in regards to the Vineyard Creek Tentative Subdivision Map:

1. Destroy all abandoned wells on the proposed project site in accordance with the requirements of the Sacramento County Environmental Health Division. Clearly show all abandoned/destroyed wells on the improvement plans for the project. Prior to abandoning any existing agricultural wells, applicant shall use water from agricultural wells for grading and construction.

2. Prior to tentative subdivision map approval, prepare a Water Supply Master Plan, to the satisfaction of the Sacramento County Water Agency.

3. Prior to tentative subdivision map approval, the Sacramento County Water Agency requires either fee simple title or sale agreements or reservation agreements for a water treatment plant site as identified in the most current approved North Vineyard Station Specific Plan Water Supply Master Plan. In

addition, prior to final map recordation, the affected property owner, future successors or interests shall enter into an agreement with SCWA consistent with Chapter 22.50 of the Sacramento County Code and Government Code Title 7, Division 2, Article 4.

4. The Sacramento County Water Agency (SCWA) will not issue water connection permits or sign improvement plans until adequate water supplies have been secured. In addition, the final map shall not be recorded until the SCWA has secured fee simple title to the North Vineyard Station WTP.

5. Prior to the issuance of any building permits for the project, the project developer/owner shall pay Zone 40 development fees applicable at the time of building permit issuance in accordance with Sacramento County Water Agency Ordinance No. 18.

6. Prior to the issuance of any building permits for the project, the project shall conform to the specific provisions of the Sacramento County Landscape Water Conservation Ordinance (Chapter 14.10 of the Sacramento County Code) to the satisfaction of the County Landscape/Oak Tree Coordinator.

MITIGATION MEASURES:

None required.

13 SEWER SERVICE

INTRODUCTION

McKay and Somps prepared a Revised Sewer Study (July 1, 2002) in conjunction with the Water Quality Division of the Sacramento County Department of Public Works. It is a part of the Phased CIP Financing Plan for the North Vineyard Station Specific Plan (NVSSP).

The sewer study provides background information and refines the master plan for sanitary sewer facilities, providing greater detail along with updated land use and flow data. The study has been revised to facilitate development of the sanitary sewer portion of the Capital Improvement Program for the Specific Plan and provide updated construction cost estimates. Land development in the contributing shed areas will dictate how construction of the trunk system will be phased. Market and economic forces dictate the development phasing.

EXISTING CONDITIONS

Currently, there are no public sewer facilities within the North Vineyard Station Specific Plan area. Existing development within the project site is served by private septic systems. Public sewer service will be required to serve the proposed urban land uses. The NVSSP area lies within the Spheres of Influence of the Sacramento Regional County Sanitation District (SRCSD) and County Sanitation District No. 1 (CSD-1), which provide public sewer service within Sacramento County. CSD-1 provides local sewage collection and transport from its facilities to the regional sewage transmission, treatment and disposal facilities operated by SRCSD. Treated effluent from the Sacramento urban area is ultimately discharged to the Sacramento River at SRCSD's Regional Wastewater Treatment Plant, located approximately six miles southwest of the Specific Plan area near Freeport. SRCSD and CSD-1 are administered by the Water Quality Division of the Sacramento County Public Works Agency, which provides engineering and planning services to these sewer districts and operates and maintains district facilities. In order to receive public sewer service, the NVSSP area must be annexed to SRCSD and CSD-1.

CSD-1 and SRCSD classify sewer pipelines carrying 10 million gallons per day (mgd) or more as "interceptors". Sewer pipes carrying between 1 mgd and 10 mgd are known as "trunks". Sewer pipes carrying less than 1 mgd are referred to as "laterals". The cost of interceptor and trunk facilities are reimbursable or creditable against sewer fees.

There is an existing 108-inch sewer interceptor located in Elk Grove-Florin Road, approximately ½ mile west of the Specific Plan area. However, this interceptor is

nearing capacity. A countywide Sewer System Master Plan, entitled the "Sewerage Facilities Expansion Master Plan" (the SFEMP) is currently being considered for adoption by CSD-1 and SRCSD. The Final Draft was accepted by the Board of Supervisors in November of 2001 and is currently in the final stages of environmental review. The SFEMP uses updated land use information and projections, as well as updated design criteria to analyze capacities of existing facilities and to identify necessary expansions to the sewerage system throughout the Sacramento County Urban Services Area. The flow estimation criteria developed in the SFEMP are used throughout the NVSSP sewer study.

The SRCSD Interceptor System Master Plan calls for a new 108-inch pipeline (Bradshaw/Folsom Interceptor 6A) to be constructed generally along Elder Creek through the Plan Area. This interceptor is needed to relieve the Elk Grove-Florin Interceptor described above. It is also planned to serve future growth in the northeast portion of Sacramento County's Urban Service Area, including the City of Folsom.

Construction of the new Bradshaw 6A Interceptor is expected to extend through the western portion of the Specific Plan in 2004/2005 and will serve the entire Specific Plan area as well as surrounding lands. The Sewer System Shed Map (Plate SE -1) defines all sub-areas contributing flow to the trunk system serving the NVSSP.

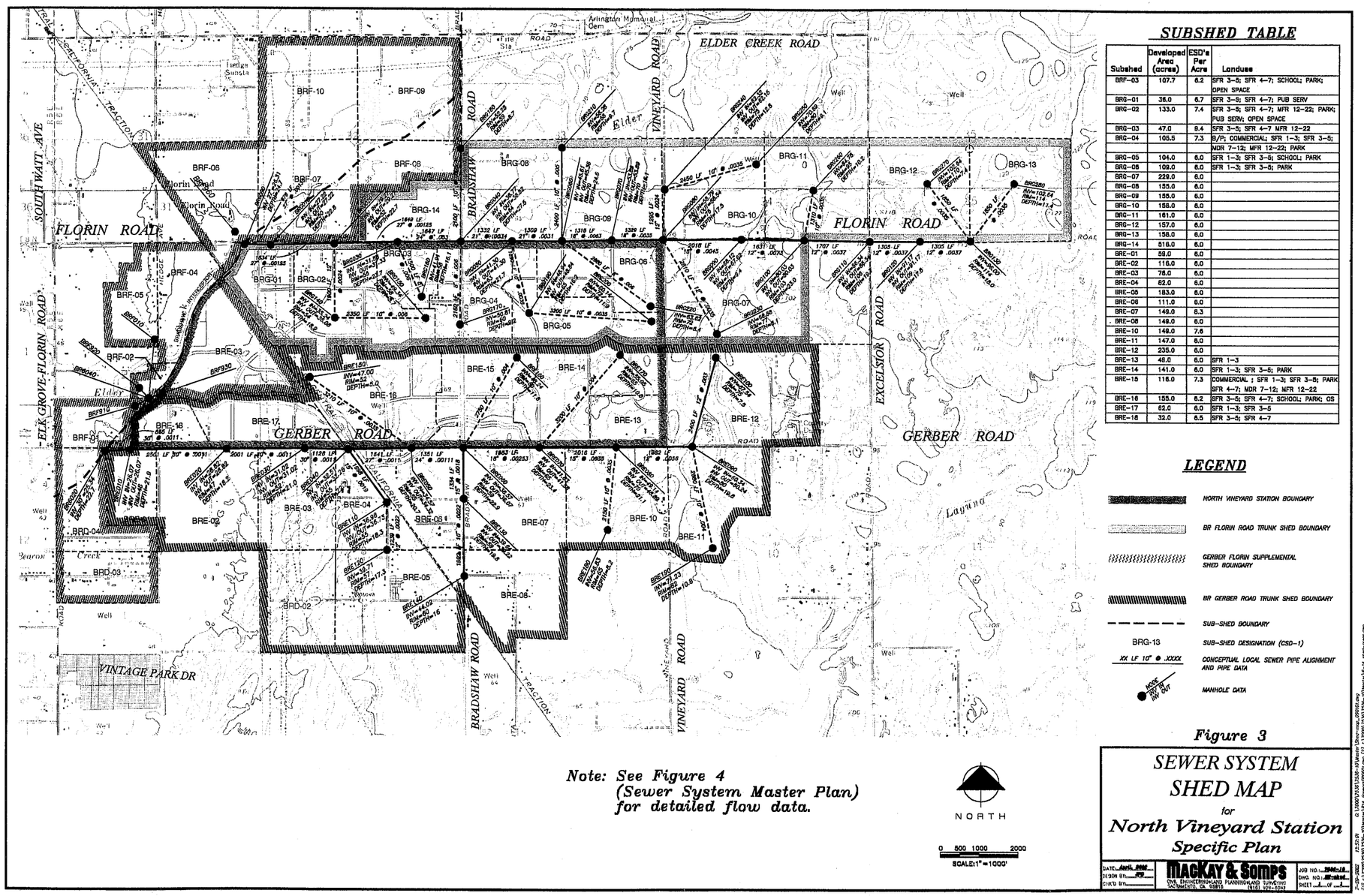
Gravity trunk systems (BR Gerber Road and BR Florin Road) will convey sewage to the new interceptor and have been identified in the Sewer System Shed Map and Master Plan (Plate SE -1 and Plate SE -2). The Sewer System Shed Map also identifies schematic extensions of laterals to the limits of individual sub-areas. The laterals have been included to verify the ability to serve future development by gravity.

PROPOSED SEWER SYSTEM

INTERIM SERVICE

Current development phasing projections predict Phase 1A-1 to begin construction prior to completion of the Bradshaw/Folsom Interceptor extension that will ultimately serve the Specific Plan area. In order to provide interim service to residences built, a sewer line will need to be designed and constructed from the downstream end of the Gerber Road trunk sewer to the existing Central Interceptor located in Elk Grove-Florin Road. All design and construction costs for the interim facilities are to be borne by the developer(s) and are to be considered non-reimbursable.

Plate SE -1
Sewer System Shed Map



SUBSHED TABLE

Subshed	Developed Area (acres)	ESD's Per Acre	Landuse
BRF-03	107.7	6.2	SFR 3–5; SFR 4–7; SCHOOL; PARK; OPEN SPACE
BRF-01	35.0	6.7	SFR 3–5; SFR 4–7; PUB SERV
BRG-02	133.0	7.4	SFR 3–5; SFR 4–7; MFR 12–22; PARK; PUB SERV; OPEN SPACE
BRG-03	47.0	9.4	SFR 3–5; SFR 4–7 MFR 12–22
BRG-04	105.5	7.3	B/P; COMMERCIAL; SFR 1–3; SFR 3–5; MDR 7–12; MFR 12–22; PARK
BRG-05	104.0	6.0	SFR 1–3; SFR 3–5; SCHOOL; PARK
BRG-06	109.0	6.0	SFR 1–3; SFR 3–5; PARK
BRG-07	229.0	6.0	
BRG-08	155.0	6.0	
BRG-09	155.0	6.0	
BRG-10	158.0	6.0	
BRG-11	161.0	6.0	
BRG-12	157.0	6.0	
BRG-13	158.0	6.0	
BRG-14	516.0	6.0	
BRE-01	58.0	6.0	
BRE-02	116.0	6.0	
BRE-03	78.0	6.0	
BRE-04	82.0	6.0	
BRE-05	183.0	6.0	
BRE-06	111.0	6.0	
BRE-07	149.0	8.3	
BRE-08	149.0	6.0	
BRE-10	149.0	7.6	
BRE-11	147.0	6.0	
BRE-12	235.0	6.0	
BRE-13	48.0	6.0	SFR 1–3
BRE-14	141.0	6.0	SFR 1–3; SFR 3–5; PARK
BRE-15	116.0	7.3	COMMERCIAL ; SFR 1–3; SFR 3–5; PARK SFR 4–7; MDR 7–12; MFR 12–22
BRE-16	155.0	6.2	SFR 3–5; SFR 4–7; SCHOOL; PARK; OS
BRE-17	62.0	6.0	SFR 1–3; SFR 3–5
BRE-18	32.0	6.5	SFR 3–5; SFR 4–7

LEGEND

- NORTH VINEYARD STATION BOUNDARY
- BR FLORIN ROAD TRUNK SHED BOUNDARY
- GERBER FLORIN SUPPLEMENTAL SHED BOUNDARY
- BR GERBER ROAD TRUNK SHED BOUNDARY
- SUB–SHED BOUNDARY
- BRG-13 — SUB–SHED DESIGNATION (CSD–1)
- XX LF 10" @ .XXXX — CONCEPTUAL LOCAL SEWER PIPE ALIGNMENT AND PIPE DATA
- XXXX INV IN INV OUT — MANHOLE DATA

Figure 3

Note: See Figure 4 (Sewer System Master Plan) for detailed flow data.

SEWER SYSTEM
SHED MAP
for
North Vineyard Station
Specific Plan

DATE: April 2002
DESIGN BY: RPP
CHK'D BY:

MACKAY & SOMPS
CIVIL ENGINEERING/LAND PLANNING/LAND SURVEYING
SACRAMENTO, CA 95815 (916) 924-5092

JOB NO.: 2944-18
DWG. NO.: RP-sewer
SHEET 1 OF 1

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Plate SE -2
Sewer System Master Plan

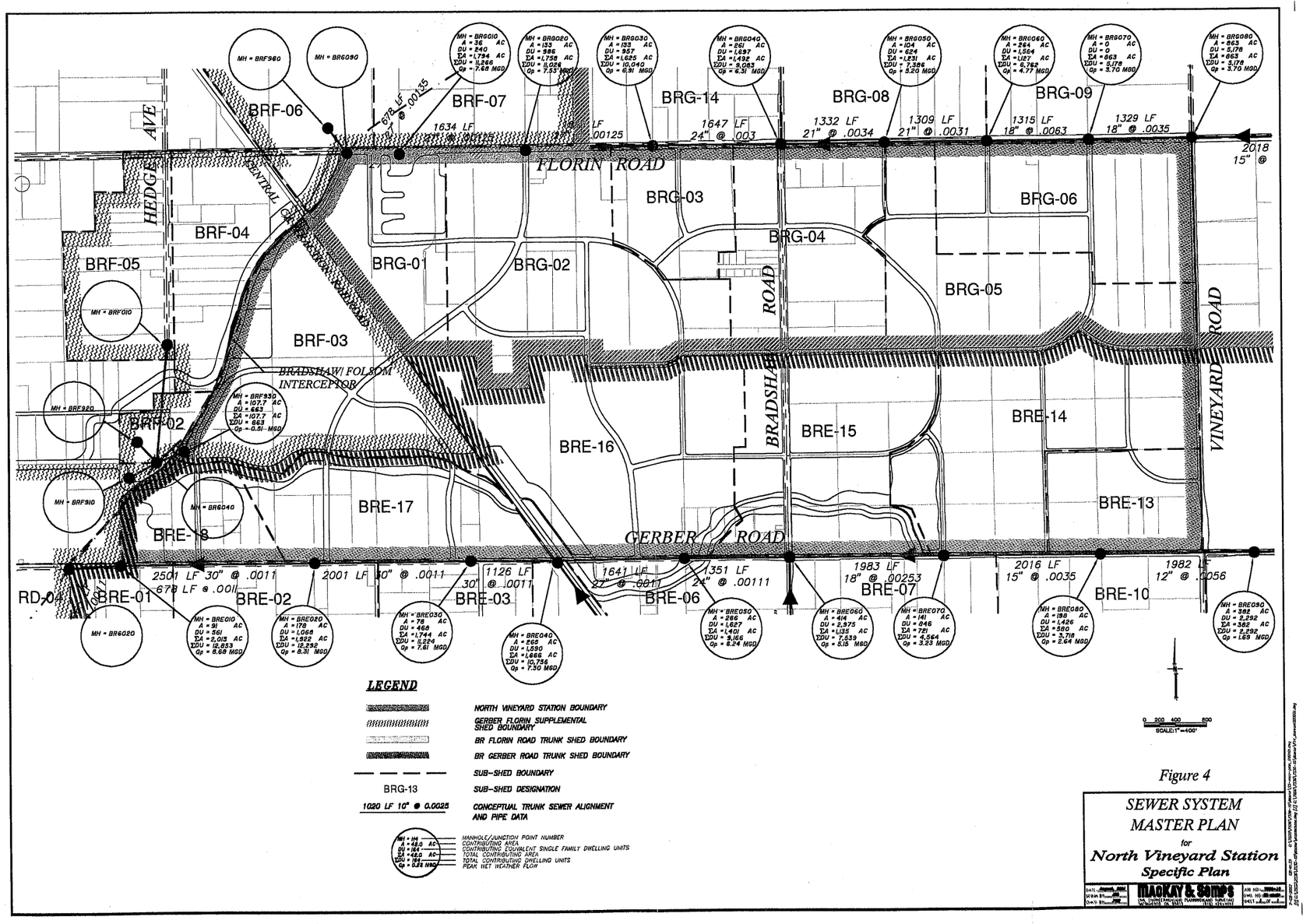


Figure 4

SEWER SYSTEM MASTER PLAN
for
North Vineyard Station Specific Plan

SERVICE AREA LIMITS

The area to be served by the sewer facilities analyzed in the NVSSP Sewer Study extends to areas surrounding the NVSSP. The study area has been divided into three major service sheds: (1) BR Gerber Road Shed, (2) BR Florin Road Shed, and (3) Gerber-Florin Supplemental Shed which are shown on Plate SE -1 and Plate SE -2. Shed designations 1 and 2 correspond to those used by CSD-1. The areas labeled shed 3 do no contribute flow to either the Gerber Road or Florin Road trunks and was separated and renamed for clarity. The overall boundary of the three major sheds corresponds to the area originally established by the Water Quality Division formerly for sheds 1 and 2 and is based on the previous SSES, analysis of topography, and the ability to sewer by gravity.

The direction to accommodate off-site is consistent with the County's General Plan Policy PF-9, which states:

> *"Design trunk and interceptor systems to accommodate flows generated by full urban development at urban densities within the ultimate service area. This could include phased construction where deferred capital costs are appropriate."*

The NVSSP and lands to the south are within the County's Urban Policy boundary, which defines the expected areas of urbanization during the planned twenty-year buildout of the General Plan. Areas to the north and east of the Specific Plan are not within the Urban Policy boundary. However, the General Plan acknowledges that development in Sacramento County will ultimately extend beyond its Urban Policy boundary. This acknowledgment is made in part through inclusion of an Urban Services boundary. This line establishes the area for which infrastructure improvements are to be sized. The Urban Services boundary in this portion of Sacramento County is along the west side of the Deer Creek/Cosumnes River floodplain, roughly six miles east of the NVSSP. Therefore, oversizing to accommodate future development of the service area is consistent with the General Plan.

ANALYSIS PROCEDURES

The development of the revised Sewer Master Plan is a refinement of the original Sewer Master Plan developed for the NVSSP Environmental Impact Report. Preparation for the updated Plan included the following steps

1. Shed maps and technical data from the SESS for the BR Gerber Road and BR Florin Road sheds were obtained from the Water Quality Division of the Sacramento County Department of Public Works, and the requirements for this study were discussed with staff.

2. The SESS data was reviewed and compared with the original sewer report.

3. The schematic backbone collection system was refined using the updated data.

4. Sub-sheds were compared to the updated data, then the areas and laterals refined as required.

5. To estimate sewage flows, land use boundaries were overlaid on the sub-sheds creating sub-areas of single land use within each sub-shed. The acreages of these sub-areas were determined and multiplied by the average number of Equivalent Single-Family Dwellings (ESD's) per acre for their particular land use in order to determine the total number of ESD's entering each pipe system. The criteria and methodology used to estimate flows are described in more detail in the Design Criteria sub-section below.

6. Pipes were sized and inverts calculated using an iterative process. The starting invert elevations of the trunks in Gerber and Florin Roads were set to match the crown elevations of the Bradshaw/Folsom Interceptor. Other lateral pipelines were typically designed to be approximately ten feet deep at the upstream end. At the time this report was prepared, information was not available about the layouts of subdivisions internal to the NVSSP. Therefore, the depth of ten feet at the upstream end was chosen conservatively to allow for the potential of longer routes to the extremities of the system.

ESTIMATION OF SEWAGE GENERATION

The methodology used to estimate sewage flows in trunk and interceptor systems is defined in the Sacramento Sewerage Expansion Study (SSES), and design criteria follow standard Sacramento County guidelines:

- ESD is defined as the flow equivalent for the average wastewater contribution from a single-family dwelling (1 ESD). A multi-family dwelling unit is assumed equivalent to 0.75 ESD. See Table 14-1 for EDS values.

- DWF is Dry Weather Flow; and

- PDWF is Peak Dry Weather Flow; and

- FWWF is Peak Wet Weather Flow; and

- I&I are Infiltration and Inflow.

Table 14-2 shows the Design Flow Criteria and Peaking Factor formula taken from the SSES methodology and used in the flow calculations.

PDWF has been computed based on 310 gpd per ESD entering each trunk pipe system. ESD values used in this analysis are as follows:

Table 13-1
ESD Values

Land Use	ESD Value
Business/Professional	6 Per Acre
Commercial	6 Per Acre
Single-Family Residential	1 Per Dwelling Unit (Minimum 6 Per Acre)
Medium Density Residential 7 – 12	10 Per Acre
Multi-Family Residential 12 - 22	0.75 Per Dwelling Unit (16.5 Per Acre)
School	6 Per Acre
Parks	6 Per Acre
Public Service	6 Per Acre
Open Space/Non-Constrained Areas (including golf courses)	6 Per Acre
Open Space/Constrained Areas (Detention, drainage channels, and powerline corridor)	0
Off-Site/Non-Constrained Areas	Per SESS (Minimum 6 Per Acre)

Table 13-2
Design Criteria

Item	Value
ESD Flow Factor	310 gpd/ESD
Dry Weather Peaking Factor	Curve[a]
I/I (Rainfall-Dependent ~ 10 year storm)	1,000 gpd/acre
Groundwater Infiltration	200 gpd/acre

[a] For average flow greater than or equal to 0.1 mgd, the peaking factor is expressed by the following equation which defines the peaking factor curve:

$$PF = 3.5 – 1.8Q^{0.05}$$

Where

PF = dry weather peaking factor (minum = 1.2)
Q = average flow (mgd)

At the direction of the Water Quality Division, the analysis assumes that areas within the Specific Plan which are planned for less than five dwelling units to the acre may eventually be rezoned to a higher density (six dwelling units per acre on the average). This assumption is consistent with standard Sacramento County sewer infrastructure planning procedures.

PIPE SLOPES

Schematic alignment slopes were generally used within the Specific Plan Area as collector roadway systems are still subject to change at this time. Schematic alignment slopes were typically used outside the boundaries of the Specific Plan, as accurate planning data is not available for these areas. The purpose of using steeper pipe grades in this study for "unplanned" areas is to allow for the potential that pipe lengths may turn out to be longer than anticipated at this time.

Table 13-3
Minimum Pipe Slopes

Pipe Diameter (in.)	Fixed	Schematic	Pipe Diameter (in.)	Fixed	Schematic
8	0.0035	0.00600	21	0.00110	N/A
10	0.0025	0.00350	24	0.00100	N/A
12	0.0020	0.00240	27	0.00100	N/A
15	0.0015	0.00180	30	0.00100	N/A
18	0.0012	0.00140	33+	0.00100	N/A

SYSTEM LAYOUT

The pipelines in Gerber Road and Florin Road are estimated to carry in excess of 1 million gallons per day (mgd) each, and therefore are classified as "trunk" facilities subject to CSD-1 policies for reimbursement of construction costs. Portions of other parts of the system may also reach trunk classification.

IMPACTS AND ANALYSIS

Impact:

The revised sewer study does not include the proposed water treatment facility, which has the potential to contribute a significant amount of effluent into the sewer system. In addition, the proposed increased development densities anticipated from the density bonus program will also result in incremental increases in effluent generation from the

Plan area. The County Sanitation District-1 (CSD-1) staff has indicated the increased flows will necessitate revised sewer studies and the planned sizing of the Gerber Road Trunk would have to be increased. Since the Gerber Road Trunk sewer line has yet to be constructed, these necessary adjustments can be made and the impact of the increased flows is expected to be less than significant. The Gerber Trunk will tie into the Bradshaw 6A and 6B Interceptors, and the Central Interceptor further downstream, where there will be adequate capacity in to handle the increased flows from the water treatment facility and expected small to moderate increases in dwelling units through the density bonus program.

CSD-1 indicated that the revised sewer study need not be included in this Draft EIR, but would be required prior to installation of the Gerber Road Trunk (pers. comm., Matt Morgan, CSD-1, June 15, 2004). Because potential impacts from the water treatment facility on the Gerber Road Trunk will be evaluated prior to installation of the trunk line and sized appropriately, lack of sewer capacity should not be an impediment to future development. Therefore impacts associated with sewer service are considered less-than-significant.

RECOMMENDATIONS/REQUIREMENTS OF CSD-1:

Provide a revised sewer study, to the satisfaction of the County Sanitation District-1 staff, to address the increased sizing needs for the Gerber Road Trunk Sewer in order to adequately accommodate anticipated effluent flows from the proposed water treatment facility and potential increases in dwelling units through the density bonus program.

VINEYARD CREEK

1. Connection to the public sewer system shall be required to the satisfaction of CSD-1. Sacramento County Improvement Standards apply to any on and off-site sewer construction.

2. CSD-1 shall require an approved sewer study prior to the submittal of improvement plans for plan check to CSD-1. Portions of the subject project shall flow into the BR Florin Road Trunk Shed and other portions shall flow into the BR Gerber Road Trunk Shed in accordance with the Sanitary Sewer Study for the North Vineyard Station Specific Plan and the Sewage Facilities Expansion Master Plan.

3. Each lot shall have a separate connection to the public sewer system.

4. In order to obtain sewer service, construction of on and off-site public sewer will be required to the satisfaction of CSD-1.

5. Construction of off-site public trunk sewer will be required in conformance with approved sewer studies and to the satisfaction of CSD-1. In accordance with the

Connection Fee Ordinance, it will be necessary to schedule a meeting to discuss reimbursement requirements with appropriate CSD-1 staff prior to any trunk design.

6. Design of all public sewers shall be coordinated with and approved by CSD-1. Sewer easements may be required. All sewer easements shall be dedicated to CSD-1, in a form approved by the District Engineer. All sewer easements shall be 20 feet in width and ensure continuous access for maintenance.

7. The trunk and collector sewer system for the project will not be accepted for maintenance and building occupancy will not be granted until the downstream sewer system serving the project is also accepted for maintenance.

8. Prior to the recordation of the Final Map the applicant will enter into and record an agreement, in a form approved by the District Engineer and District Counsel of Sacramento Regional County Sanitation District (SRCSD), to require the property owner(s) to reserve lands for acquisition by the District to install District pipelines and facilities for public health purposes and in conformance with the District Master plan. The District shall exercise the agreement and acquire the reserved lands within two years of the completion and acceptance of required public improvements. The area of land will be 75 feet wide, or as determined by SRCSD. The applicant shall coordinate the area required with SRCSD and clearly show the area by meets and bounds on the Final Maps.

9. A Temporary Construction Easement (TCE) will be required along both sides of the future interceptor. The required TCE shall be 42.5 feet wide on each side of the permanent 75-foot wide interceptor easement. The Final Maps shall clearly show the TCE.

10. Construction of any and all improvements, including but not limited to grading, streets, utilities, houses and other structures, within the TCE shall be prohibited until such time the TCE is released by SRCSD unless approved by the District Engineer.

MITIGATION MEASURES:

None required.

14 DRAINAGE AND HYDROLOGY

BACKGROUND

As part of the NVSSP planning process, MacKay & Somps Civil Engineers, Inc. (MacKay & Somps), prepared a Drainage Master Plan (DMP), dated January 30, 1998. A preferred Drainage Plan was identified in the NVSSP DMP. A Capital Improvement Program (CIP) and Financing Strategy were also developed as part of the NVSSP. The CIP and Financing Strategy identified cost estimates for the infrastructure and potential funding sources to serve the NVSSP area. Costs associated with drainage were based upon the Preferred Drainage Plan formulated by MacKay & Somps.

The Sacramento County Department of Water Resources (SCDWR) provided guidance on the scope for an NVSSP Drainage Phasing Study. Subsequently, Borcalli & Associates, Inc. (B&A), on behalf of Lennar Communities, Inc., and U.S. Home Corporation, evaluated drainage facilities required to accommodate development of Phase 1A of the NVSSP consistent with the original objectives of the DMP and the SCDWR's criteria. The results of B&A's evaluation are presented in a report entitled, "Technical Memorandum No. 1, North Vineyard Specific Plan, Drainage Phasing Study." dated April 19, 2000. From the results of B&A's evaluation, it was determined by Lennar Communities and U.S. Home Corporation, in consultation with the SCDWR, that constructing features of the Preferred Drainage Plan to accommodate development of Phase 1A, was not financially feasible.

In the interest of developing a financially feasible plan for phasing development within the NVSSP area, B&A, on behalf of Lennar Communities and U.S. Home Corporation, evaluated phasing alternatives. The results of B&A's work are presented in the report entitled, "North Vineyard Station Specific Plan, Drainage Master Plan, Phasing Concept," dated April 10, 2001. The phasing concept developed by B&A, which included pumping from newly constructed detention basins into unimproved channels on an interim basis, appeared to offer a feasible means of phasing development that would be financially feasible and provide the level of flood protection and mitigation of impacts consistent with Sacramento County's objectives, policies, and standards. The phasing concept outlined in the above-referenced report, would allow deferring the construction of improved drainage channels until sufficient development occurred to generate revenues required to fund the drainage facilities. Since interim pumping of storm drainage was not a component of the Preferred Drainage Plan for the NVSSP area, the concept of interim pumping of storm drainage to phase development was presented to the Sacramento County Board of Supervisors for consideration.

In July 2001, the Board of Supervisors advised SCDWR that interim pumping could be considered in phasing development within the NVSSP area, however, more detailed information was needed before a decision could be made to acceopt the proposed concept.

Although not a part of the original NVSSP DMP document, the policy prohibiting storm drainage pumping within the NVSSP area was introduced by the Sacramento County Board of Supervisors upon adoption of the NVSSP. It was for this provision that B&A prepared the Phasing Concept Report. Upon review of the concept by the SCDWR, and expressed willingness of the Sacramento County Board of Supervisors to consider pumping of storm drainage on an interim basis, B&A was requested to update the DMP and developing drainage plan to support phasing development within the NVSSP area. Accordingly, the purpose of this update is to develop the information necessary for the Board of Supervisors to make a decision on phasing the construction of storm drainage facilities to accommodate development within the NVSSP area. In developing a phasing plan for storm drainage facilities, it was essential to complete construction of the Preferred Drainage Plan facilities as early as possible.

SYNOPSIS OF THE NVSSP DMP

PLAN FORMULATION GUIDELINES

Various policies, standards, and criteria were used as guidelines in formulating the NVSSP DMP. These are as follows:

SACRAMENTO COUNTY POLICIES AND STANDARDS

The Conservation Element of the Sacramento County General Plan presents policies aimed at preserving and protecting the values of natural streams. The policies apply to specific urban stream corridors designated in the General Plan, which include Elder Creek.

Sacramento County's floodplain policies and improvement standards and specifications require that development will not adversely impact flooding and drainage conditions on other properties and must meet the stated master planning objectives of the County's Drainage Master Plan Program and General Plan

SACRAMENTO COUNTY DRAINAGE MASTER PLAN PROGRAM

The Sacramento County Drainage Master Plan Program addresses the long-term drainage and flood control needs of the County, The intent of drainage master planning is to implement cost-effective drainage and flood control systems which:

- Accommodate development
- Provide the objective levels of drainage service and flood control
- Minimize continuing maintenance and operation costs
- Minimize and mitigate flooding, habitat loss, and water quality impacts.

NVSSP DMP

The NVSSP Preferred Drainage Plan meets the objectives, policies, and standards stated below. In no case shall adverse flooding and drainage impacts occur on other properties or the property being developed.

PURPOSE

The stated purpose of the NVSSP DMP is to:

- Identify existing drainage facilities and predicted flooding patterns.
- Analyze alternatives and recommend preferred flood control and conveyance facilities and to mitigate for potential impacts due to development
- Recommend storm water quality management facilities consistent with Sacramento County's Development Management Program.

OBJECTIVES

The stated objectives of the NVSSP DMP are to:

- Provide 10-year gravity drainage service to developing area within the NVSSP area.
- Provide 100-year flood protection to the NVSSP area consistent with Sacramento County's Standards.
- Provide a plan which meets the hydrologic and hydraulic criteria of:
    - No increase in the peak 100-year flow at the City and County limit line downstream of the NVSSP area.
    - No significant out of bank 100-year flows in the existing improved channel downstream of the NVSSP area.
- Provide storm water quality management facilities in accordance with the County's Development Management Program.

HYDROLOGIC AND HYDRAULIC ANALYSES

SCDWR requested an evaluation of the need for Basin E20. B&A's analysis of Basin E20 concluded that Basin E20 was not needed to mitigate downstream impacts from development of the NVSSP area. Basin E20, therefore, is not included in the models developed by B&A for updating the Drainage Master Plan and developing a plan for phasing the drainage facilities.

HYDROLOGIC AND HYDRAULIC CRITERIA

The basis for B&A's modeling and analyses is the result of the hydrologic and hydraulic analyses performed by Mr. Doug Hamilton for Sacramento County, cited in the Background section, and as refined by MacKay & Somps Civil Engineers, Inc., in formulating the Preferred Drainage Plan.

B&A's analyses are consistent with hydrologic criteria established in the report entitled, "Volume 2: Hydrology Standards," of the "Drainage Manual," prepared by Sacramento City/County, dated December 1996. The analysis of all hydraulic structures is based upon the Sacramento County Improvement standards, 1999, as modified by Board Resolution 2001-0265 (March 13, 2001), which provides that storm drains be designed based upon a 10-year hydraulic grade line (HGL) in downstream receiving waters.

SUPPORTING DOCUMENTATION

As development progresses through the NVSSP area, Letters of Map Revision (LOMRs) will be submitted to the Federal Emergency Management Agency (FEMA) to request modifying the existing floodplain, as delineated on current Flood Insurance Rate Maps (FIRMs). FEMA reviews the accuracy of all hydrologic and hydraulic analyses used to determine such changes. With respect to the submittals to FEMA, B&A was informed by SCDWR that all necessary supporting analyses and documentation regarding drainage and flooding related to the NVSSP will be based upon the HEC-1 and UNET modeling performed and accepted by SCDWR.

SCDWR'S MODELS FOR NVSSP AREA

SCDWR developed models for the NVSSP area for three conditions: Existing, Ultimate, and Stand-Alone. For the Elder Creek and Gerber Creek system, the short duration storm was determined to result in the worst-case flooding. Accordingly, the design storms have a 12-hour duration. The three conditions are described below.

EXISTING CONDITIONS

The Existing Conditions models represent conditions in 1997. SCDWR's UNET models for 10-year and 100-year storm events for the Existing Conditions show a broad floodplain within the NVSSP area. During the 100-year event, runoff in Laguna Creek basins upstream of the Central California Traction Rialroad (CCTR) and spills 1,050 cfs into the Gerber Creek Basin east of the CCTR. Immediately west of the CCTR, approximately 400 cfs spills from Gerber Creek over Gerber Road and into the Unionhouse Creek Basin. In the 10-year event, a peak flow of approximately 90 cfs enters Gerber Creek from Laguna Creek, however, no flow enters Unionhouse Creek from Gerber Creek. Presented on Plate DR -1 is the Existing Conditions Subbasin Map.

ULTIMATE CONDITIONS

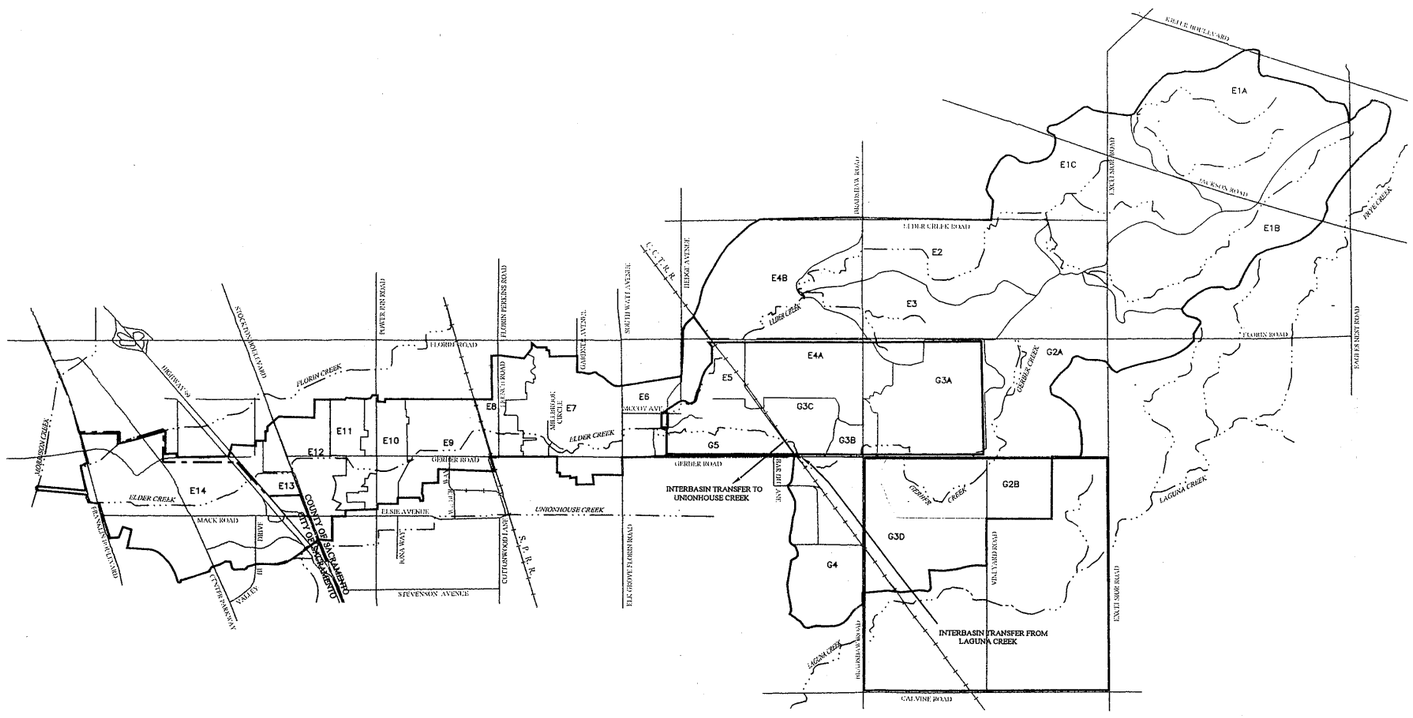
SCDWR's UNET models of the 10-year and 100-year storm events for the Ultimate Conditions represent full build out of the Elder Creek Basin, which includes all of the Gerber Creek Basin. Under the Ultimate conditions, the interbasin spill from Laguna Creek to Gerber Creek does not occur. The time before facilities will be in place to eliminate this spill from Laguna Creek is likely 10 to 15 years.

Presented on Plate DR -2 is the Ultimate Land Use Plan for the NVSSP area. Presented on Plate DR -3 is the Preferred Drainage Plan. The Preferred Drainage Plan includes Basin E20 along Elder Creek downstream of the NVSSP area. The results of B&A's evaluation indicate that Basin E20 is not required for the Ultimate Conditions or Stand-Alone Conditions. B&A modified the Ultimate Conditions model to include available flood storage within Storm Water Detention Basin E24B. Also, the size of the box culverts were increased at Gerber Road Crossing No. 4. The increase in size of the box culverts is required to eliminate increases to peak stages in the creeks for the Stand-Alone conditions. Upon review of the Gerber Road Crossing No. 4 improvements identified in the NVSSP DMP and CIP, it appears the model and documents are now consistent.

STAND-ALONE CONDITIONS

In the Stand-Alone Conditions, the spill from Laguna Creek to Gerber Creek is the same as in the Existing Conditions Model. SCDWR's UNET model for the 100-year storm event for the Stand-Alone Conditions represents Existing Conditions within the Elder Creek and Laguna Creek basins with full build out of the NVSSP area.

Plate DR -1
Elder and Gerber Creeks
Subbasin Map



LEGEND

- NVSSP Boundary
- Vineyard Springs CPA Boundary
- Basin Boundary
- Subbasin Boundary
- E4B Subbasin Name
- Creek
- City/County Limits
- Major Road
- Railroad

SOURCE

Based upon the Sacramento County Department of Public Works, Water Resources Division, "Elder and Gerber Creeks Technical Appendix: UNET Analysis," dated January 1997.

DRAFT

NORTH VINEYARD STATION SPECIFIC PLAN
DRAINAGE MASTER PLAN
UPDATE AND PHASING

ELDER AND GERBER CREEKS
SUBBASIN MAP
EXISTING CONDITIONS

BORCALLI & ASSOCIATES, INC.
SACRAMENTO, CALIFORNIA

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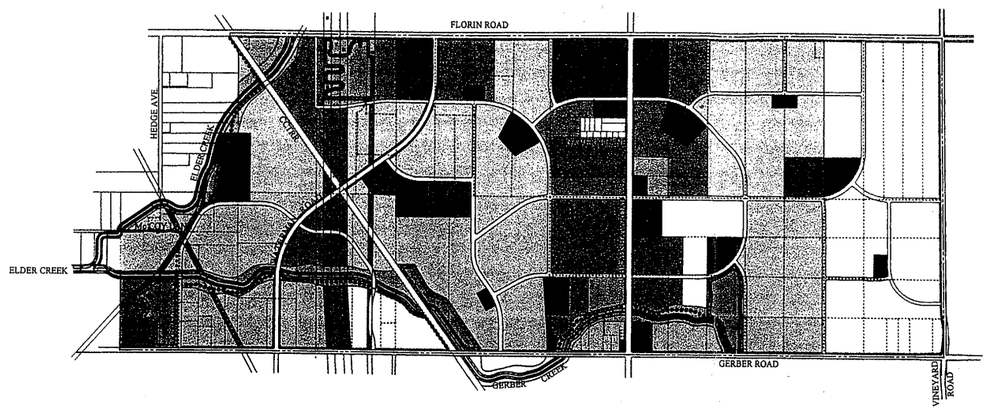
Plate DR -2
Ultimate Land Use



LEGEND

- Business/Professional
- Commercial
- Single Family Residential (1-3)
- Single Family Residential (3-5)
- Single Family Residential (4-7)
- Medium Density Residential (7-12)
- Multi-Family Residential (12-22)
- Landscape Corridor
- Drainage Parkway
- Parkway
- Storm Water Detention Basin
- Open Space
- Public Services
- Schools
- Parks
- Creek
- NVSSP Boundary
- Roads, Railroad
- Property Line, Easement
- Sewer Interceptor
- Trail

NOTE

An eight-acre park facility or two smaller park facilities shall be constructed within the area generally bounded by Passallis Lane (Loop) and Gerber Road. The actual size, configuration, and location of park site(s) will be determined at a later date following the submission and review of tentative maps and development proposal within the general area. Consideration should be given to locating the park site adjacent to Gerber Creek in conjunction with the open space area associated with Gerber Creek. Developing property owners shall contact the Southgate Park and Recreation District to determine the size, configuration, and location of the park site(s).

SOURCE

Based on the "North Vineyard Station Specific Plan," dated Fall 1998

LAND USE SUMMARY

RESIDENTIAL SUMMARY

LAND USE	DENSITY RANGE	DENSITY FIXED COUNT	AREA NET/GROSS		UNITS
Multi-Family Res.	12 to 22	18 (net)	37.8	39.7	680
Medium Density Res.	7 to 12	10 (net)	18.7	19.4	187
Single Family Res.	4 to 7	6 (gross)		204.6	1,227
Single Family Res.	3 to 5	5 (gross)		611.7	3,058
Single Family Res.	1 to 3	2 (gross)		283.4	567
Existing Residential				5.8	13
SUBTOTAL			1,164.6		5,732

NON-RESIDENTIAL SUMMARY

LAND USE	AREA NET/GROSS	
Golf Course	19.8	20.1
Commercial	29.9	30.5
Business/Professional	7.1	7.9
Schools	20.0	21.6
Parks	63.5	68.2
Parkways	---	2.5
Drainage Parkway	---	75.5
Open Space/Storm Water Detention	---	104.7
Landscape Corridors	---	23.2
Public Services	5.3	5.5
Major Streets	---	57.6
Railroad	---	14.6
SUBTOTAL		431.9
TOTAL		1,596.5

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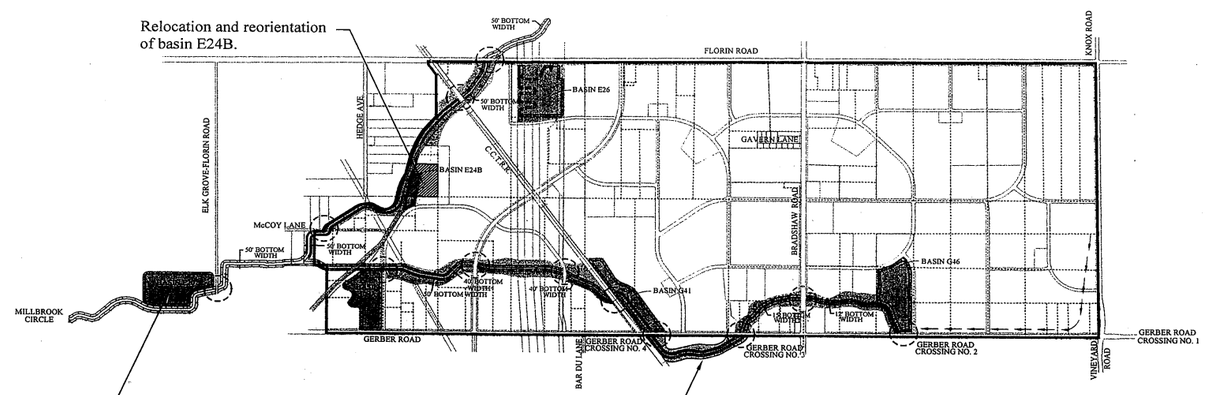
SCALE IN FEET

NORTH VINEYARD STATION SPECIFIC PLAN
DRAINAGE MASTER PLAN
UPDATE AND PHASING

ULTIMATE LAND USE

BORCALLI & ASSOCIATES, INC.
SACRAMENTO, CALIFORNIA

Plate DR -3
Preferred Drainage Plan



NOTE:
Basin E20 was reevaluated under the current phasing study and determined not necessary to mitigate peak stages and flows in the Stand-Alone and Ultimate Conditions. Final determination to be made by Sacramento County.

NOTE:
Spill from Laguna Creek will, in Ultimate Conditions, be eliminated by drainage improvements within the Laguna Creek drainage system and not from facilities implemental as part of the Preferred Drainage Plan.

LEGEND

- Drainage Corridor
- Storm Water Detention Basin
- Channel and Detention Basin Improvements
- NVSSP Boundary
- Road
- Railroad
- Power Line Corridor
- Property Line, Easement
- Proposed Land Use Boundary
- Sewer Interceptor
- Drainage Crossing
- Interim Overflow Path
- Trail

NOTE

The interim overflow path will be required until Gerber Creek is improved upstream of Gerber Road Crossing #1, or another plan is implemented to eliminate the existing spill through the NVSSP area during large storm events.

SOURCE

"Drainage Master Plan for the North Vineyard Station Specific Plan," dated January 30, 1998.

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SCALE IN FEET

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NORTH VINEYARD STATION SPECIFIC PLAN
DRAINAGE MASTER PLAN
UPDATE AND PHASING

PREFERRED DRAINAGE PLAN

BORCALLI & ASSOCIATES, INC.
SACRAMENTO, CALIFORNIA

DRAFT 1/18/02

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FIGURE 4

In the Stand-Alone Condition presented in the report entitled, “Elder and Gerber Creeks Technical Appendix: UNET Analysis,” the weir elevations for the basins are at the elevations included in the Ultimate Conditions model. With the weirs at these elevations, the basins fill in advance of the peak flow, occurring from the Laguna Creek spill. A minimum of one foot of freeboard for the creeks is not achieved for this Stand-Alone Condition. SCDWR did not develop a Stand-Alone Conditions model for the 10-year storm event.

As part of the NVSSP DMP, the Stand-Alone Conditions model was modified to include higher weir elevations to allow the basins to function more effectively with the higher flow that occurs in the Stand-Alone Conditions model. The weir crests would need to be lowered under Ultimate Conditions.

APPROACH

GENERAL

B&A’s approach to formulating and evaluating drainage facilities required to provide adequate drainage and flood protection for new development without adversely affecting existing flooding is discussed in this section. The facilities defined in the Preferred Drainage Plan and the associated hydrologic and hydraulic models provide the basis for B&A’s work.

HYDROLOGY

The hydrologic modeling accepted by SCDWR for drainage within the NVSSP area utilizes runoff hydrographs generated with the HEC-1 modeling program to simulate rainfall and runoff in the Elder Creek Basin. The HEC-1 models developed by Mr. Hamilton, to establish Existing Conditions runoff, were used by B&A to simulate runoff in areas of the basin where no change in land use occurs.

The NVSSP area was essentially “cut out” of the basin model and isolated in separate HEC-1 models to update the runoff within the NVSSP area consistent with changed land use, while leaving the Existing Conditions model outside the NVSSP area unmodified.

The development phases, as defined for the NVSSP area, were used to update the hydrologic subbasins within the NVSSP area. The increased runoff due to each phase of development was incrementally reflected in the hydrologic paramenters for each subbasin for each phase and the SACPRE and HEC-1 programs were utilized to update each subbasin storm runoff. Each runoff hydrograph was imported into the respective UNET model to combine the effects of phased development within the NVSSP area with the surrounding Existing Conditions subbasins.

The NVSSP DMP hydrologic analysis for the Elder Creek Basin includes an input parameter that reflects an overall drainage shed area of 143.6 square miles. This area is not consistent with the area of the actual drainage shed. B&A requested clarification from SCDWR as to whether to use the value currently in the models or to use a revised value. B&A was advised to utilize the actual area contributing upstream of the confluence of Elder Creek and Florin Creek, which is located downstream of the NVSSP area. B&A did a comparative analysis and determined the change in this specific imput parameter resulted in a minimal impact to peak flow and volumes for the same storm. Accordingly, for consistency and expediency, B&A used the existing hydrologic models as created previously.

The original NVSSP DMP included on-line and off-line detention basins. At the locations of the off-line basins, storm runoff discharges directly to the creeks, with a diversion of the flow from the creeks into the nearest downstream water quality/detention basin. This method was problematic for phasing when faced with the hydraulic constraints of draining into unimproved channels with high water surface elevations. B&A's approach differs in that the on-site Basin G41 and Basin G46 are on-line basins with respect to the pipe drainage system in that the pipes discharge directly into the detention basins, allowing all flow from frequent storm events, for which water quality treatment is most critical, to drain through the basins before entering the creeks. To preserve as much flood control volume in the basins as possible, runoff in excess of the capacity of the storm drain pipe system was routed to discharge directly into the creeks. Grading for development will need to be designed accordingly, to ensure that overland conveyance drains directly to the creeks.

Modeling (100-year) to account for the runoff routed through the pipe system and the overland flow concurrent with external runoff in the creeks is complex because flow into the basin through the pipe system is not only limited by the hydraulic capacity of the pipe system (designed for a 10-year event), but may be limited by the downstream water surface, thus volume of water in the basin as well. The water in the basin is affected by the flow out (gravity or pump), as well as the flow in from the creek over the weir. The hydraulic analysis required to accurately evaluate such a complex flow system was beyond the scope of this analyses. For purposes of this analysis, B&A's approach was to use a worst-case scenario to conservatively determine the size of the storage facilities.

Worst-Case Scenario for Creeks

The 10-year developed conditions and 100-year developed conditions hydrographs were modeled utilizing HEC-1. During a 100-year design event, the maximum overland flow and volume assumed to reach the creek directly was estimated by subtracting the 10-year runoff hydrograph from the 100-year runoff hydrograph for each time-step of the hydrograph simulation. This assumes flow only reaches the pond through the pipe system and over the weir from the creek. The flow actually reaching the creeks should by less since the storm drains are designed to carry the 10-year peak flow when the basin contains the entire 10-year storm volume. The local 100-year runoff is generally conveyed within the

channels while the basins are being filled through the pipe system, with only minor flow entering over the weirs from the creeks.

Worst-Case Scenario for Basins

The reciprocal approach was used to estimate the worst-case volumes reaching the basins during the 100-year event. The hydraulic capacity of the pipe system was flow control into the basins. The 100-year subbasin runoff hydrograph was used to direct flow up to the pipe capacity into its respective detention basin. This again is conservative since the basins are also receiving water from the creeks at the same time.

Consequently, both of these worst-case scenarios were input into the UNET model at the same time (i.e., worst-case residual runoff to creeks and worst-case basin volume to basins). This results in a double counting of the same volume in the model. This approach results in slightly oversizing the basins, but has little effect on the peak flow in the creeks since the spill from Laguna Creek, which governs, occurs after the local storm peak has passed and creates the worst-case peak flow conditions in Gerber Creek and in Elder Creek downstream of the confluence.

As noted above, the runoff to the basin and to the creeks was divided only for Basin G41 and Basin G46, along Gerber Creek. Basin E24A functions as an off-line basin until Phase 2, and does not require the application of the above-mentioned methodology. Basin E24B and Basin E26 are designed as on-line basins that receive the entire 100-year storm runoff (i.e., pipe flow and overland flow) from the adjacent NVSSP subbasins in all phases and did not require the application of the methodology described above.

Hydraulics

Storm Drain Pipe System

B&A utilized the *Nolte Method* and Nolte charts in “Volume 2: Hydrology Standards,” of the “Drainage Manual” prepared by the Sacramento City/County to calculate the peak 10-year design flow to size the storm drain pipes.

Manning’s equation was used to calculate the HGL. In accordance with Sacramento County Standards, the HGL is a minimum of 0.5 feet below the proposed drain inlet.

All the storm drain trunks sized by B&A drain into water quality/detention basins. The starting water surface at each detention basin was assumed to be for the volume associated with storing the runoff volume from a 10-year, 24-hour storm. The maximum 10-year basin stage is based upon the flood control pumps being off to reflect a worst-case condition for the fully developed condition. When the pumps are working, the basin elevations will be lower. B&A developed UNET models to determine if any other flow enters the basins from the creeks under the 10-year, 12-hour (maximum peak flow)

phased conditions. Under each of the phases, the channels convey the 10-year creek flow with pumps running, without flow spilling over the weirs into the basins. Thus the detention basins and the creeks are essentially hydraulically disconnected under the 10-year event, except for the pumps or flap-gated gravity outlet pipes.

Detention Basins

To phase development using interim pumping, detention basins will likely require storage volumes greater than identified in the NVSSP DMP. With this understanding, B&A's approach was to keep the creek or channel improvements the same as those identified in the NVSSP DMP, and to increase the detention basin capacity, as necessary, to provide the desired flood control protection and mitigation.

Pumping from the detention basins is at the rate of 10 cfs. In B&A's work in developing the Phasing Concept (April 10, 2001) it was determined that, in the case of a 100-year, 12-hour storm event followed by a local 10-year, 12-hour storm within a day, the available detention basin storage would not be exceeded. This pumping capacity of 10 cfs was, therefore, kept as the criteria in B&A's approach for sizing the detention basins during the phasing of development.

Channel Improvements

By virtue of B&A's approach, as noted above, all the creek channel improvements are the same as defined for the Preferred Drainage Plan. These channels, or portions thereof, were incorporated into the UNET models where improved conveyance was required to mitigate impacts of phased development.

Water Quality Treatment

B&A's approach to water quality treatment of urban runoff differs from the original NVSSP DMP approach. Due to hydraulic limitations relating to the storm drain design discussed above, it was not feasible to divert water from the creek into the basins for water quality treatment in advance of the creeks being excavated to the size and elevation established for the Preferred Drainage Plan.

Therefore, B&A's approach was to direct runoff from developed areas within the NVSSP area through the storm drain pipe system directly to the basins for water quality treatment. Areas within the NVSSP area that are isolated by physical features (I.e., creeks and topography) from larger water quality/detention basins, are assumed to require individual water quality treatment basins of one acre or less. These smaller water quality treatment facilities could be placed at the downstream ends of smaller storm drains, and have overflow weirs that would spill directly into improved channels. These smaller water quality basins are considered "on-site" infrastructure rather than master plan facilities, thus the design is not included as part of this report. Evaluating the hydraulics for each of these isolated areas will have to be addressed as they plan

for development. The aggregate of the land in this category amounts to 142 acres, which represents approximately nine percent of the NVSSP area.

Within the major part of the NVSSP area, the initial runoff is directed to five primary water quality/detention basins that were identified as part of the Preferred Drainage Plan (Plate DR -3). To maximize the available flood control volumes in these basins, while minimizing the footprints of these basins, B&A sized the water quality features as wet water quality basins with the top of the water quality pool at the invert of the adjacent channels when constructed to the ultimate channel section. The wet water quality pond concept has been, and is currently being, implemented within the Sacramento Region including Sacramento County for development similar to that proposed for the NVSSP area. During the interim drainage scenarios, the evacuation pumps will be operated to pump storm water from the basins into the existing channels at higher elevations to maintain the flood control storage volume for the respective basin. When designed, the basins are to be configured to ensure that “short circuiting” of the flow does not occur from the storm drain outlets to the basin outlets.

Currently, Sacramento County has no standard for sizing wet water quality basins, however, after consulting with SCDWR, B&A was advised to size the wet water quality basins utilizing the City of Sacramento Department of Utilities’ “North Natomas Drainage Design and Procedures Manual,” dated July 1998. The City’s standards have been accepted, unofficially, by SCDWR for sizing wet water quality treatment facilities. B&A used the Wet Basin Option “b,” as shown on Figure 6-5, of the “North Natomas Drainage Design and Procedures Manual,” as the basis for sizing and draining water quality volumes. This option allows for the efficient evacuation of water quality volumes and flood control volumes with a submerged outlet pipe (with flap-gate) configuration. Whenever the downstream outlet water surface elevation is lower than the basin elevation, the excess volume will drain effectively.

DRAINAGE FACILITIES PHASING ANALYSIS

DEVELOPMENT PHASING

Development within the NVSSP area is planned to occur in five phases: Phase 1A, Phase 1B, Phase 1C, Phase 2, and Phase 3. The geographic area and location of the respective phases are shown on Plate DR -4. Development within Phase 1A was further refined by the development community into two areas identified as Phase 1A-1 and Phase 1A-2.

These development phases provide the basis for analyzing the phasing drainage infrastructure while meeting Sacramento County’s objectives, policies, and standards.

PHASE 1A

The area of development within the NVSSP area for the initial phase is identified as Phase 1A-1 and Phase 1A-2 on Plate DR -4. For the Phase 1A analysis, these areas were reflected as developed with all remaining areas with the NVSSP area remaining defined as existing land use conditions. The subbasins affected by this phase of development were revised and runoff hydrographs were developed to reflect the increases in runoff associated with this development.

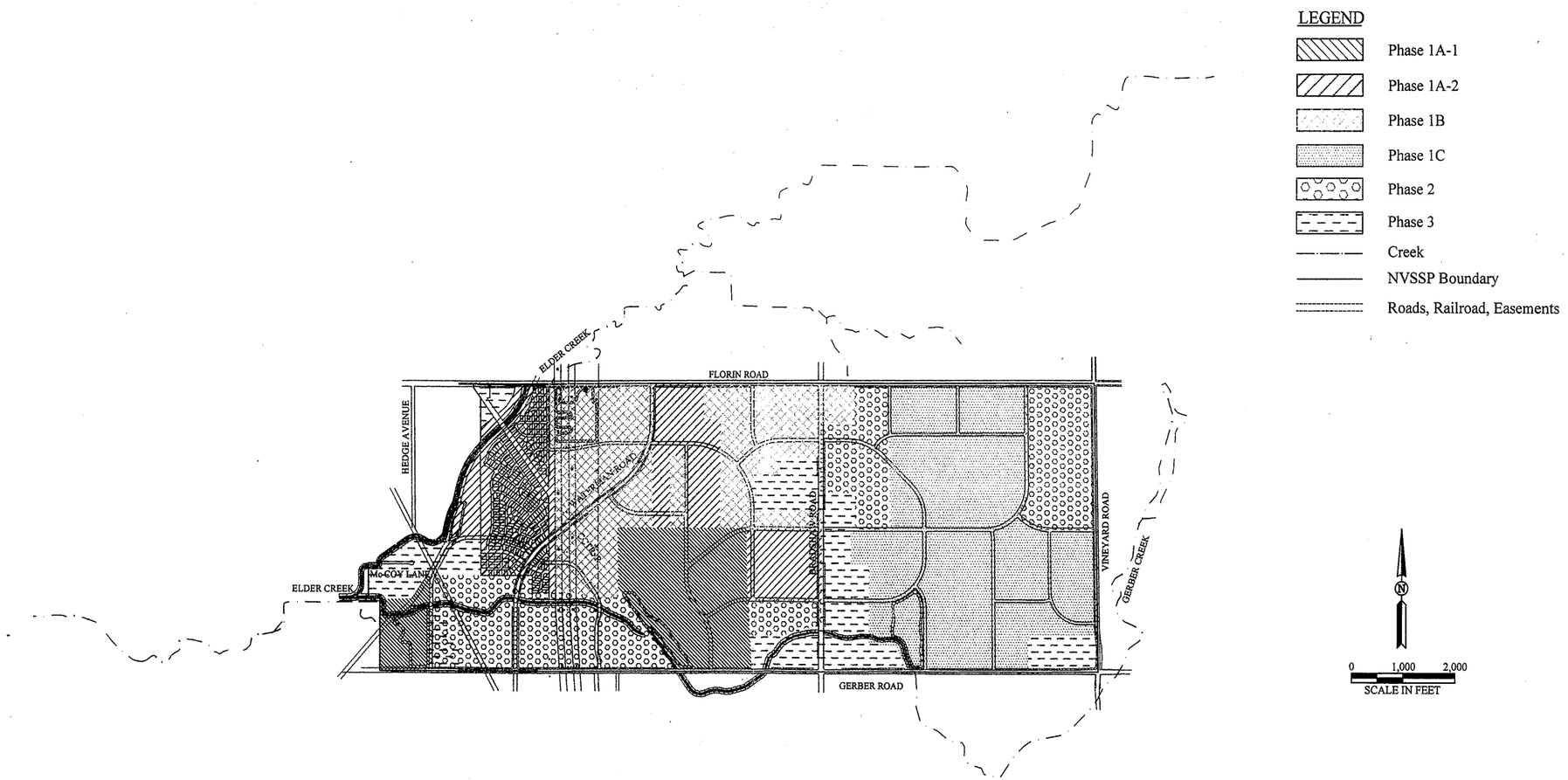
Illustrated on Plate DR -5 is the typical cross section of the detention basins reflecting storage for water quality and flood control.

The drainage facilities required to mitigate flooding impacts (i.e., no increases in peak creek stages or flow) in Elder Creek and Gerber Creek, resulting from development of Phase 1A-1, are identified below.

- Water Quality/Detention Basin G41 with connecting weir structure to Gerber Creek and 10 cfs pump station.
- Water Quality/Detention Basin E24A with connecting weir structure to Gerber Creek and 10 cfs pump station.
- Drainage channel improvements consistent with the Preferred Drainage Plan on Gerber Creek from the CCTR crossing upstream to Gerber Road, adjacent to Basin G41.
- Improved crossing on Gerber Creek at Gerber Road just upstream of Basin G41.

For development of Phase 1A-2, the drainage facilities identified below are required to mitigate impacts in Elder Creek and Gerber Creek.

Plate DR -4
Development Phasing



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NORTH VINEYARD STATION SPECIFIC PLAN
DRAINAGE MASTER PLAN
UPDATE AND PHASING

DEVELOPMENT PHASING

Plate DR -5
Detention Basin Cross Section

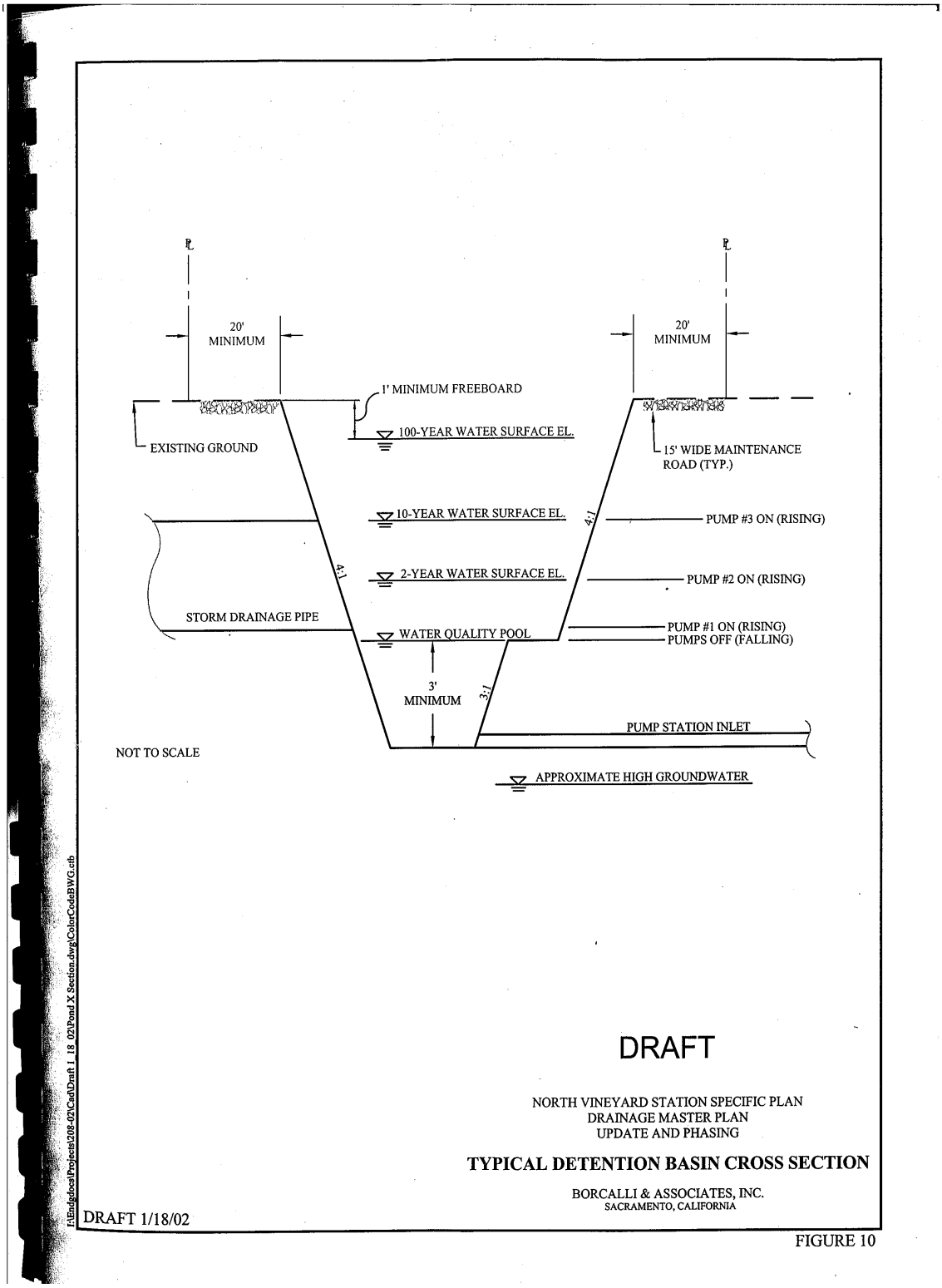


FIGURE 10

- Water Quality/Detention Basin E24B with connecting weir structure to Elder Creek and 10 cfs pump station.
- Detention Basin E26 with 10 cfs pump station and connecting outlet pipe.
- Drainage channel improvements consistent with the Preferred Drainage Plan on Elder Creek from Florin Road downstream to Basin E24B.
- Drainage channel improvements consistent with the Preferred Drainage Plan on Gerber Creek from Waterman Road downstream to Basin E24A.
- Improved crossing on Elder Creek at CCTR.

It is important to point out that the facilities listed above offer mitigation for the development of lands within the Phase 1A areas only. The flood control storage in Basin E24A is utilized to mitigate the impacts of development within Phase 1A along Gerber Creek upstream of the CCTR crossing. The volume created with Basin E24A cannot be used to mitigate the impact of development on other lands without the construction of additional drainage facilities.

It is also important to note that the Waterman Road crossing in the Phase 1A plan is proposed at the size shown to convey flow under Ultimate Conditions. After consultation with Sacramento County staff, this crossing was evaluated for conveyance of the 10-year event without overtopping. Channel improvements are required downstream of the crossing to mitigate the impact of spilling more water over Gerber Road to Unionhouse Creek. The crossing, however, does not convey the interim 100-year flow, which includes the spill flow from the Laguna Creek Basin. In the interim, the Waterman Road crossing will be overtopped from a storm event between a 10-year and 100-year event. Under Ultimate Conditions, Waterman Road is not overtopped.

In Phase 1A, the majority of the proposed drainage facilities are consistent with the Preferred Drainage Plan facilities. The drainage facilities required during the interim that are not part of the Preferred Plan are the pump stations for Basin G41 and Basin E24A, which are required for Phase 1A-1 and the pump stations for Basin E24B and Basin E26, which are required for Phase 1A-2. The overflow weir structures connecting the channels to the basins are constructed at interim elevations that are higher than necessary for Stand-Alone and Ultimate Conditions. Under Stand-Alone and Ultimate Conditions, the weirs will need to be lowered.

Presented on Plate DR -6 and Plate DR -7, respectively are the residual 100-year floodplains from implementing the respective phased drainage facilities to accommodate the planned development. Presented on Plate DR -8 and Plate DR -9 are the maximum water surface profiles along Elder Creek with the development and associated drainage facilities for the respective phases completed.

PHASE 1B

Phase 1B is defined as the areas within the NVSSP area that are designated for development following development of Phase 1A. The Phase 1B area is shown on Plate DR -4. All hydrologic and hydraulic evaluation of drainage requirements for Phase 1B presupposes all lands within Phase 1A are already developed.

No drainage facilities are required in addition to those identified for Phase 1A to mitigate the flooding impact in Elder Creek and Gerber Creek as a result of development within the Phase 1B area.

Presented on Plate DR -10 is the residual floodplain following development of Phase 1B, and construction of the Phase 1B drainage facilities. Presented on Plate DR -11 is the maximum water surface profile along Elder Creek with the Phase 1B development and associated drainage facilities completed.

PHASE 1C

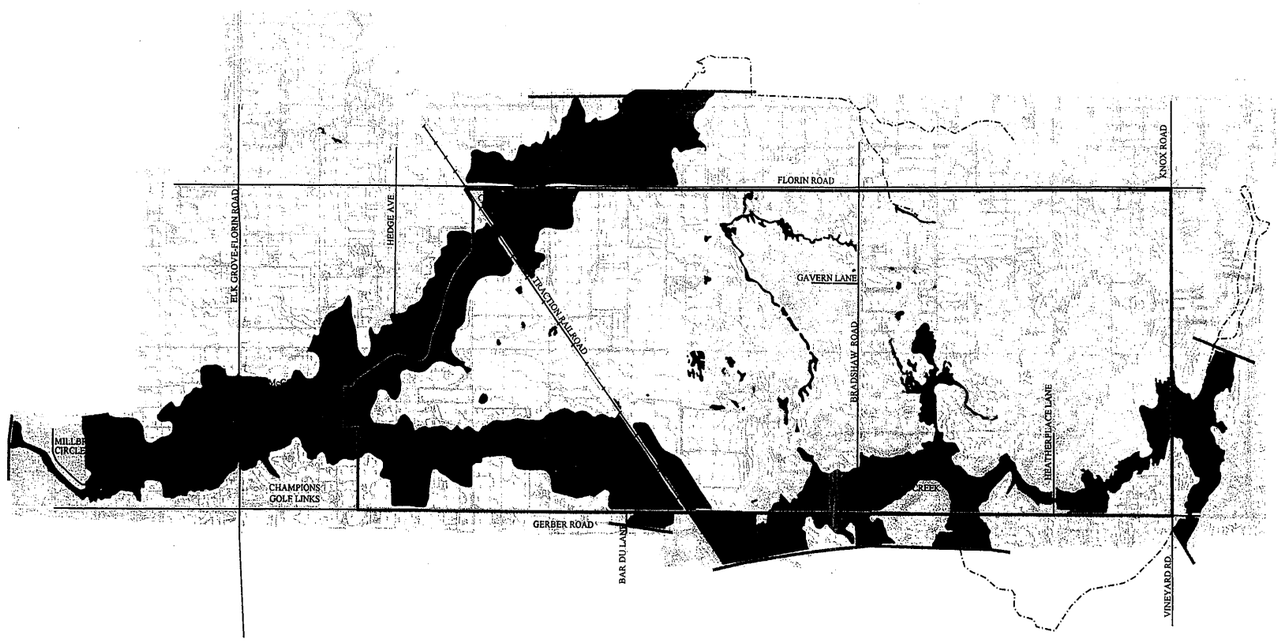
The area identified for development as Phase 1C is presented on Plate DR -4. The majority of the land identified as Phase 1C is tributary to Basin G46. All hydrologic and hydraulic analyses performed to mitigate flooding impacts for Phase 1C, presuppose all development identified for previous phases has occurred.

The drainage facilities required in addition to those previously listed under Phase 1A and Phase 1B to mitigate the flooding impact in Elder Creek and Gerber Creek, resulting from development within the Phase 1C area, are identified below.

- Detention Basin G46 with connecting weir structure to Gerber Creek and 10 cfs pump station.

Presented on Plate DR -12 is the residual floodplain following development of Phase 1C, and construction of the Phase 1C drainage facilities. The pump station at Basin G46 is an interim facility that is not part of the Preferred Drainage Plan. The overflow weir connecting Basin G46 with Gerber Creek is constructed at an interim elevation and will need to be lowered under Ultimate Conditions. Presented on Plate DR -13 is the maximum water surface profile along Elder Creek with the Phase 1C development and associated drainage facilities completed.

Plate DR -6
Phase 1A-1 Residual 100-Year Floodplain



LEGEND

- 100-Year Floodplain (UNET Model)
- Vernal Pool
- Seasonal Wetland
- Stock Pond
- NVSSP Boundary
- Creek
- Major Road
- Railroad
- Limit of Floodplain Mapping

NOTE

The 100-year floodplain is based upon Stand-Alone Conditions.

SOURCE

The wetland delineation is based upon the "North Vineyard Station Specific Plan Technical Appendix: Biotic Resources," prepared by Sugnet and Associates Environmental Consultants, dated May 3, 1996.

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SCALE IN FEET

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NORTH VINEYARD STATION SPECIFIC PLAN
DRAINAGE MASTER PLAN
UPDATE AND PHASING

PHASE 1A-1
RESIDUAL 100-YEAR FLOODPLAIN

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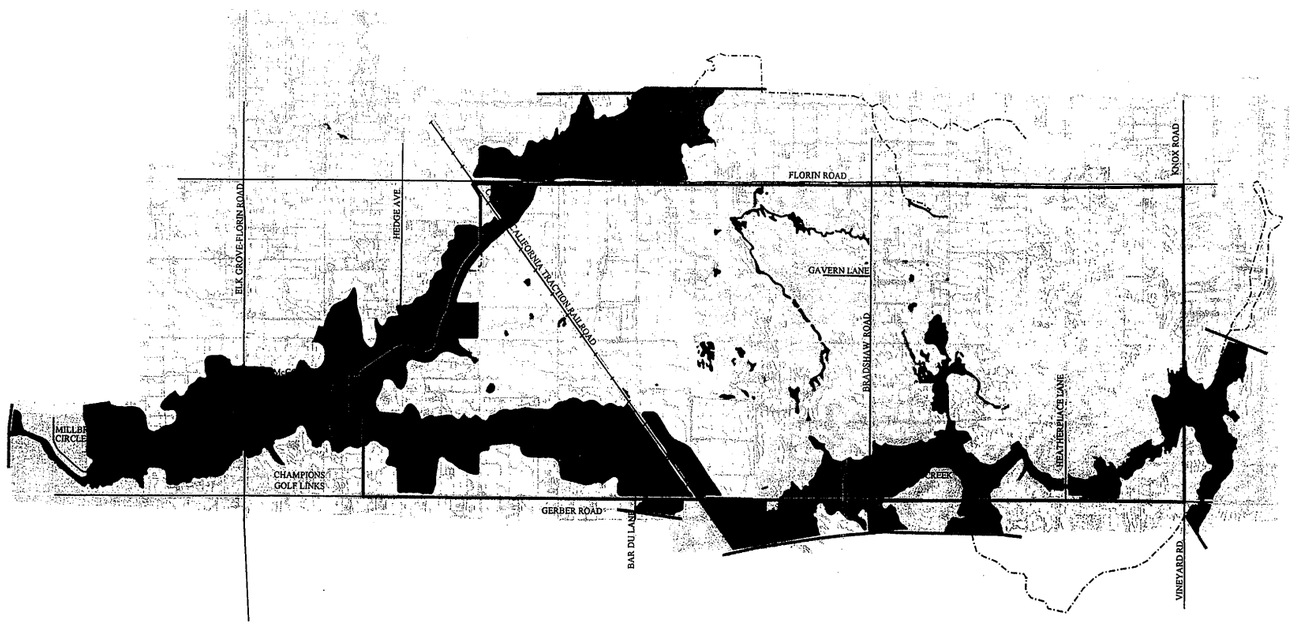
Plate DR -7
Phase 1A-2 Residual 100-Year Floodplain



LEGEND

- 100-Year Floodplain (UNET Model)
- Vernal Pool
- Seasonal Wetland
- Stock Pond
- NVSSP Boundary
- Creek
- Major Road
- Railroad
- Limit of Floodplain Mapping

NOTE

The 100-year floodplain is based upon Stand-Alone Conditions.

SOURCE

The wetland delineation is based upon the "North Vineyard Station Specific Plan Technical Appendix: Biotic Resources," prepared by Sugnet and Associates Environmental Consultants, dated May 3, 1996.

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SCALE IN FEET

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NORTH VINEYARD STATION SPECIFIC PLAN
DRAINAGE MASTER PLAN
UPDATE AND PHASING

PHASE 1A-2
RESIDUAL 100-YEAR FLOODPLAIN

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Plate DR -8
Elder Creek Maximum Water Surface Water Profile
Phase 1A-1

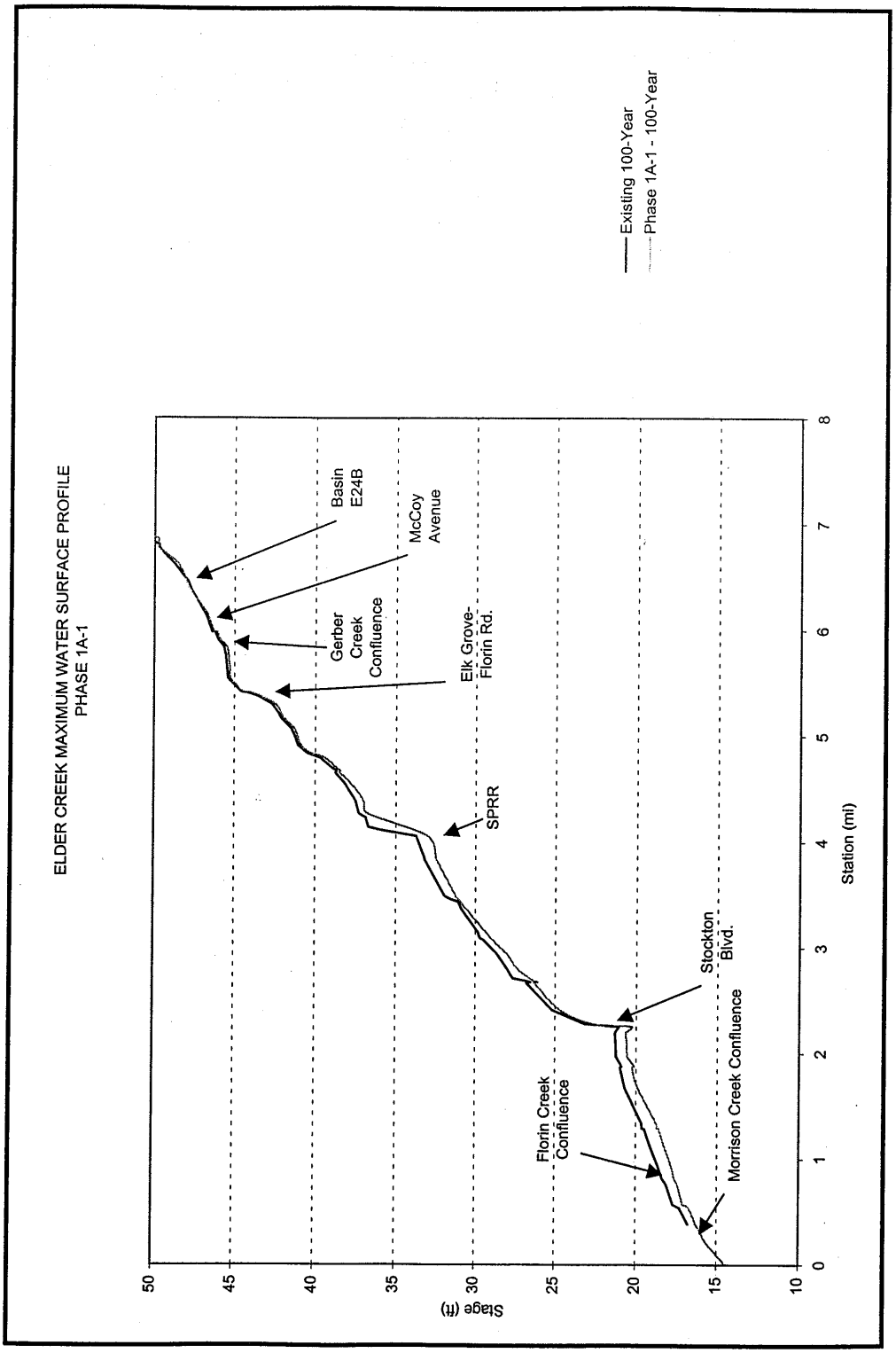


Plate DR -9
Elder Creek Maximum Water Surface Water Profile
Phase 1A-2

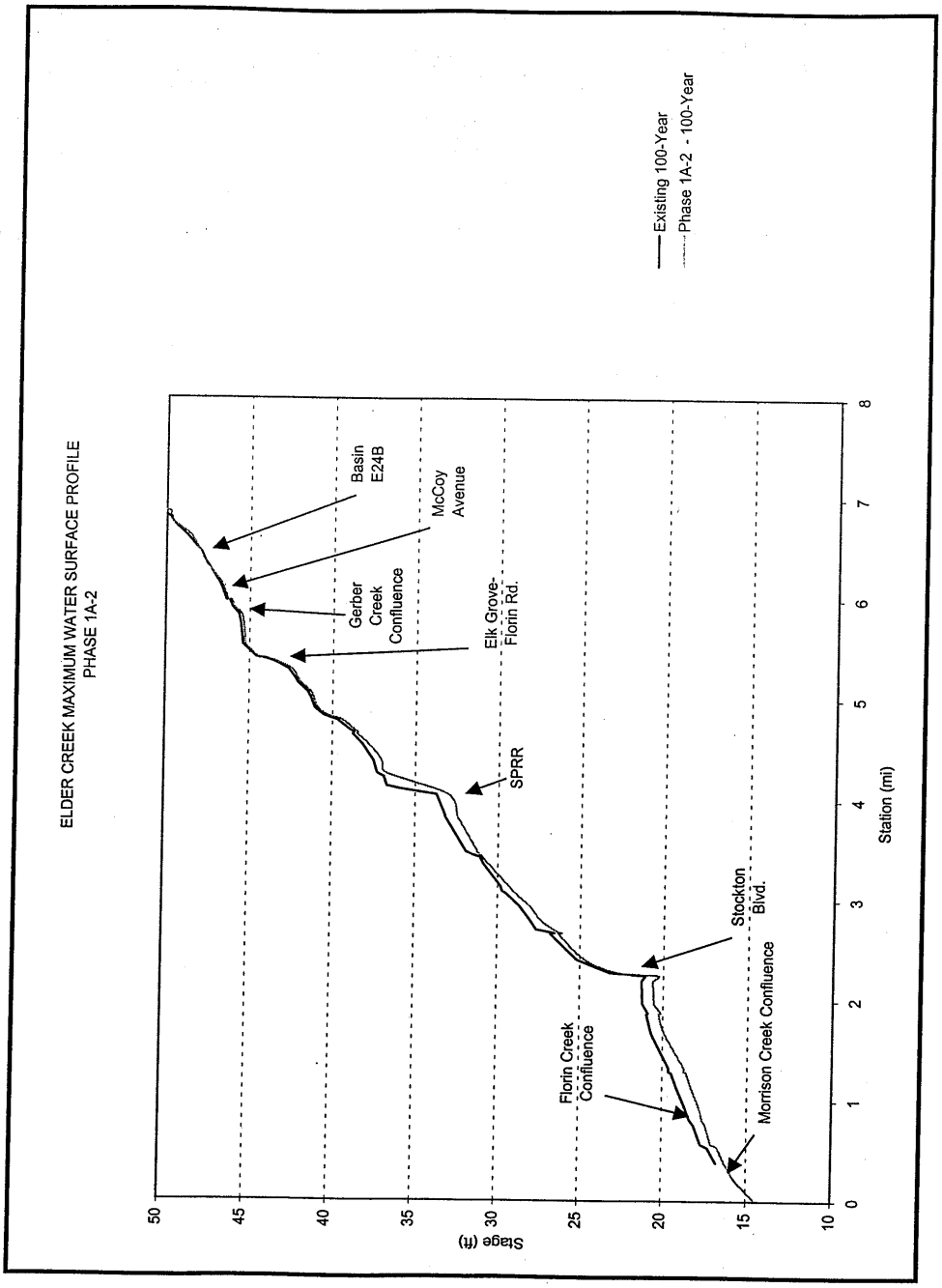
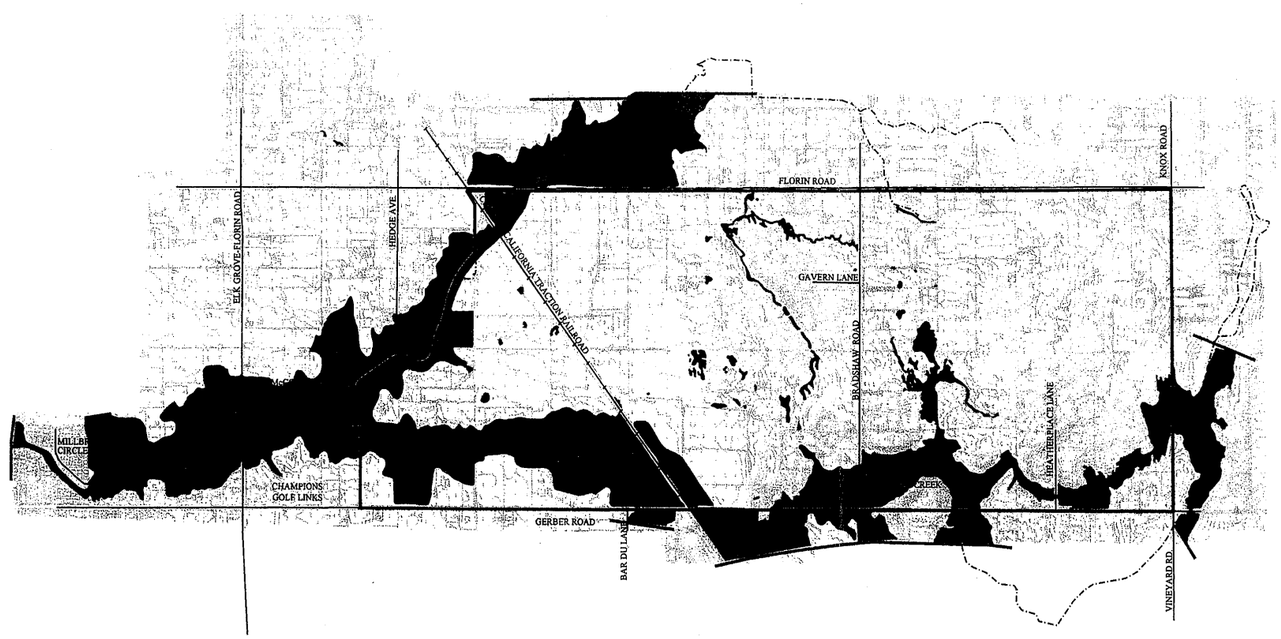


Plate DR -10
Phase 1B Residual 100-Year Floodplain



LEGEND

- 100-Year Floodplain (UNET Model)
- Vernal Pool
- Seasonal Wetland
- Stock Pond
- NVSSP Boundary
- Creek
- Major Road
- Railroad
- Limit of Floodplain Mapping

NOTE

The 100-year floodplain is based upon Stand-Alone Conditions.

SOURCE

The wetland delineation is based upon the "North Vineyard Station Specific Plan Technical Appendix: Biotic Resources," prepared by Sugnet and Associates Environmental Consultants, dated May 3, 1996.

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SCALE IN FEET

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NORTH VINEYARD STATION SPECIFIC PLAN
DRAINAGE MASTER PLAN
UPDATE AND PHASING

PHASE 1B
RESIDUAL 100-YEAR FLOODPLAIN

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Plate DR -11
Elder Creek Maximum Water Surface Profile
Phase 1B

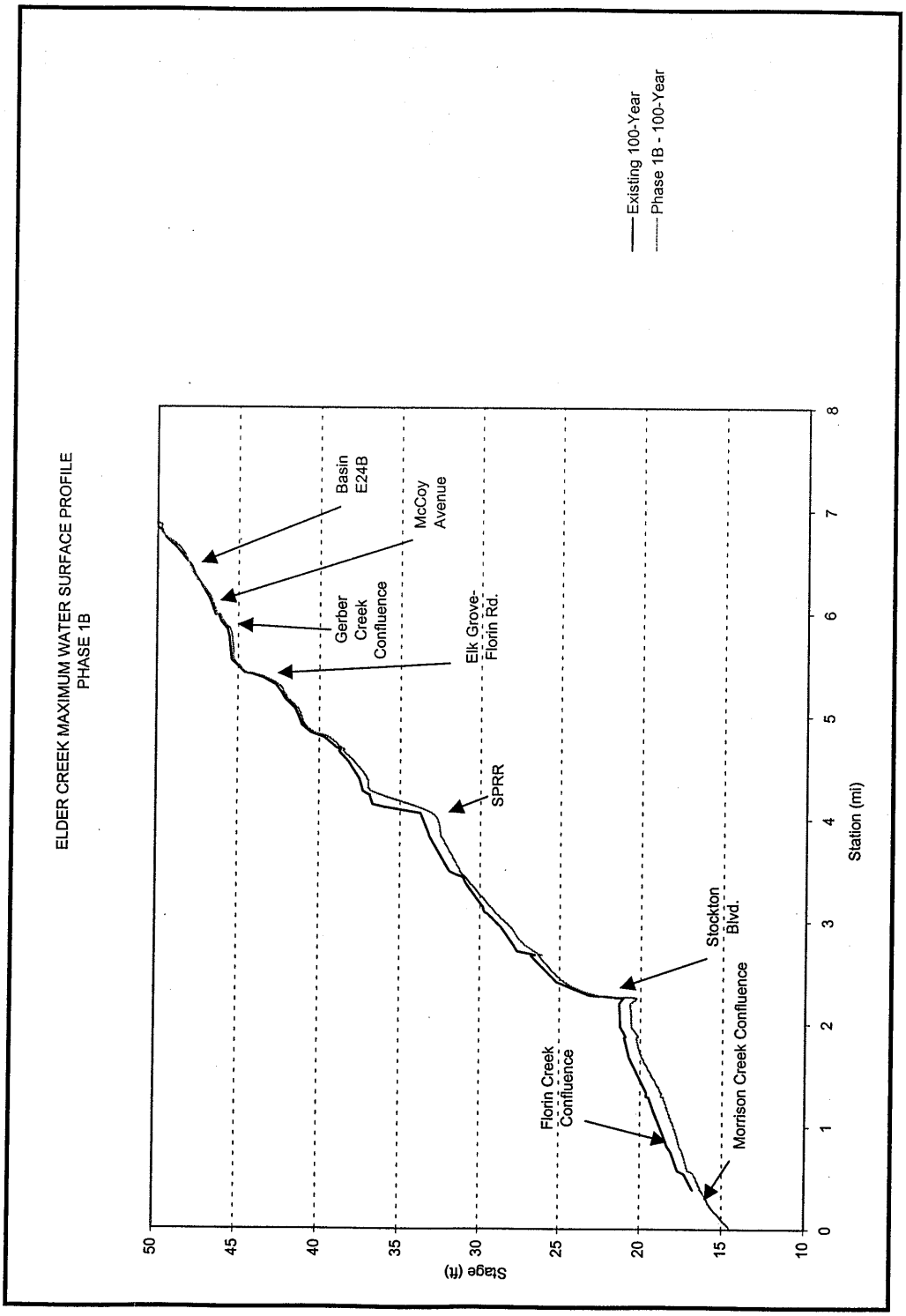
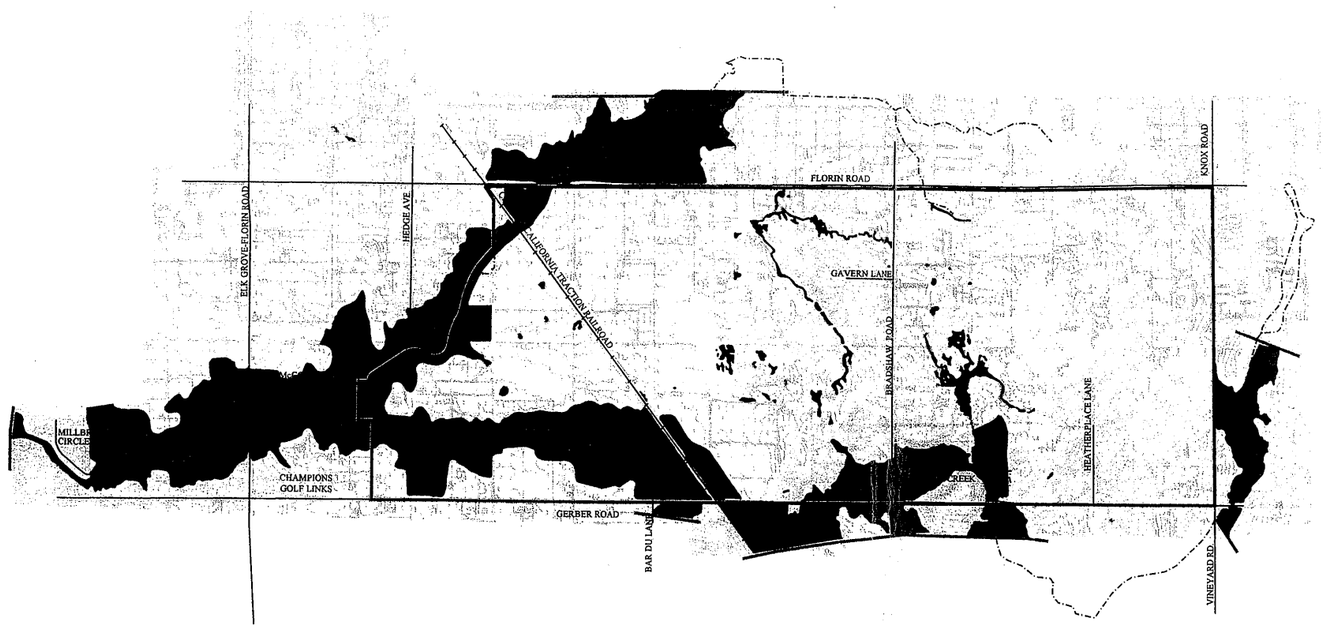


Plate DR -12
Phase 1C Residual 100-Year Floodplain



LEGEND

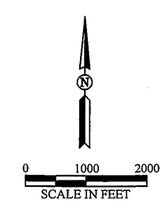
- 100-Year Floodplain (UNET Model)
- Vernal Pool
- Seasonal Wetland
- Stock Pond
- NVSSP Boundary
- Creek
- Major Road
- Railroad
- Limit of Floodplain Mapping

NOTE

The 100-year floodplain is based upon Stand-Alone Conditions.

SOURCE

The wetland delineation is based upon the "North Vineyard Station Specific Plan Technical Appendix: Biotic Resources," prepared by Sugnet and Associates Environmental Consultants, dated May 3, 1996.



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NORTH VINEYARD STATION SPECIFIC PLAN
DRAINAGE MASTER PLAN
UPDATE AND PHASING

PHASE 1C
RESIDUAL 100-YEAR FLOODPLAIN

Plate DR -13
Elder Creek Maximum Water Surface Profile
Phase 1C

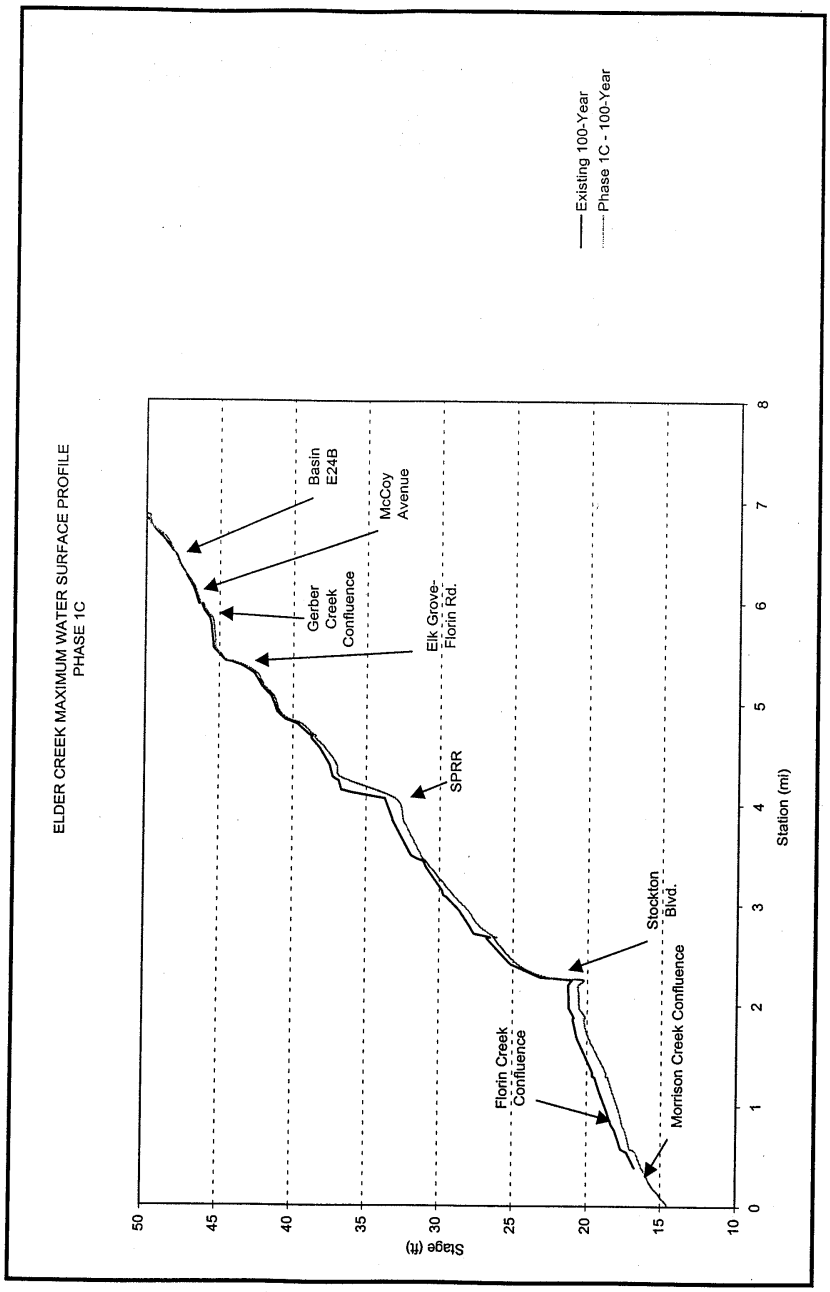


FIGURE 18
1/18/02

PHASE 2

The area identified for development as Phase 2 is presented on Plate DR -4. The majority of land included in Phase 2 is tributary to Basin E24A and Basin G46, which would be constructed in Phase 1A and Phase 1C, respectively. All hydrologic and hydraulic analyses performed to mitigate flooding impacts for Phase 2, presuppose all development within previous phases has already occurred.

It is important to note here that Phase 2 development and drainage impacts resulting therfrom, could be mitigated using the phasing concept using detention and interim pumping, as proposed for Phase 1A, Phase 1B, and Phase 1C. It is anticipated, however, that development occurring in the earlier phases, together with development of Phase 2, will generate funds sufficient to commence construction of facilities outlined in the Preferred Drainage Plan. Accordingly, in keeping with the commitment to Sacramento County to construct the Preferred Drainage Plan facilities as early as possible, the analysis for Phase 2 is aimed at identifying features of the Preferred Drainage Plan that result in mitigation commensurate with the impacts resulting from Phase 2 development.

Following the above noted approach, the drainage facilities required, in addition to those previously listed under Phase 1A, Phase 1B, and Phase 1C, to mitigate the flooding impact in Elder Creek and Gerber Creek, as a result of development within the Phase 2 area, are identified below.

- Drainage channel improvements consistent with the Preferred Drainage Plan on Elder Creek from Basin E24B, downstream to Millbrook Circle.
- Drainage channel improvements consistent with the Preferred Drainage Plan on Gerber Creek from Waterman Road upstream to CCTR, and downstream of Basin E24A to the confluence with Elder Creek.
- Removing the 10 cfs pump station at Basin E24A from flood control service.
- Improved crossing on Elder Creek at Elk Grove-Florin Road.
- New crossing on Gerber Creek for Passalis Lane East.
- New crossing on Gerber Creek or Passalis Lane West.

All Phase 2 drainage facilities are permanent.

Presented on Plate DR -14 is the residual floodplain from implementing the respective drainage facilities to accommodate the planned development. Presented on Plate DR -15 is the maximum water surface profile along Elder Creek with the Phase 2 development and associated drainage facilities completed.

PHASE 3

The area identified for development as Phase 3, the final phase of the NVSSP area, is presented on Plate DR -4.

At this point in development of the NVSSP area, it is assumed that funding is sufficient to construct the remaining elements of the Preferred Drainage Plan. Concurrently, the interim facilities constructed in Phase 1A, Phase 1B, and Phase 1C, namely pump stations, would be physically removed or designated to a function only for maintenance f the water quality basin.

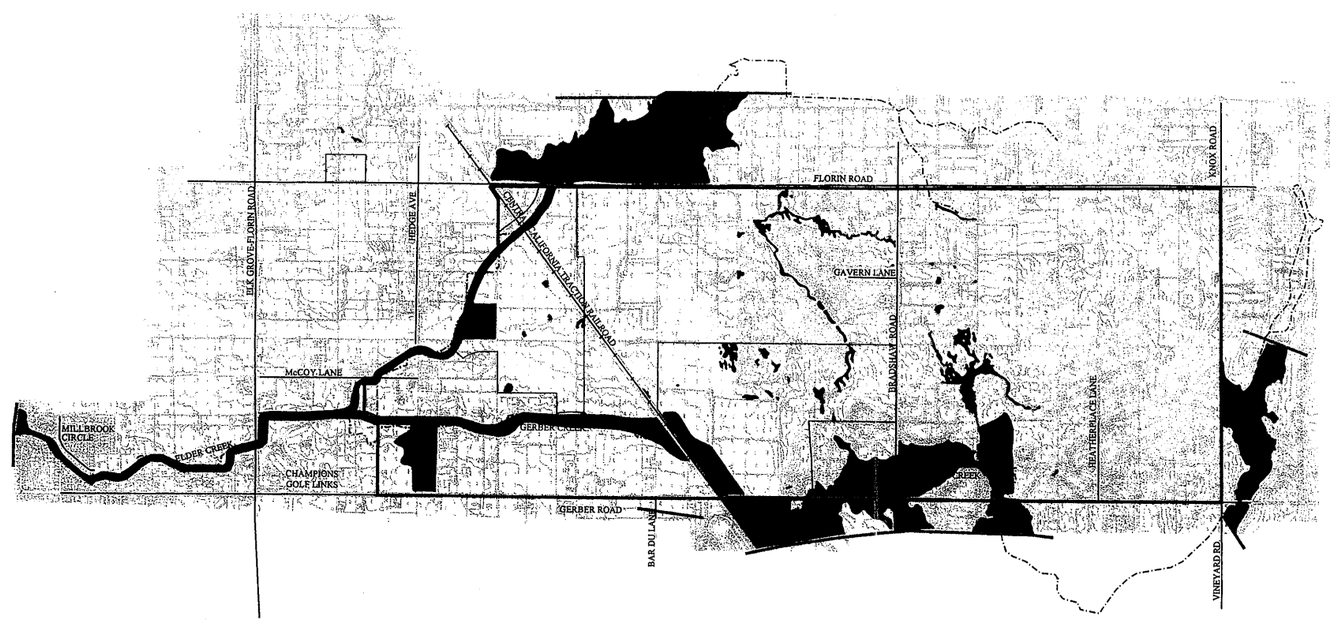
The Preferred Drainage Plan will be fully implemented at this phase of development. The residual floodplain, at this point, will be confined to the creek channels adjacent to and downstream of the NVSSP area for both Ultimate Conditions and Stand-Alone Conditions.

Presented on Plate DR -16 is the residual floodplain from implementing the respective drainage facilities to accommodate the balance of the planned development. Presented on Plate DR -17 is the corresponding maximum water surface profile along Elder Creek with the Phase 3 development and associated drainage facilities completed.

Presented on Table 14-1 is a summary of the detention basin parameters at Phase 3, under the Stand-Alone Conditions. At the point in time when Ultimate Conditions exist, the detention basin parameters will be modified slightly, primarily with respect to weir elevations. The detention basin parameters for the Ultimate Conditions are presented in Table 14-2.

The spill from Laguna Creek will not be eliminated by virtue of constructing the Preferred Drainage Plan facilities.

Plate DR -14
Phase 2 Residual 100-Year Floodplain



LEGEND

- 100-Year Floodplain (UNET Model)
- Vernal Pool
- Seasonal Wetland
- Stock Pond
- NVSSP Boundary
- Creek
- Major Road
- Railroad
- Limit of Floodplain Mapping

NOTE

The 100-year floodplain is based upon Stand-Alone Conditions.

SOURCE

The wetland delineation is based upon the "North Vineyard Station Specific Plan Technical Appendix: Biotic Resources," prepared by Sugnet and Associates Environmental Consultants, dated May 3, 1996.

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SCALE IN FEET

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NORTH VINEYARD STATION SPECIFIC PLAN
DRAINAGE MASTER PLAN
UPDATE AND PHASING

PHASE 2
RESIDUAL 100-YEAR FLOODPLAIN

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Plate DR -15
Elder Creek Maximum Water Surface Profile
Phase 2

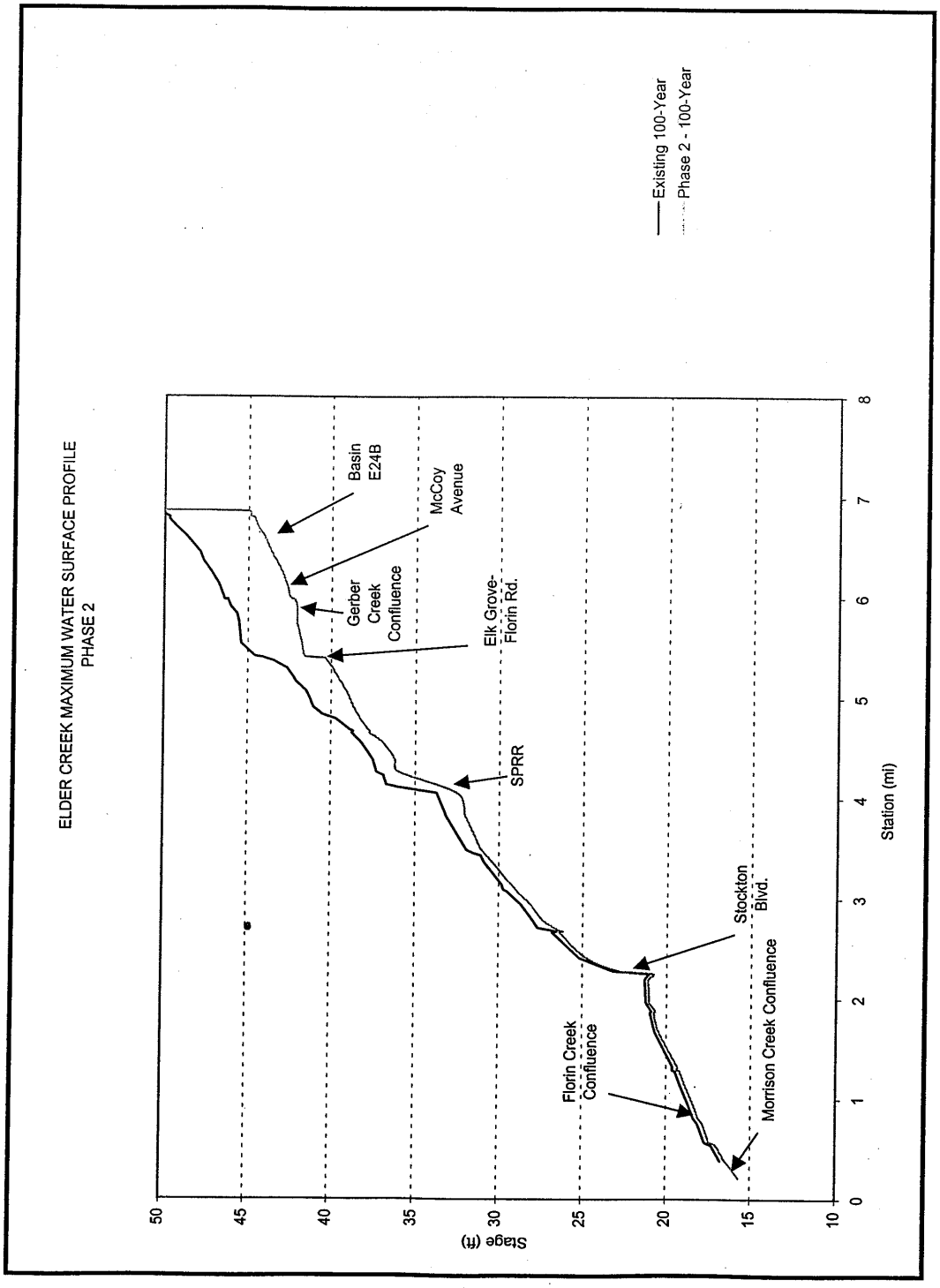
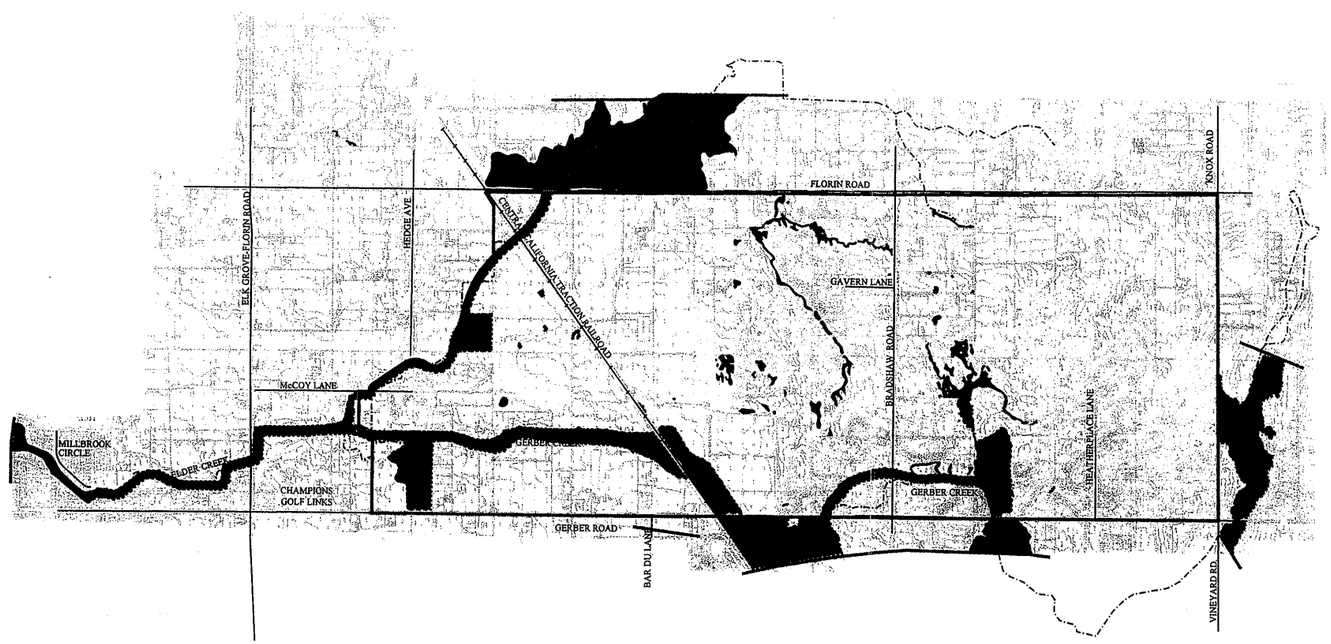


Plate DR -16
Phase 3 Residual 100-Year Floodplain



LEGEND

- 100-Year Floodplain (UNET Model)
- Vernal Pool
- Seasonal Wetland
- Stock Pond
- NVSSP Boundary
- Creek
- Major Road
- Railroad
- Limit of Floodplain Mapping

NOTE

The 100-year floodplain is based upon Stand-Alone Conditions.

SOURCE

The wetland delineation is based upon the "North Vineyard Station Specific Plan Technical Appendix: Biotic Resources," prepared by Sugnet and Associates Environmental Consultants, dated May 3, 1996.

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SCALE IN FEET

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NORTH VINEYARD STATION SPECIFIC PLAN
DRAINAGE MASTER PLAN
UPDATE AND PHASING

PHASE 3
RESIDUAL 100-YEAR FLOODPLAIN

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Plate DR -17
Elder Creek Maximum Water Surface Profile
Phase3

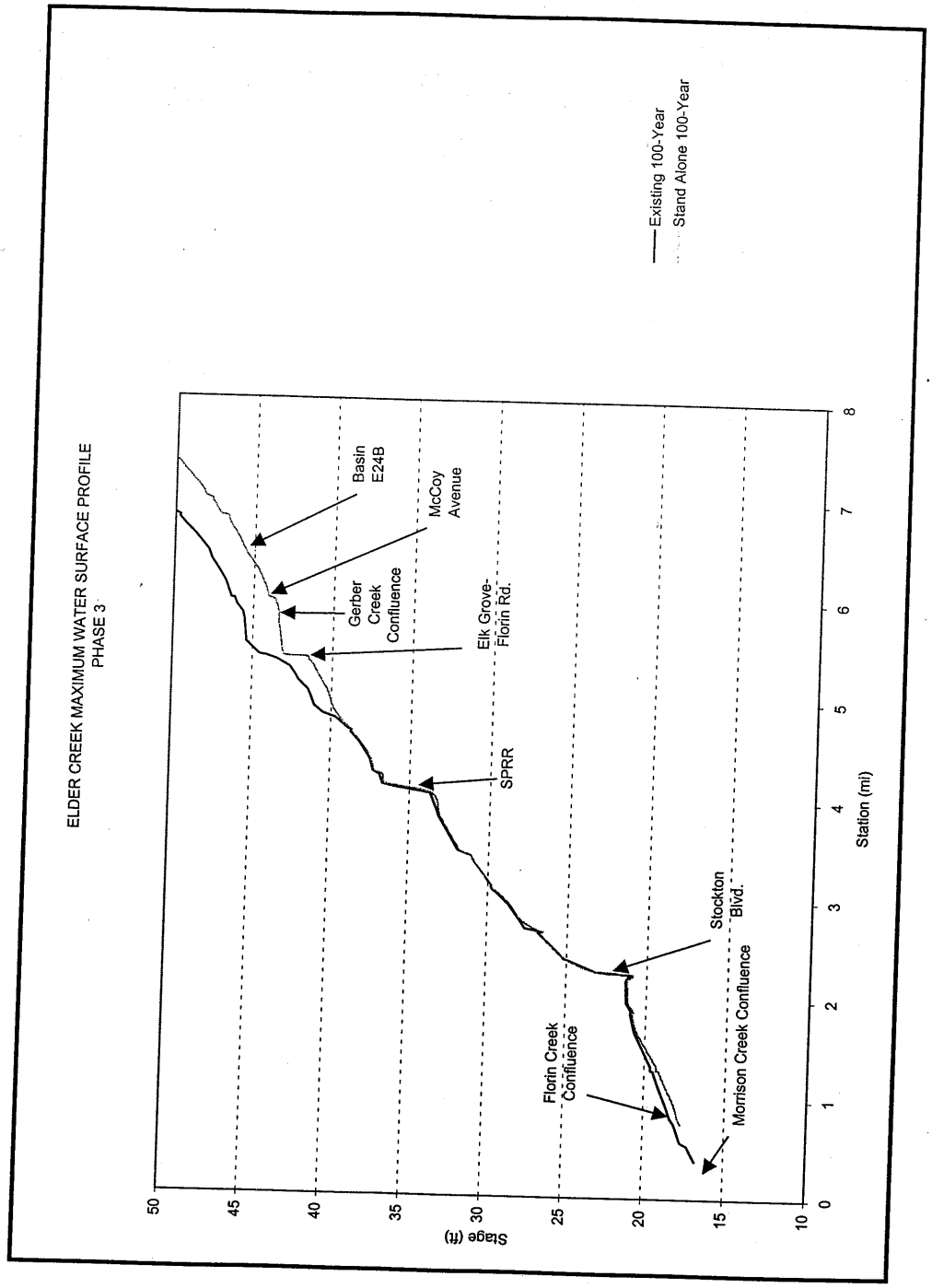

Table 14-1
Detention Basin Parameters
Stand-Alone Condition

Basin Parameters	Basin Name				
	E24A	E24B	E26	G41	G46
Basin Site (ac)	14	7.1	22	11	17
Basin Description	Online W.Q./ Combined F.C.	Online W.Q./ Combined F.C.	Online W.Q./F.C.	Online W.Q./ Combined F.C.	Online W.Q./ Combined F.C.
UNET Storage Area Number	11	6	5	10	8
Bottom Elevation	33.5	36	39.5	38.5	47.5
Maximum Side Slopes	4:1	4:1	4:1 and 3:1	4:1	4:1
Basin Equation	$4.84y + 0.487y^2$	$4.74y + 0.0925y^2$	$9.6y + 0.16y^2$	$5.46y + 0.389y^2$	$11.48y + 0.0028y^2$
Water Quality Volume (ac-ft)	7.2	2.3	17	8.7	17.1
Water Quality Pool Elevation	36.5	39	42.5	41.5	50.5
10-Year Flood Control Volume					
10-Year Pool Elevation	38.89	40.73	46.08	45.13	54.73
100-Year Flood Control Volume					
100-Year Pool Elevation	43.86	45.35	47.51	50.85	57.87
Total Weir Length (ft)	100	100	n/a	150	100
Segment 1 Weir Elevation and Length	100' @ 43.3	100'@43.5		150' @ 50.0	100' @ 56.2
Segment 2 Weir Elevation and Length					
Segment 3 Weir Elevation and Length					
Diameter of Outfall Pipe (in)	24	24	60	24	24

Table 14-2
Detention Basin Parameters
Ultimate Conditions

Basin Parameters	Basin Name				
	E24A	E24B	E26	G41	G46
Basin Site (ac)	14	7.1	22	11	17
Basin Description	Online W.Q./ Combined F.C.	Online W.Q./ Combined F.C.	Online W.Q./F.C.	Online W.Q./ Combined F.C.	Online W.Q./ Combined F.C.
UNET Storage Area Number	11	6	5	10	8
Bottom Elevation	33.5	36	39.5	38.5	47.5
Maximum Side Slopes	4:1	4:1	4:1 and 3:1	4:1	4:1
Basin Equation	$4.84y + 0.487y^2$	$4.74y + 0.0925y^2$	$9.6y + 0.16y^2$	$5.46y + 0.389y^2$	$11.48y + 0.0028y^2$
Water Quality Volume (ac-ft)	7.2	2.3	17	8.7	17.1
Water Quality Pool Elevation	36.5	39	42.5	41.5	50.5
10-Year Flood Control Volume					
10-Year Pool Elevation	38.89	40.73	46.08	45.13	54.73
100-Year Flood Control Volume					
100-Year Pool Elevation	41.91	44.44	46.83	47.73	56.67
Total Weir Length (ft)	50	100	n/a	150	100
Segment 1 Weir Elevation and Length	50' @ 41.0	100'@43.5		150' @ 48.0	100' @ 56.2
Segment 2 Weir Elevation and Length					
Segment 3 Weir Elevation and Length					
Diameter of Outfall Pipe (in)	24	24	60	24	24

IMPACTS AND ANALYSIS

The revised DMP concluded that Basin E20 was not needed to mitigate downstream impacts from development of the NVSSP area. From a technical standpoint, the entire NVSSP area could be developed implementing the concept of interim storm drainage pumping. Development can be phased with interim pumping, and meet the drainage and flood control objectives, policies and standards of Sacramento County. Impacts associated with drainage are less-than-significant.

MITIGATION MEASURES:

None required.

15 SUMMARY OF IMPACTS AND THEIR DISPOSITION

SIGNIFICANT EFFECTS WHICH CAN NOT BE AVOIDED WITH IMPLEMENTATION OF MITIGATION MEASURES

AIR QUALITY-- CONSTRUCTION-RELATED PARTICULATE EMISSIONS

Due to their size, the Vineyard Creek and Vineyard Point projects exceed the Sacramento Metropolitan Air Quality District's Thresholds of significance for construction emissions. Therefore, temporary construction-related air quality impacts are considered significant. Mitigation measures may reduce this impact but not likely to less-than-significant levels given the size of the developments.

SIGNIFICANT EFFECTS WHICH COULD BE AVOIDED WITH IMPLEMENTATION OF MITIGATION MEASURES

TRAFFIC AND CIRCULATION

PHASE 1A

Based on the roadway and intersection analysis, the addition of Phase 1A trips will cause or contribute to deficiencies at the following study locations under Year 2002 conditions:

STUDY ROADWAYS

- S. Watt Avenue – (North of SR 16);
- S. Watt Avenue – (SR 16 to Elder Creek Road);
- Elk Grove-Florin Road – (Florin Road to Gerber Road);
- Gerber Road – (Elk Grove-Florin Road to Bradshaw Road);

STUDY INTERSECTIONS

- SR 16/S. Watt Avenue;
- SR 16/Bradshaw Road; and
- Elder Creek Road/S. Watt Avenue

PHASE 1B

Based on the roadway and intersection analysis, the addition of Phase 1B trips will cause or contribute to deficiencies at the following study locations under Year 2005 conditions.

STUDY ROADWAYS

- None.

STUDY INTERSECTIONS

- SR 16/S. Watt Avenue;
- Florin Road/Excelsior Road; and
- Gerber Road/Excelsior Road.

YEAR 2010 CONDITIONS

The daily volumes were compared to the roadway capacity thresholds. The addition of project trips will result in a deficiency at the following study roadway segments.

- S. Watt Avenue (North of SR 16); and
- Elk Grove-Florin Road (Gerber Road to Calvine Road).

YEAR 2015 CONDITIONS

Based on the roadway and intersection analysis, buildout of the NVSSP will cause or contribute to deficiencies at the following study locations under Year 2015 conditions.

STUDY ROADWAYS

- Florin Road (West of S. Watt Avenue);
- Florin Road (S. Watt Avenue to Bradshaw Road);
- S. Watt Avenue (North of SR 16);
- S. Watt Avenue (SR 16 to Elder Creek Road);
- Elk Grove-Florin Road (Gerber Road to Calvine Road); and
- Bradshaw Road (Elder Creek Road to Florin Road).

STUDY INTERSECTIONS

- SR 16/S. Watt Avenue;
- SR 16/Bradshaw Road;
- Elder Creek Road/Bradshaw Road;
- Florin Road/Elk Grove-Florin Road; and
- Florin Road/Bradshaw Road.

NOISE IMPACTS ON PROPOSED LAND USES

The following are noise impacts of the proposed development projects. These impacts can be mitigated to less-than-significant through implementation of the mitigation measures outlined in the Noise section of this SEIR.

VINEYARD CREEK SUBDIVISION

Residences proposed nearest to Florin Road and Waterman Road would be exposed to future traffic noise levels that exceed the 60 dB L_{dn} Sacramento County Noise Element Standard. This impact is considered significant

VINEYARD POINT SUBDIVISION

Residences proposed nearest to Bradshaw Road and Gerber Road would be exposed to future traffic noise levels that exceed the 60 dB L_{dn} Sacramento County Noise Element Standard. This impact is considered significant.

WATER TREATMENT FACILITY AND WELL SITES

Based upon the noise level measurement data, the predicted noise level at the backyard of the nearest residence to the water treatment facility is 53 dB $L_{50.}$ This level exceeds the Sacramento County hourly noise criteria of 50 dB L_{50} for daytime noise and the 45 dB L_{50} criteria for nighttime noise. Since the booster pumps are expected to operate during the nighttime hours, it is recommended that noise control measures, which will reduce overall pump noise levels by a minimum of 8 dBA, be included in the project design.

The predicted un-muffled exhaust noise level with the emergency generator in operation is predicted to be 85 dBA at the backyard of the nearest residence. Assuming that the generator operates continually for one half of an hour while being exercised, the hourly L_{50} (sound level not to be exceeded 30 minutes of the hour) is 82 dBA. This level would exceed the daytime and nighttime noise level criteria of 50 dBA L_{50} and 45 dBA L_{50}, respectively.

The pump noise from the proposed remote well sites is expected to exceed Sacramento County hourly noise criteria of 50 dB L50 for daytime noise and 45 dB L50 for nighttime noise at the nearest residential properties. Implementation of recommended mitigation will reduce pump noise to meet County noise criteria.

BIOLOGICAL RESOURCES

WETLANDS

VINEYARD POINT SUBDIVISION

The proposed project will impact 9.02 acres of waters of the United States. The proposed mitigation will ensure that this impact is less-than-significant.

VINEYARD CREEK SUBDIVISION

The proposed project will impact 2.69 acres of waters of the United States. The proposed mitigation will ensure that this impact is less-than-significant.

DRAINAGE MASTER PLAN

The modified drainage corridors will result in 4.85 acres of creek (low-flow channel), 17.55 acres of channel bottom/wetlands and 3.23 acres of wetland/riparian benches. Post-project wetland/riparian habitat acreages will total 25.63 acres, a net gain of nearly 11.80 acres of habitat.

WATER TREATMENT FACILITY

The proposed project has the potential to impact Waters of the United States including vernal pools. The proposed mitigation will ensure that this impact is less-than-significant

VERNAL POOL SPECIES

VINEYARD POINT SUBDIVISION

Construction of the proposed project will remove 8.41 acres of vernal pools, habitat for the vernal pool fairy shrimp, vernal pool tadpole shrimp, and spadefoot toad. Removal of this habitat represents a significant impact.

VINEYARD CREEK SUBDIVISION

Construction of the proposed project will remove 1.49 acres of vernal pools, habitat for the vernal pool fairy shrimp, vernal pool tadpole shrimp, and spadefoot toad. Removal of this habitat represents a significant impact.

DRAINAGE MASTER PLAN

Construction of the proposed project will remove 1.08 acres of vernal pools, habitat for the vernal pool fairy shrimp, vernal pool tadpole shrimp, and spadefoot toad. Removal of this habitat represents a significant impact.

WATER TREATMENT FACILITY

Construction of the proposed project has the potential to impact vernal pools, habitat for the vernal pool fairy shrimp, vernal pool tadpole shrimp, and spadefoot toad. Removal of this habitat represents a significant impact.

SWAINSON'S HAWK

VINEYARD POINT SUBDIVISION

Project construction has the potential to disturb nesting activities of listed birds of prey. In addition, the proposed project will remove 179 acres of Swainson's Hawk foraging habitat upon completion. Impacts to Swainson's Hawk and other raptors are considered significant.

VINEYARD CREEK SUBDIVISION

Project construction has the potential to disturb nesting activities of listed birds of prey. In addition, the proposed project will remove 108 acres of Swainson's Hawk foraging habitat upon completion. Impacts to Swainson's Hawk and other raptors are considered significant.

DRAINAGE MASTER PLAN

Project construction has the potential to disturb nesting activities of listed birds of prey. Impacts to Swainson's Hawk and other raptors are considered potentially significant.

WATER TREATMENT FACILITY

Project construction has the potential to disturb nesting activities of listed birds of prey, and remove Swainson's hawk foraging habitat. Impacts to Swainson's Hawk and other raptors are considered potentially significant.

TRICOLORED BLACKBIRD

VINEYARD CREEK SUBDIVISION

During the April 2002 field assessment, a large tricolor blackbird colony of up to 500 pairs was nesting within the blackberry thicket along Elder Creek. Construction activities have the potential to disturb nesting activities and remove habitat. Impacts to Tricolor Blackbird are, therefore, potentially significant.

GIANT GARTER SNAKE & NORTHWESTERN POND TURTLE

VINEYARD POINT SUBDIVISION

The portion of Gerber Creek located within the project area represents potential habitat for the giant garter snake and the northwestern pond turtle. Construction of creek improvements and construction near ~~the~~ Gerber Creek could impact both GGS and northwestern pond turtle. Impacts to GGS and northwestern pond turtle are potentially significant.

VINEYARD CREEK SUBDIVISION

The portion of Elder Creek located within the project area and the portion of Gerber Creek located adjacent to the southeast corner of the project area, represent~~s~~ potential habitat for the giant garter snake and the northwestern pond turtle. Construction of creek improvements and construction near ~~the~~ Elder and Gerber Creeks could impact both GGS and northwestern pond turtle. Impacts to GGS and northwestern pond turtle are potentially significant.

DRAINAGE MASTER PLAN

The portions of Elder Creek and Gerber Creek located within the project area represent potential habitat for the giant garter snake and the northwestern pond turtle. Construction of creek improvements could impact both GGS and northwestern pond turtle. Impacts to GGS and northwestern pond turtle are potentially significant

CULTURAL RESOURCE IMPACTS

No sites or building were found to be eligible for inclusion in the National Register. No prehistoric, archaeological sites were encountered during the field investigation of the Survey Area. However, the lack of surface evidence does not preclude the existence of important, subsurface cultural materials. There is a potential to unearth buried cultural remains during future project construction activities. Caution should, therefore, be exercised during future development activities. Any accidental encounter~~ed~~ of previously unidentified cultural materials will require notification of the Department of Environmental Review and Assessment. If skeletal remains are encountered, both the Department of Environmental Review and Assessment and the County Coroner must be immediately notified. With the implementation of the mitigation proposed in the prior EIR, however, these potential impacts to cultural resources in the Vineyard Creek subdivision are considered less than significant.

EFFECTS FOUND NOT TO BE SIGNIFICANT

LAND USE

The proposed developments are generally consistent with the General Plan, North Vineyard Station Specific Plan, and the Sacramento County Zoning Code. The proposed amendments to the Specific Plan are in response to a need throughout the unincorporated County for affordable housing. The number of potential additional units that may be developed in the Plan area as a result of these changes represents only a small overall increase in the total number of units within the NVSSP.

PUBLIC SERVICES

The increased demands created by the project on the following services can be accommodated through compliance with requirements of the service agencies and no significant environmental impacts are expected.

WATER SUPPLY

The prior EIR concluded that implementation of the North Vineyard Station Specific Plan Water Master Plan would result in less than significant water supply impacts. However, the implementation of the NVSSP Water Master Plan was contingent on the implementation of the Water Master Plan for Areas Adjacent to the Zone 40 Water Supply Master Plan Update's Study Area, as well as fulfillment of the City of Sacramento American River Place of Use. Until all agreement are in place to wheel "firm" surface water supplies to the Specific Plan area, the project will contribute to the incremental decline in ground water levels. This incremental decline and the dewatering of private wells is a regional issue, beyond the scope of the proposed project. However, the project would add to the significant adverse cumulative impacts that regional development has on ground water supplies. Compliance with the requirements of the Sacramento County Water Agency will ensure that impacts are less-than-significant.

SEWER SERVICE

The revised sewer study does not include the proposed water treatment facility, which has the potential to contribute a significant amount of effluent into the sewer system. In addition, the proposed increased development densities anticipated from the density bonus program will also result in incremental increases in effluent generation from the Plan area. The County Sanitation District-1 (CSD-1) staff has indicated the increased flows will necessitate revised sewer studies and the planned sizing of the Gerber Road Trunk would have to be increased. Since the Gerber Road Trunk sewer line has yet to be constructed, these necessary adjustments can be made and the impact of the increased flows is expected to be less than significant. The Gerber Trunk will tie into the Bradshaw 6A and 6B Interceptors, and the Central Interceptor further downstream, where there will be adequate capacity ~~in~~ to handle the increased flows from the water

treatment facility and the expected small to moderate increases in flows from additional dwelling units ~~through~~ associated with the density bonus program.

CSD-1 indicated that the revised sewer study need not be included in this Draft EIR, but would be required prior to installation of the Gerber Road Trunk (pers. comm., Matt Morgan, CSD-1, June 15, 2004). Because potential impacts from the water treatment facility on the Gerber Road Trunk will be evaluated prior to installation of the trunk line and sized appropriately, lack of sewer capacity should not be an impediment to future development. Therefore impacts associated with sewer service are considered less-than-significant.

Drainage and Hydrology

The revised DMP concluded that Basin E20 was not needed to mitigate downstream impacts from development of the NVSSP area. From a technical standpoint, the entire NVSSP area could be developed implementing the concept of interim storm drainage pumping. Development can be phased with interim pumping, and meet the drainage and flood control objectives, policies and standards of Sacramento County. Impacts associated with drainage are less-than-significant.

Irreversible Environmental Changes

The project will result in the irreversible loss of agricultural-residential designated properties and the loss of a rural lifestyle. Once land is converted to a higher density urban uses and infrastructure is in place, it is highly unlikely that the land would revert back to rural uses. The commitment to urban uses will be permanent.

Cumulative Impacts

Cumulative impacts of the project were fully analyzed throughout this document along with project-specific, singularly significant impacts.

Growth Inducing Impacts

There may be some growth inducing potential associated with the project in that extension and upgrade of urban infrastructures and services will facilitate development of surrounding properties. However, the Plan Area and most of its surrounding lands were committed to urbanization with the adoption of the 1993 General Plan. The Plan Area interfaces to the northeast and east represent the most potential for land use compatibility concerns and thus, the greatest potential for growth inducement would be

in those same directions. Those potentially affected lands are shown on the General Plan Land Use Diagram for non-urban land uses: Recreation (along the creek), Agricultural Urban Reserve, General Agriculture and Agricultural Residential. These lands are outside the Urban Policy Area, which is defined in the General Plan as that "area expected to receive urban levels of public infrastructure and services within the 20-year planning period." By virtue of being outside the Urban Policy Area, the General Plan policies would not support near term urbanization of those lands. Furthermore, there are lands contiguous to the Plan Area that are within the designated growth area that would be given much higher priority for accommodating growth needs before any additional lands outside the Urban Policy Area are committed for urbanization. For these reasons, the growth inducing potential of the project on lands not otherwise designated for urbanization during the next 20 years is considered less than significant.

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PERSONAL COMMUNICATIONS -

Morgan, Matt. County Sanitation District 1. Telephone conversation, May 2003.

17 COMMENTS AND RESPONSES

The following text introduces each Draft EIR reviewer, and paraphrases his or her comment. Responses to those comments immediately follow. Comment letters in their entirety are included at the back of this chapter.

Opportunity for oral comments was presented at the Project Planning Commission on August 24, 2004, however, no comments on the Draft EIR were received.

Letters Received:

1. Southgate Recreation and Park District
2. California Department of Transportation (e-mail from Ken Champion)
3. California Department of Transportation (letter from Katherine Eastham)
4. Sacramento Metropolitan Air Quality Management District
5. Sacramento County Department of Water Resources
6. Elk Grove Unified School District
7. County Sanitation District 1
8. California Public Utilities Commission
9. Sacramento County Department of Transportation
10. Sacramento County Municipal Services Agency, Infrastructure Finance Section

LETTER 1

Comments from Southgate Recreation and Parks District

COMMENT:

The letter asserts that a more detailed description of the multi-use trail system, and other potential recreation facilities within the drainage parkway, is needed to fully evaluate environmental impacts associated with these facilities. This description would include showing exact locations of the trail, timing of improvements, developer responsibilities in constructing these improvements, requirements for areas outside the NVSSP, and the amount of funding required to construct these improvements.

Response:

The EIR considers impacts within the footprint of the Drainage Master Plan. The multi-use trail is an element of the Drainage Master Plan within this footprint, and, therefore, impacts associated with the trail are considered in all discussions pertaining to the Drainage Master Plan. Page 7-9 of the Draft EIR states:

> "Improvements, such as trail alignment and landscaping, associated with the Drainage Parkway are considered to be an element of the overall Drainage Master Plan. Impacts associated with these recreational improvements are considered in the context of evaluating the DMP."

The Financing Plan costs are projections of what improvements may cost at the time of construction. Updates to the Plan regarding these costs will be ongoing.

Coordination with adjacent Plan Areas in design of the trail system is important in order to maintain consistency of the facility throughout the Drainage Parkway. However, it is outside the scope of the EIR to place restrictions and/or requirements on land outside the NVSSP. This type of coordination is ultimately a planning issue to be addressed in the development of these adjacent Plan Areas.

LETTER 2 AND 3

Comments from the California State Department of Transportation

The following responses to comments were provided by the Sacramento County Department of Transportation (Clark):

Comment 1:

Can improvements be implemented which would raise the Level of Service (LOS) at the Watt Avenue and Bradshaw Road intersections of SR16 to LOS D?

Response 1:

Evaluation of other Public Facility Financing Plans revealed that the Sunridge Public Facility Financing Plan includes improvements at the State Route 16 and Bradshaw Road intersection. The proposed improvements are expansion of the intersection to accommodate two left turn lanes, two through lanes and one right turn lane on all approaches. It is likely that right-of-way will need to be acquired to provide the proposed improvements. The improvement is included in Phase 1 on the Sunridge Public Facility Financing Plan, which would mean that the improvement would be constructed in the next 5 years. With those improvements, the intersection level of service would improve to LOS D in the a.m. peak hour and LOS C in the p.m. peak hour, with build out of Phase 1A of the North Vineyard Station Specific Plan.

Subsequent to the publishing of the traffic analysis, the County of Sacramento moved forward a project to widen South Watt Avenue from State Route 16 to Kiefer Boulevard to five lanes. The project includes the State Route 16 and South Watt Avenue intersection. The intersection improvement includes an additional left turn lane and through lane on the southbound approach and one new left turn lane and two new through lanes on the northbound approach. The improvement is planned to be completed by 2006. With those improvements and Mitigation Measure TC-8, an additional through lane on the eastbound and westbound approaches, the intersection level of service3 would improve to LOS C in both the a.m. and p.m. peak hours, with build out of Phase 1A and 1B of the North Vineyard Station Specific Plan.

Comment 2:

Does the Sacramento County General Plan show the future outlook for SR16 through this area to eventually become a six-lane roadway facility with 6x6 type intersections? Shouldn't the County participate in an assessment to consider the feasibility of larger intersection configurations, similar to those at Watt Avenue and Fair Oaks Boulevard?

Response 2:

South Watt Avenue, Bradshaw Road and State Route 16 are shown as 6-lane thoroughfares in the Sacramento County General Plan. The intersections of State Route 16 and South Watt Avenue and State Route 16 and Bradshaw Road would be 6x6 intersections. According to the Sacramento County Standard Plans, a 6x6 intersection includes two left turn lanes, three through lanes and one right turn lane on each approach. The intent of the County of Sacramento would be to acquire right-of-way and install roadway improvements consistent with standards.

Comment 3:

The State standard for intersection LOS is LOS D. Mitigation Measures TC-6 and TC-8 appear to be inadequate, as they do not improve LOS at the Bradshaw Road/SR-16 and Watt Avenue/SR-16 intersections to LOS D.

Response 3:

See Response 1 above.

Comment 4:

Does sufficient right-of-way exist at the Watt Avenue/SR-16 and Bradshaw Road/SR-16 intersections for additional improvements beyond the TC-6 and TC-8 mitigation?

Response 4:

Sufficient right-of-way does not currently exist to implement full 6x6 standards at either the State Route 16 and South Watt Avenue and State Route 16 and Bradshaw Road intersections.

LETTER 4

Comments from the Sacramento Metropolitan Air Quality Management District

Comment 1:

There is no discussion or provision of funding for a Transportation Management Association as indicated in Mitigation Measure AQ-5, #8.

Response 1:

See Letter #10 from the County Municipal Services Agency, Infrastructure Finance Section. A condition of approval has been suggested to fund a County Service Area (CSA), or equivalent financing mechanism for the purpose of funding a variety of transportation demand management (TDM) services to implement an overall TDM strategy that will contribute to the goal of reducing vehicle trips. This condition has been included in the “Requests/Requirements of Other Agencies” section of this EIR.

LETTER 5

Comments from Sacramento County Department of Water Resources

Comment 1:

More detailed information about the Freeport Regional Water Project may be needed due to the size of the FRWP facilities within the NVSSP area.

Response 2:

The purpose of this section of the EIR is to identify the potential sources of water for the NVSSP. The EIR need not discuss in detail the specifics of pipe routes and sizes in order to convey this.

Comment 2:

Change the “Max Day Analysis” section on page 13-11 to the language in the attached document.

Response 2:

The requested edits have been made.

LETTER 6

Comments from the Elk Grove Unified School District

Comment:

The District is investigating a site on the south side of Florin Road and the future extension of Vineyard Road as a possible school site. If the site is pursued, there will be a displacement of 80 – 240 residential housing units.

Response:

Comment noted and forwarded to the Board of Supervisors via this Final EIR.

LETTER 7

Comments from County Sanitation District 1

Comment :

CSD-1 shall require an approved sewer study prior to the approval of the Final Maps or submittal of the improvement plans for plan check to CSD-1, whichever comes first. Sewer studies shall reflect the increase in residential zoning and the addition of the Water Treatment Facility.

Response:

This requirement is acknowledged on page 14-9 of the Sewer Service chapter of this EIR.

LETTER 8

Comments from the California Public Utilities Commission

Comment:

Consider safety issues when designing roadways and housing units near at-grade rail crossings.

Response:

Comment noted and forwarded via this Final EIR.

LETTER 9

Comments from Sacramento County Department of Transportation

Comment 1:

Correct Tables 8-4, 8-7, 8-9, 8-11, 8-14, 8-15 and 8-17 to show only LOS F facilities in boldface type.

Response 2:

The requested edits have been made.

LETTER 10

Comments from the County Municipal Services Agency, Infrastructure Finance Section

Comment:

Add the condition contained in the letter to the conditions of approval for the project.

Response:

The condition has been added to the “Requests/Requirements of Other Agencies” section of this Final EIR.

Letter 1

RECEIVED
AUG 20 2004
DEPARTMENT OF ENVIRONMENTAL
REVIEW AND ASSESSMENT

August 18, 2004

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County of Sacramento
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Rod Cooper

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Ward Winchell

RE: Draft Supplemental Environmental Impact Report for North Vineyard Station Specific Plan Amendment, Financing Plan, Water Treatment Facilities, and Associated Vineyard Point Rezone, Vesting Tentative Subdivision Map, Large Lot Tentative Subdivision Map and Special Development Permit; and Vineyard Creek Rezone, Vesting Tentative Subdivision Map and Large Lot Tentative Subdivision Map (Control Numbers: 03-CPB-0082, 02-PWE-0532, 04-PWE-0144, 02-RZB-SDB-SVB-0293, 03-RZB-SVB-0385)

Dear Joyce;

Southgate Recreation and Park District (District) would like to thank the Sacramento County DERA for the opportunity to comment on the above referenced Draft Supplemental EIR. Please continue to forward documentation related to these projects and the North Vineyard Station Specific Plan to the District. The District has prepared and submits the following comments respective to the above Draft Supplemental EIR and requests answers to questions raised, inclusion of additional language where indicated and the implementation of mitigation measures where significant impacts would occur to District resources.

The Draft Supplemental EIR omits a comprehensive discussion of the master-planned, multi-use, recreational trail system that affects each geographic entity of the subject document: North Vineyard Station, Vineyard Point, and Vineyard Creek. Particularly, the discussion of the Drainage Master Plan omits references to the trail system and its intended dual use for both drainage management and recreational uses, (e.g., usage of the detention basins for passive recreation). These omissions should be corrected; following are examples of where changes should be made.

Additionally, all figures should illustrate the continuation of Elder Creek beyond Elk Grove-Florin Road to the west because its omission inaccurately represents current and future drainage/trail needs. Similarly, all figures should illustrate the continuation of Gerber Creek south of Gerber Road for the same reasons.

The Draft Supplement EIR should state that all drainage system upgrades are to be accompanied by concomitant trail system improvements;[1] there are a number of instances in the Draft Supplemental EIR where the two should be referenced simultaneously. These are also described below.

Section 2 Executive Summary and Mitigation Measures

- Consistent with the District's request that developers provide landscaped access to the trail system from the Central California Traction Railroad Corridor should it be abandoned and deemed eligible for recreational use in the future (page 2-33), the Draft Supplemental EIR should state that the land use prescriptions of the pending Florin-Vineyard GAP Plan area should also require compatible trail alignments and linkages in the future since these are related projects that may have significant effects upon both the drainage and recreational functions of the trail system.

Section 3 Project Characteristics

- The Drainage Master Plan is first described on page 11-24 of Section 11, Biological Resources, where it discusses the delineation of wetlands, vernal pools, and special status species identified in the area of the Drainage Master Plan. Because the Master Plan is treated

[1] Cooper, Rod. 2004a. "Response to Notice of Preparation of the North Vineyard Station Specific Plan Amendment, Financing Plan, Water Treatment Facilities and Associated Vineyard Point Rezone, Vesting Tentative Subdivision Map, Large Lot Tentative Subdivision Map and Special Development Permit; and Vineyard Creek Rezone, Vesting Tentative Subdivision Map and Large Lot Tentative Subdivision Map," transmitted to Ms. Joyce Horizumi, Environmental Coordinator, County of Sacramento Department of Environmental Review and Assessment, 827 Seventh Street, Room 220, Sacramento, CA, April 20, 2004.

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separately and because it concerns Section 15, Drainage and Hydrology, as well as recreational open space via the master-planned, multi-purpose trail system, it should more clearly cross-reference the Project Description (page 3-1) and Section 15 (page 15-1) and/or be enveloped succinctly within a separate "Drainage Master Plan and Multi-Purpose Trail System" section.

- Many of the exhibits only reference a "drainage channel," which misrepresents the nature of the multi-use recreational trail system. Mention the Drainage Master Plan and master-planned, multi-use trail system as a project element in the Project Description (page 3-1).

- Under the "Specific Plan Amendment" section, add the following after the first sentence: "Although these proposed changes are internal modifications, they have important external effects because of the trail system, which relies upon successful implementation of similar alignments and improvements outside the Specific Plan Area in neighboring jurisdictions."

- Plate A, *Specific Plan Amendment,* on page 3-3, should be revised to clearly show the planned trails with appropriate reference in the land use legend.

- Plate B, *Conceptual Layout—Water Treatment Plan,* on page 3-7, should reference the dual nature of the "drainage channel" as part of the trail system in its vicinity map.

- Plate C, *Water Treatment Facilities—Alternate 1*, on page 3-8, should reference the dual nature of the "drainage channel" as part of the trail system in its vicinity map and on the large-scale Exhibit C-2.

- Plate E, *Location Layout Map*, on page 3-10, should also include a representation of the trail system in both the vicinity map and Exhibit D.

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- On page 3-11, mention trail improvements as distinct from the references to "O recreation" and "detention basin" sites and "landscape corridor" and "drainage channel" lots.

- Under the "Environmental Setting" section on page 3-19 to 3-20 at the bottom of the page that discusses Elder and Gerber Creeks and their watersheds, insert a sentence providing an overview of the master-planned, multi-use trail system. The occurrence of the 100-year floodplain should also be emphasized here to underscore the importance of the trail system and its relation to the Drainage Master Plan.

Section 5 Land Use

- Under the discussion of open space policies in relation to the North Vineyard Station Specific Plan, add a sentence regarding the master-planned, multi-purpose trail system and the need for simultaneous improvement of the trail system with the drainage amenities at the top of page 5-8, where the reference currently is to "a park, drainage parkway, and storm water detention." Also, mention that consistency with the pending Florin-Vineyard GAP Community Plan is critical since this is a related project that affects the drainage and recreation functions of the multi-use trail system.

Section 6 Public Facilities Financing Plan

- The discussion of the backbone infrastructure and public facilities summary describes "drainage backbone infrastructure costs including ROW acquisition;" the trail system should be referenced here as well as detention basin construction and improvement costs. Southgate will be including the landscape improvement costs only, in the "Park and Recreation Facility" component of the financing plan.

- Plate PF-1, *North Vineyard Station Specific Plan Development Phasing*, on page 6-3, misrepresents the creeks and omits the trail system; Elder Creek appears inaccurately broken. Plate PF-1 should be

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amended to show the effects of the phases of development on the drainage/recreation land uses.

- In Table 6-2, *North Vineyard Station Phasing Summary*, on page 6-6, drainage improvements are discussed for Elder and Gerber Creeks, particularly the construction of detention basins. A reference to their recreational functions as well as their linkages to the trail system should be made here.

- The "Parks and Recreation" section, which begins on page 6-20, does not include accurate, up-to-date information. In particular, the following changes are recommended:

    - From the second sentence, delete "one regional park" since no regional parks are planned.
    - Insert "two community parks" in the second sentence.
    - Change "six neighborhood parks" to "five neighborhood parks in the second sentence."
    - Change "The total cost of parks is estimated to be $12.2 million" to "The total cost of parks and trails are projected to be more than $17 million" in the first sentence of the second paragraph. Add: "Detention basin landscape improvements will be added as an additional section to the Park Facility Improvements. These improvement costs are roughly estimated to be $1.25 million."

- Under the "Parks and Recreation" section on page 6-20, insert a reference to the master-planned, multi-use trail system to supplement the reference to the "joint use trail system" at the end of the section on page 6-21.

- Insert the following on page 6-21:

    "Planned Park related improvements for the North Vineyard Station Specific Plan area include:"

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- Vineyard Creek. In addition to including the following information in the "Parks and Recreation" section, include it or a synopsis of it on pages 7-16 to 7-20:

  - *Description*: The approximately 14-acre community park will include a variety of athletic fields such as soccer (youth and adult), youth baseball with possible overlap of the softball fields. Additional facilities would include tennis courts (at least 4), basketball courts (half or full size), parking lot(s), permanent restrooms, three covered group picnic areas, and two playgrounds. It is important to note that some of the athletic fields and the tennis courts will include sports lighting for use after dark. The community park is located adjacent to the Elder Creek Drainage and Open Space corridor. This park site will be integrated with the detention basin to the north and the open space corridor to the west.

  - *Multi-Use Trails*: The District has master planned a regional multi-use trail system that will run along Elder Creek to the north (adjacent to the detention basin), west and south of this park site, connecting to the Gerber Creek Regional Trail system. The trail system will be improved at the same time the drainage corridor improvements are constructed. The trail will have several points of connection to the park and the detention basin. The multi-use trail shall be approximately 20 feet in width. This will accommodate a 12-foot paved trail with 2-foot decomposed granite shoulders on each side, and an additional 4-foot, blade-graded trail for horses.

  - *Park*: This community park will serve as an athletic field complex to accommodate a variety of athletic fields, including youth and adult soccer and youth baseball

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with a possible overlap of softball fields. Additional facilities would include tennis courts (at least 4), basketball courts (half or full size), parking lot(s), permanent restrooms, three covered group picnic areas, and two playgrounds. It is important to note that some of the athletic fields and the tennis courts will include sports lighting for use after dark. Typically, the park would remain open for activities at these facilities until 10:00 p.m. Restrooms and parking lot(s) would also have lights. It is anticipated that during periods of games and tournaments the park would attract many users, which would add to the traffic on the frontage streets and increased noise. Typically, community parks attract users from outside the immediate neighborhood because they are larger in size and can accommodate multiple uses for different large groups at the same time.

- *Detention Basin*: In addition to the water retention and quality features typical of these basins, landscape improvements will be made to accommodate passive recreational use (i.e., walking, observing nature, etc.). Proposed improvements for this basin would, at a minimum, include paved trail around the perimeter, benches, landscaping, irrigation, and possibly, security lighting.

- Vineyard Point. In addition to including the following information in the "Parks and Recreation" section, include it or a synopsis of it on pages 7-16 to 7-20:

  - *Description*: The approximately 14-acre community park is the future site of the North Vineyard Station Community Center (approximately 10,000 to 15,000 square feet). Additional facilities planned for this park site include soccer fields (youth and adult), a youth

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baseball field, basketball courts (half or full size), multiple covered picnic areas, two playgrounds and a permanent restroom. There will also be a separate parking lot for users of the facilities. It is anticipated that some of the athletic facilities will be lit to accommodate evening use. This park site is adjacent to a future elementary school to the east. The community park is situated to have access to the detention basin, just south of the water treatment facility. This combination of facilities will allow continuous pedestrian and bicycle access from the community park to the north, proceeding south to the improved detention basin, and ultimately culminating at the Gerber Creek drainage and open space corridor accessing the regional multi-use trail system.

- *Multi-Use Trails*: The District has master planned a regional multi-use trail system that will run along Elder Creek and Gerber Creeks. This subdivision will have access to the Gerber Creek portion of the drainage/open space corridor. The trail system will be improved at the same time the drainage corridor improvements are constructed. Portions of the trail will run along the California Central Traction Railroad. The multi-use trail shall be approximately 20 feet in width. This will accommodate a 12-foot paved trail with 2-foot decomposed granite shoulders on each side and an additional 4-foot, blade-graded trail for horses.

- *Park*: This community park will serve as the site for the North Vineyard Station Community Center and will also accommodate a variety of athletic fields, including soccer fields (youth and adult), a youth baseball field, basketball courts (half or full size), multiple covered picnic areas, two playgrounds and a permanent restroom. It is important to note that some of the

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athletic fields and the tennis courts will include sports lighting for use after dark. Typically, the park would remain open for activities at these facilities until 10:00 p.m. Restrooms and parking lot(s) would also have lights. It is anticipated that during periods of games and tournaments the park would attract many users, adding to the traffic on the frontage streets and increased noise. Typically, community parks attract users from outside the immediate neighborhood because they are larger in size and can accommodate multiple uses for different large groups at the same time. Additionally, due to the proximity of this park site to the adjacent future elementary school, use by the school is expected not only during but after school hours as well.

- *Detention Basin*: In addition to the water retention and quality features typical of these basins, landscape improvements will be made to accommodate passive recreational use (i.e., walking, observing nature, etc.). Proposed improvements for this basin would, at a minimum, include paved trail around the perimeter, benches, landscaping, irrigation, and possibly, security lighting.

Section 7 Public Services

- Include a "Drainage Master Plan and Multi-Use Trail System" bullet (page 7-9) that specifically describes the interrelated nature of the Drainage Master Plan and the trail system. Add a bullet above the final three paragraphs (and below the bullet on "Water Treatment Plant Impacts"), which discusses the trail system and future development.

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- In pages 7-16 to 7-20, include planned park, trail, and detention basin descriptions for Vineyard Creek and Vineyard Point from page 6-21, as referenced above in the "Parks and Recreation" section.

- Consistent with the District's request that developers provide landscaped access to the trail system from the Central California Traction Railroad Corridor should it be abandoned and deemed eligible for recreational use in the future (page 7-18), also state here that the land use prescriptions of the pending Florin-Vineyard GAP Plan area also require compatible trail alignments and linkages in the future since these are related projects that may have significant effects upon both the drainage and recreational functions of the trail system.

- Mention the relationship between the Gerber Creek trail and the Drainage Master Plan in subsection (n) on page 7-22.

Section 8 Traffic and Circulation

- The master-planned, multi-use trail system should be adequately represented on Plate TC-5, *North Vineyard Station Land Use Diagram—Phase 1A,* on page 8-13; Plate TC-12, *North Station Land Use Diagram—Phase 1B,* on page 8-30; and Plate TC-21, *North Vineyard Station Land Use Diagram Buildout Conditions,* on page 8-52. In their current forms, the maps misrepresent the trail system and do not refer to them in the respective legends.

Section 11 Biological Resources

- If the Drainage Master Plan and master-planned, multi-purpose trail system are being implemented as part of the U.S. Army Corps permit process for the areas referenced on pages 11-2, 11-6, 11-9 (for Vineyard Point), and/or 11-18 (for Vineyard Creek), then they should be mentioned concurrently.

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- Page 11-11 references the potential impact on habitat for the giant garter snake and northwestern pond turtle during construction of creek improvements at and around Gerber Creek. If this is related to the planned drainage and recreational improvements as part of the Drainage Master Plan and/or the master-planned, multi-purpose trail system, it should be mentioned here.

- Page 11-23 references the potential impact on habitat for the tricolor blackbird, giant garter snake, and northwestern pond turtle during construction of creek improvements at and around Elder Creek. If this is related to the planned drainage and recreational improvements as part of the Drainage Master Plan and/or the master-planned, multi-purpose trail system, it should be mentioned here.

- The references to species impact should be linked with those that are discussed in the subsequent (but separate) Drainage Master Plan (page 11-24):

- Insert description of trail system from subsection (m) on page 7-19, and insert the following from Cooper 2004a: "the District and the County of Sacramento have agreed that Detention Basins and Water Quality Basins can and should have a recreational value and use for the benefit of community. 'Decorating' the detention and/or water quality basins with native plantings...". (p. 3)

- The trail system should be mentioned in the discussion of the Drainage Master Plan, specifically on pages 11-24 as mentioned above, and where discussion of the U.S. Army Corps of Engineers permit requirements are referenced on page 11-31. The requirement for developers to guarantee accurate trail alignments should be suggested as a mitigation measure on page 11-31.

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Section 15 Drainage and Hydrology

- On page 15-1, the master-planned, multi-purpose trail system should be mentioned as part of the project description and the subsequent "Synopsis of the NVSSP DMP" on pages 15-2 to 15-3.

  Specifically, it is appropriate to mention the requirement that all drainage upgrades be accompanied by trail system improvements and that developers be required to ensure that the upgrades that take place outside the jurisdiction of the subject plan and map areas are required to be consistent. The requirement to ensure development of detention basins for dual-use purposes should be mentioned here as well.

- Clarification is necessary in the first paragraph to indicate that trail improvements will be constructed at the same time as drainage improvements. The method of funding the trail improvements should also be clarified (i.e., from the Recreation and Park component versus the Drainage Capital Improvement Program).

- The existing and planned trail system should be made explicit on the map and in the legend of Plate DR-1, *Elder and Gerber Creeks Subbasin Map,* on page 15-6 and amended for accuracy on Plate DR-2, *Ultimate Land Use*, on page 15-7.

- Plate DR-3, *Preferred Drainage Plan,* on page 15-8, references the related project areas west of Elk Grove-Florin Road and south of Gerber Road. This figure should be referenced in the textual description of the interconnected nature of the Drainage Master Plan and Trail System and specifically in regard to requiring developers to extend drainage/recreation improvements west/beyond the boundaries of the subject plan and map areas.

- Trail system development plans should be included in the textual discussion and graphical depiction of the drainage development phasing (Phase 1A, 1B, 1C, 2, and 3) on pages 15-14 to 15-28,

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especially in regard to plans for detention basins. On page 15-12, note that some, if not all, of the detention basins will have passive recreation uses for public access (e.g., walking, etc.). If specific project information is not currently available, then placeholder language should be inserted that requires consultation with and adherence to the master-planned, multi-purpose trail system prescriptions, as well as the relevant neighboring jurisdiction plans (e.g., the Florin-Vineyard GAP Community Plan area). For example, Drainage Master Plan prescriptions should also include information concerning the acquisition of adequate open space and trailways for Elder Creek (that extend west to Elk Grove-Florin Road) that are consistent with the (pending update) Florin-Vineyard GAP Community Plan. Also, within the Florin-Vineyard GAP Community Plan area, the channel improvements should be prescribed with respect to open space corridor preservation and drainage.

- Plate DR-5, *Detention Basin Cross Section,* on page 15-16, should be revised to include the walking trail and any other elements of the existing or planned trail system.

- A figure depicting the overlay of the existing and planned trail system on the Drainage Master Plan should be included between pages 15-15 and 15-16.

- Another related project that should be included here in the discussion of trail and drainage system consistency is the Upper Laguna Creek Collaborative (ULCC), which is intended to "coordinate all projects and explore the development of a comprehensive, combined application for the requisite environmental permits for all public works projects along Laguna Creek that would address the needs of all agencies, interested private groups, the general public and the environment concurrently" with the goal of allowing for the development of a multi-use corridor that shall provide sufficient drainage especially during times of flooding, improving water quality by using constructed wetlands to treat urban runoff prior to its discharge into the creek channel, creating a space for the future

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sewer interceptor, providing a recreational trail for public use, and providing buffers and preserving habitat that supports native plant and animal species, while creating a scenic open space corridor that will be maintained and preserved in perpetuity.[2]

Once again the District would like to thank the Sacramento County DERA for the opportunity to comment on the North Vineyard Station Specific Plan Amendment, and the Vineyard Point and Vineyard Creek Vesting Tentative Subdivision Maps Draft Supplemental EIR. Please continue to forward information and documentation related to this plan and respective plan projects to the District. If you require additional information or assistance please do not hesitate to contact Judy Robinson, Planning & Facilities Manager, at 428-1171 ext. 14.

Sincerely,

Ward Winchell
Interim General Manager

[2] Cooper, Rod. 2004b. Attachments to "Notice of Preparation of a Draft Environmental Impact Report for the Bradshaw Christian High School-Comments", transmitted to Ms. Joyce Horizumi, Environmental Coordinator, County of Sacramento Department of Environmental Review and Assessment, 827 Seventh Street, Room 220, Sacramento, CA, July 20, 2004.

14

SOUTHGATE
RECREATION & PARK DISTRICT

Sheldon
Administrative Headquarters
6000 Orange Avenue
Sacramento, CA 95823-3225
Phone 916-428-1171
Facsimile 916-428-7334
www.southgaterecandpark.net

Board of Directors
Rolfe P. Appel
John E. Cockerham
Edwin A. Smith
Christine Thompson
Shirley J. Wirth

General Manager
Rod Cooper

Assistant General Manager
Ward Winchell

RESOLUTION 04-21

RESOLUTION OF THE BOARD OF DIRECTORS OF THE SOUTHGATE RECREATION AND PARK DISTRICT COMMENTING ON THE **DRAFT SUPPLEMENTAL ENVIRONMENTAL IMPACT REPORT** FOR THE NORTH VINEYARD STATION SPECIFIC PLAN AMENDMENT, FINANCING PLAN, WATER TREATMENT FACILITIES AND ASSOCIATED VINEYARD POINTE REZONE, VESTING TENTATIVE SUBDIVISION MAP, LARGE LOT TENTATIVE SUBDIVISION MAP AND SPECIAL DEVELOPMENT PERMIT; AND VINEYARD CREEK REZONE, VESTING TENTATIVE SUBDIVISION MAP AND LARGE LOT SUBDIVISION MAP

WHEREAS, the District is in receipt of a Draft Supplemental Environmental Impact Report for the North Vineyard Station Specific Plan Amendment, Financing Plan, Water Treatment Facilities and Associated Vineyard Pointe Rezone, Vesting Tentative Subdivision Map, Large Lot Tentative Subdivision Map and Special Development Permit; and Vineyard Creek Rezone, Vesting Tentative Subdivision Map and Large Lot Tentative Subdivision Map; and

WHEREAS, the North Vineyard Station Specific Plan Area runs through the central portion of the Southgate Recreation and Park District potentially impacting District parks, landscape corridors and recreational facilities; and

WHEREAS, the Board of Directors has previously commented on the Notice of Preparation through Resolution 03-153 adopted April 20, 2004; and

WHEREAS, the Board of Directors has also previously commented on proposed projects within the North Vineyard Station Specific Plan area inclusive of Resolutions 03-17 and 03-120 for Vineyard Creek and Resolutions 02-32, 02-79 and 03-98 for Vineyard Pointe; and

WHEREAS, there could be significant impacts to the value of parks, recreation and open space in the existing and future recreational facilities in the North Vineyard Station Specific Plan area, requiring mitigation measures in order to reduce the impacts to below the level of significance.

NOW, THEREFORE, BE IT RESOLVED that the Board of Directors of the Southgate Recreation and Park District hereby provides the comments contained in the attached letter to be addressed and clarified by the County of Sacramento where indicated and included with the Final Environmental Impact Report.

BE IT FURTHER RESOLVED that adequate response to the District's comments, with a detailed description of potential mitigation measures to assist in reducing potential impacts be included in Final Environmental Impact Report.

Resolution 04-21
Page 2

PASSED AND ADOPTED by the Board of Directors of the Southgate Recreation and Park District this 17th day of August, 2004, by the following vote to wit:

AYES:

Appel, Cockerham, Smith, Thompson & Wirth

NOES:

None

Rolfe Appel, Chair

Edwin A. Smith, Clerk

Letter 2

Hawkins. Tim

From: ken_champion@dot.ca.gov
Sent: Wednesday, August 11, 2004 5:23 PM
To: Hawkins. Tim
Cc: katherine_eastham@dot.ca.gov; steve_hetland@dot.ca.gov; jeff_pulverman@dot.ca.gov; john_holzhauser@dot.ca.gov; dennis_azevedo@dot.ca.gov; larry_brohman@dot.ca.gov
Subject: North Vineyard Station DSEIR State Route 16 Mitigation

Please indicate if a justification rationale and right-of-way research exists in this EIR (or other to be referenced) regarding the State Route (SR) 16 intersections at Watt Avenue and Bradshaw Road to show why a larger "intersection right-of-way foot print" cannot be developed. We would like to see information that discusses with greater certainty whether greater numbers of turn lanes and wider intersection approaches "can" OR "cannot" be provided to raise certain intersection movements to a performance level of LOS "D" instead of "E".

Doesn't the Sacramento County General Plan show the future outlook for SR16 through this area to eventually become a six lane roadway facility with 6 X 6 type intersections? Also, consider that lower standard arterials, at the intersection of Watt Avenue and Fair Oaks Boulevard, were allowed to be developed with a triple left turn movement. As the County develops with higher traffic demands, shouldn't an environmental assessment (on a fair share fee basis) at these intersections consider and discuss the feasibility of such enlarged intersections at Bradshaw and Watt Avenue on SR 16? If they are ruled out, we would like to know why and the rationale behind the decision.

On signalized State highways the State intersection standard adhered to is an LOS D, if it can be obtained by re-geometricizing and re-phasing the signalization of the intersection. The DSEIR appears to be inadequate thus far in its TC-6 and TC-8 mitigation on Page 2-4 (of the yellow pages). It does not explain why LOS D could not be obtained to meet the State highway intersection standard.

We would like to know whether sufficient intersection right-of-way exists at either location for additional improvements beyond the TC-6 and TC-8 mitigation.

1

Letter 3

Sent By: HP LaserJet 3100; 916 323 7669 ; Aug-19-04 4:36PM; Page 2/2

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION
DISTRICT 3 – SACRAMENTO AREA OFFICE
VENTURE OAKS, MS 15
P. O. BOX 942874
SACRAMENTO, CA 94274-0001
PHONE (916) 274-0614
FAX (916) 274-0648
TTY (530) 741-4509

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August 19, 2004

04SAC0109
03SAC-16/99 PM 6.220/19.612
North Vineyard Station Specific Plan Amendment,
Rezone, Subdivision Map, Water Treatment Facilities,
Financing Plan, Special Development Permit
Draft Supplemental Environmental Impact Report
SCH#2004032104

Ms. Joyce Horizumi
Sacramento County
Department of Environmental Review and Assessment
827 7th Street, Suite 220
Sacramento, CA 95814

Dear Ms. Horizumi:

Thank you for the opportunity to review and comment on the above mentioned project. Our comments are as follows:

- The State highway standard for the State Route 16 intersections with South Watt Avenue and Bradshaw Road is LOS "D". The DSEIR proposes two mitigation measures (TC-6 and TC-8) which would decrease the project's traffic impacts to LOS "E". The mitigation measures should be modified to either meet LOS "D" or an explanation should be provided regarding why this standard cannot be met and whether the impact is significant and unavoidable.

Please provide our office with a response to the above comments. If you have any questions regarding these comments, please contact Ken Champion at (916) 274-0615.

Sincerely,

Katherine Eastham

KATHERINE EASTHAM, Chief
Office of Transportation Planning – Southwest

c: Scott Morgan, State Clearinghouse

"Caltrans improves mobility across California"

Letter 4

Aug-20-2004 09:43am From-SAC. METRO AQMD 916 874 4899 T-917 P.001/002 F-470

SACRAMENTO METROPOLITAN
AIR QUALITY
MANAGEMENT DISTRICT

Fax to 2pgs
Tim Hawkins
874-8343
From - Jeane Borkenhagen
ph 874-4885

Larry Greene
AIR POLLUTION CONTROL OFFICER

August 18, 2004

Mr. Tim Hawkins
County of Sacramento
Department of Environmental Review and Assessment
827 7th St, Room 220
Sacramento, CA 95814

COPY

SUBJECT: North Vineyard Station Specific Plan Amendment, Financing Plan, Water Treatment Facilities, Draft Supplemental EIR
SC:2004032104
SMAQMD # SAC200400199

Dear Mr. Hawkins:

Thank you for providing the environmental document listed above to the Sacramento Metropolitan Air Quality Management District (District). Staff comments follow.

We understand from the document that the changes to the land use plan are considered minor and so "it is not expected that these changes will contribute to additional regional air quality impacts beyond those already analyzed in the prior FEIR."

There are two Air Quality mitigation measures listed in the Mitigation Monitoring Report we want to comment on:

AQ 5. Comply with the adopted AQ-15 Plan.

"The following measures, which are incorporated into the North Vineyard Station Specific Plan, are all contained in the preliminary list of acceptable measures. According to the County's preliminary guidelines, the above measures result in a 15.5 percent reduction in emissions and meet the requirements of General Plan Policy AQ-15." (pg 9-4, 9-5)

Under the following list of measures (presumably the AQ-15 Plan), there is #8: "The Plan area will participate in a Transportation Management Association to create, administer, and finance on-going programs to reduce vehicle trips. The Financing Plan for the Plan will include means to fund the TMA. SPECIFIC PLAN CREDIT=3%"

Unfortunately, there is no discussion or provision of funding for such a TMA. In order to create the financing for an on-going program, we suggest a zoning condition be applied to the project area which would read:

The North Vineyard Station Specific Plan shall participate in a County Service Area (CSA), or an equivalent financing mechanism to the satisfaction of the Board of Supervisors, for the purpose of funding a variety of transportation demand management (TDM) services to implement an overall TDM strategy that will contribute to a goal of a 30% reduction in daily vehicle trips. The purpose of this CSA, or equivalent financing mechanism, is to fund programs and services to implement trip reduction measures that

777 12th Street, 3rd Floor ▪ Sacramento, CA 95814-1908
916/874-4800 ▪ 916/874-4899 fax
www.airquality.org

Aug-20-2004 09:43am From-SAC. METRO AQMD 916 874 4899 T-917 P.002/002 F-470

improve mobility and coincidentally reduce air quality impacts. Such programs and services may include but are not limited to:

- On site Transportation Coordinators and education outreach
- Incentives for alternative mode use such as transit subsidies, guaranteed ride home programs, and bicycle purchase subsidies
- Programs encouraging people to work close to where they live
- Grade School trip pool programs
- Transit shuttle system

The second mitigation measure we want to comment on is AQ-6. That measure reads:

"Individual development projects within the Specific Plan Area shall achieve an additional 2 percent reduction in combined operational and area source air quality emissions to ensure overall AQ-15 compliance."

We suggest that this measure actually include some suggested ways to achieve the reduction requested. Specifically, the County could suggest that the developer install "Energy-Star" labeled roofing materials and or that the project comply with SMUD Advantage (Tier II or III) energy standards."

If you have questions, please contact me at 874-4884 or jborkenhagen@airquality.org.

Sincerely,

Jeane Borkenhagen

Jeane Borkenhagen
Associate Air Quality Planner Analyst
cc: Ron Maertz SMAQMD
Dave Pevny Planning Department

Letter 5

COUNTY OF SACRAMENTO
MUNICIPAL SERVICES AGENCY – CHERYL CRESON, ADMINISTRATOR
Department of Water Resources
Including service to the Cities of Citrus Heights, Elk Grove and Rancho Cordova
Keith DeVore, Director

RECEIVED
AUG 4
DEPARTMENT

August 4, 2004

To: Tim Hawkins
Department of Environmental Review and Assessment

RE: Comments to DEIR for North Vineyard Station

Dear Mr. Hawkins,

The following are comments to the DEIR for North Vineyard Station:

- The "Surface Water Component" briefly discusses the Freeport Regional Water Project. I have attached a more detailed document which discusses the project. You may want to incorporate more information about this project (Freeport), since it involves such large facilities within the project area.
- In the "Max Day Analysis" section, delete the "crossed out" section and add the table as shown in the attached document.

If you have any questions, please feel free to give me a call.

Sincerely,

Jody Hashigami
Associate Civil Engineer
S.C.W.A.
916-874-4256

Main Office: 827 7th Street, Room 301, Sacramento, CA 95814 • Phone: (916) 874-6851 • Fax: (916) 874-8693
Field Offices: *Drainage Operations and Maintenance* – 3847 Branch Center Road, Sacramento, CA 95827 • Phone: (916) 875-7159
Facilities Operations and Administration – 3847 Branch Center Road, Sacramento, CA 95827 • Phone: (916) 875-4913

Groundwater will be an integral component of the buildout system serving the area. However, groundwater production is limited to 2,220 gpm (sufficient 2,530 EDU's). Surface water will need to be made available for development to exceed 2,530 EDU's.

Groundwater will be extracted from the deep aquifer and then delivered to a treatment facility for removal of iron and manganese. Treatment, storage, and pumping capacities are modeled in this study to accommodate each development phase in accordance with SCWA design standards.

The groundwater treatment facility is to be constructed near the intersections of the CCTC Railroad and Waterman Road, at the west edge of Phase A-1 development (submitted Tentative Map for Vineyard Point) prior to development of Phase A-2.

The 1998 EIR for the NVSSP identified a second groundwater treatment facility with associated wells to be constructed with Phase D, southwest of the intersection of Florin Road and the Vineyard Road extension. This water treatment plant, if needed, would be constructed by SCWA.

SURFACE WATER COMPONENT

The Draft 2002 Zone 40 Water Supply Master Plan dated December 2002 is intended to update previous Zone 40 water supply plans and incorporates terms and conditions for SCWA's water supply through the year 2030 from the recently adopted Water Forum Agreement. The Water Forum Agreement includes a provision for surface water to be obtained from the City of Sacramento for that portion of Zone 40 that lies within the City's ARPOU. This provision is for up to 9,300 acre-feet per year. The NVSSP portion of this supply is approximately 25%. Transmission and treatment of this water will most likely be through the Freeport Regional Water Project. This project consists of a diversion structure on the Sacramento River near the community of Freeport and a raw water conveyance pipeline to the central portion of Zone 40. An 85-MGD (ultimate capacity) surface water treatment facility and treated water conveyance pipeline will be constructed in phases by SCWA in the vicinity of Bradshaw and Florin Roads to supply surface water throughout Zone 40.

As an alternative, SCWA could negotiate the purchase of City of Sacramento ARPOU water and deliver it through the City's Fairbairn or Sacramento River water treatment plants. This system involves purchasing treatment capacity and constructing conveyance facilities from the current City delivery point near Florin Road and Power Inn Road to the location to the location where the surface water would be introduced into the SCWA system. To deliver this water, a transmission main would need to be constructed in Florin Road, from Power Inn Road to Waterman Road. Booster pump capacity as well as additional storage would also be required.

Surface water supply facilities to meet the Specific Plan Area demands within the City's ARPOU will need to ultimately provide 2,900 gpm.

FREEPORT
REGIONAL WATER AUTHORITY

BOARD MEMBERS
John Coleman
Illa Collin
Katy Foulkes
Don Nottoli

ASSOCIATE BOARD MEMBER
Bonnie Pannell

GENERAL MANAGER
Eric F. Mische

SECRETARY
Cindy H. Turner

GENERAL COUNSEL
John F. Whisenhunt

TREASURER
Gary M. Breaux

September 15, 2004

Subject: Request for Proposal (RFP) for Design Services
FRWA Pipeline Facilities Project

Dear Consultant:

The Freeport Regional Water Authority (FWRA) seeks the services of a design consultant for the FRWA Pipeline Facilities Project. You are invited to submit a proposal for these services.

This project consists of a raw water conveyance pipeline comprised of four segments as follows:

1. Approximately 5.1 miles of 84-inch diameter pipeline which will convey up to 185-mgd of raw Sacramento River water from the end of a tunneled pipeline crossing location east of Interstate 5 (I-5) to State Route 99 (SR 99);
2. Approximately 7.6 miles of 84-inch diameter pipeline which will convey up to 185-mgd of raw Sacramento River water from State Route 99 to a turnout at Vineyard Road and Gerber Road;
3. Approximately 3.9 miles of 66-inch diameter pipeline which will convey up to 100-mgd of raw Sacramento River water from the turnout at Vineyard Road and Gerber Road to the Folsom South Canal (FSC). A pipeline Terminal Facility located at the FSC consisting of a weir and outfall structure is also included in this segment; and
4. Approximately 1.0 mile of 60-inch diameter pipeline which will convey up to 85-mgd of raw Sacramento River water from the turnout at Vineyard Road and Gerber Road to the future SCWA water treatment plant (Zone 40 WTP) near Florin Road and Vineyard Road and the flow control facilities.

The estimated capital cost of these project elements is $150 million. Completion of design is targeted for Summer 2006. Completion of facility construction is targeted for Fall 2009.

The FRWA pipelines will receive raw water flow from an intake structure and pumping facility to be constructed on the Sacramento River near Freeport, California. Design services for the intake structure and pumping facility will be procured by FRWA under a separate RFP process. The consultant selected for the pipeline design will not be prohibited from performing design services for the intake structure and pumping facility.

1510 J STREET • SUITE 140 • SACRAMENTO • CA 95814
Tel. (916) 326-5480 • Fax. (916) 444-2137
www.freeportproject.org

MAX-DAY DEMAND ANALYSIS

MAX-DAY ASSUMPTIONS/CRITERIA

Max-Day demand for the North Vineyard Specific Plan is based on the anticipated land use and respective average annual demands per EDU both outside and within the ARPOU. The Max-Day values are obtained by multiplying the Average Daily demand by a factor of 2 per Sacramento County Improvement Standards Manual. Max-Day demands are individually entered at respective demand nodes in the WaterCAD® model.

The Hazen-Williams formula is used in the hydraulic study of the system, using a C-value of 125 for PVC pipe as required by the Sacramento County Improvement Standards Manual. This C-Value is generally considered conservative as it is intended to take into account various minor losses in the system.

CONCLUSIONS

The prior EIR concluded that implementation of the North Vineyard Station Specific Plan Water Master Plan would result in less than significant water supply impacts. However, the implementation of the NVSSP Water Master Plan was contingent on the implementation of the Water Master Plan for Areas Adjacent to the Zone 40 Water Supply Master Plan Update's Study Area, as well as fulfillment of the City of Sacramento American River Place of Use. Until all agreement are in place to wheel "firm" surface water supplies to the Specific Plan area, the project will contribute to the incremental decline in ground water levels. This incremental decline and the dewatering of private wells is a regional issue, beyond the scope of the proposed project. However, the project would add to the significant adverse cumulative impacts that regional development has on ground water supplies.

REQUIREMENTS OF THE SACRAMENTO COUNTY WATER AGENCY:

The SCWA requires the following conditions of approval be placed on all tentative maps and vesting tentative maps within the North Vineyard Station Specific Plan Area:

1. That Simple Title ownership or sale agreements for the WTP lands are completed prior to any Tentative Map approvals within the North Vineyard Station Specific Plan area. WTP lands shall be reserved per the guidelines contained in Chapter 22.50 of the Sacramento County Code and Government Title 7, Division 2, Article 4.(1/03).

2. That well sites be identified prior to Tentative map approvals for subdivisions within the North Vineyard Station Specific Plan area and reserved per the guidelines contained in Chapter 22.50 of the Sacramento County Code and Government Title 7, Division 2, Article 4.(1/03).

7. MAX-DAY DEMAND ANALYSIS

Max-Day Assumptions/Criteria

Max-Day demand for the North Vineyard Specific Plan is based on the anticipated land use and respective average annual demands per EDU both outside and within the ARPOU. ~~The Max-Day values are obtained by multiplying the Average Daily demand by a factor of 2 per Sacramento County Improvement Standards Manual. Max-Day demands are individually entered at respective demand nodes in the WaterCAD® model.~~

~~The Hazen-Williams formula is used in the hydraulic study of the system, using a C-value of 125 for polyvinyl chloride (PVC) pipe as required by the Sacramento County Improvement Standards Manual. This C-value is generally considered conservative as it is intended to take into account various minor losses in the system.~~

Table 7.1 – Summary of Results for Max-Day Demand

Phase	Max-Day Demand* (gpm)	Maximum System Pressure (psi)	Minimum System Pressure (psi)	Minimum Pressure Junction	Maximum Headloss Gradient (ft/1000ft)
A-1	536.10	45	37.47	J-A2-08	0.09
A-2	1,461.87	56.83	49.91	J-A2-08	0.10
B	2,486.55	61.68	55.27	J-A2-10	0.12
C	3,744.90	61.75	47.35	J-C-05	0.23
D	4,640.61	61.73	47.28	J-C-05	0.25
E	5,338.99	61.70	47.26	J-C-05	0.25

* incl. 7% transmission loss

Letter 6

ELK GROVE Unified School District

Members of the Board:
Jeanette J. Amavisca
Pollyanna Cooper-LeVangie
Priscilla S. Cox
Pamela A. Irey
William H. Lugg, Jr.
Chet Madison, Sr.
Brian D. Myers

Constantine I. Baranoff
Assistant Superintendent
Facilities and Planning

Robert L. Trigg Education Center
9510 Elk Grove-Florin Road, Elk Grove, CA 95624

(916) 686-7711
FAX: (916) 686-7754

August 24, 2004

Ms. Joyce Horizumi
County of Sacramento
Department of Environmental Review and Assessment
827 7th Street, Room 220
Sacramento, CA 95814

Dear Joyce:

On behalf of the Elk Grove Unified School District, please accept the following comments concerning the Draft Supplemental Environmental Impact Report for the North Vineyard Station Financing Plan:

The School District has been looking for a combination High School/Middle School site of approximately 80 acres for the past several months. As you know, this type of site was not included in the North Vineyard Station Specific Plan. The District did not request one at the time the plan was being considered because the number of housing units in the land use plan did not generate enough students; however, when the North Vineyard Station Specific Plan is coupled with the proposed Elk Grove-Florin Specific Plan, there are more than enough students generated to fill both a High School and Middle School.

Obtaining a full 80 acres for this type of facility is difficult with all of the environmental and California Department of Education school site requirements. As a result of the District's investigation of possible school sites, we have narrowed the selection process to include three possible options. Two of these options are within the North Vineyard Station Specific Plan, and the other is within the proposed Elk Grove-Florin Specific Plan. Please see attached exhibit.

On August 2, 2004, the Elk Grove Unified School District Board of Education reviewed the three options and requested the District Staff investigate option #8, located on the south side of Florin Road and the future extension of Vineyard Road. If this site is pursued by the District, there will be a displacement of 80-240 residential housing units, which will impact the proposed Financing Plan. In addition to this issue, the District is extremely interested in the timing of the extension of Vineyard Road in order to provide access on two sides of the site.

Please contact Mr. Jim Bush, School Site Solutions, Inc. (916-930-0736) or me if you have any questions.

Sincerely,

Constantine I Baranoff
Assistant Superintendent, Facilities and Planning

CIB:gg
Corresp\JH82404CommentsNorthVineyard

cc: Steve Looper
Marnie Rosenstein

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AUG 26 2004
DEPARTMENT OF ENVIRONMENTAL REVIEW AND ASSESSMENT

Letter 7

CSD-1
COUNTY SANITATION DISTRICT 1
Wastewater Conveyance For a Growing Sacramento

10545 Armstrong Avenue
Mather
California
95655
Tele: [916] 876-6000
Fax: [916] 876-6160
www.csd-1.com

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Marcia Maurer
Chief Financial Officer

Wendell H. Kido
District Manager

Mary K. Snyder
Collection Systems Manager

August 24, 2004
E225.000

Joyce Horizumi
Dept. of Environmental Review & Assessment
Sacramento County
827 Seventh Street, Room 220
Sacramento, CA 95814

Dear Ms. Horizumi:

Subject: **Notice of Preparation of a Draft Environmental Impact Report for North Vineyard Station Specific Plan Amendment, Financing Plan, Water Treatment Facilities, and Associated Vineyard Point Rezone, Vesting Tentative Subdivision Map, Large Lot Tentative Subdivision Map, and Special Development Permit; and Vineyard Creek Rezone, Vesting Tentative Subdivision Map, and Large Lot Tentative Subdivision Map (Cont. NOS. 03-0082, 02-0532, 02-0293, & 03-0385)**
Control No. 03-CPB-0082, 02-PWE-0532, 04-PWE-0144, 02-RZB-SDB-SVB

Sacramento Regional County Sanitation District (SRCSD) and County Sanitation District 1 (CSD-1) have reviewed the subject Notice of Preparation (NOP) and have the following comments.

We expect that if the project is subject to currently established policies, ordinances, fees, and to conditions of approval that we have and will propose after review of entitlement application documents, then mitigation measures within the Environmental Impact Report (EIR) will adequately address the sewage aspects of the project, and we anticipate a less than significant impact to the sewage facilities.

The North Vineyard Station Specific Plan (NVSSP) area is currently within the CSD-1 and SRCSD boundary and does not have to be annexed.

CSD-1 shall require an approved sewer study prior to the approval of the Final Maps or submittal of the improvement plans for plan check to CSD-1, whichever comes first. Sewer studies shall reflect the increase in residential zoning and the addition of the Water Treatment Facility.

If you have any questions regarding these comments, please call Joyce Ferguson at (916) 876-6098 or myself at (916) 876-6094.

RECEIVED
AUG 25 2004
DEPARTMENT OF ENVIRONMENTAL REVIEW AND ASSESSMENT

Sincerely,

Matt Morgan, P.E.
Development Services

MM/RS: pc

cc: Christoph Dobson
Steve Hong

horizumi082404.ltr.doc

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County Sanitation District 1

Letter 8

STATE OF CALIFORNIA ARNOLD SCHWARZENEGGER, *Governor*

PUBLIC UTILITIES COMMISSION
515 "L" Street, Suite 1119
Sacramento, CA 95814

July 27, 2004

SCH# 2004~~[illegible]~~ 032104
Comments

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JUL 28 2004
STATE CLEARING HOUSE

Clear 8-20-04 e

State Clearinghouse
1400 Tenth Street
Sacramento, CA 95814

RE: Written Comments for the Notice of Completion of the North Vineyard Station Specific Plan Amendment, Financing Plan, Water Treatment Facilities, and Associated Vineyard Point Rezone, Vesting Tentative Subdivision Map, Large Lot Tentative Subdivision Map, and Special Development Permit; and Vineyard Creek Rezone, Vesting Tentative Subdivision Map, and Large Lot Tentative Subdivision Map

Dear Sir:

As the state agency responsible for rail safety within California, we recommend that any development projects planned adjacent to or near any railroad are planned with the safety of the rail corridors in mind. New developments may increase traffic volumes not only on streets and at intersections, but also at at-grade highway-rail crossings. This includes considering pedestrian circulation patterns/destinations with respect to the railroad right-of-way.

Safety factors to consider include the planning for grade separations for major thoroughfares, improvements to existing at-grade highway-rail crossings due to increase in traffic volumes, or pull out lanes for busses, and appropriate fencing to limit the access of trespassers onto the railroad right-of-way.

The above-mentioned safety improvements should be considered when approval is sought for new developments which may impact surrounding at-grade crossings. Working with Commission staff early in the conceptual design phase will help improve the safety to motorists and pedestrians in the City.

If you have any questions in this matter, please call me at (916) 324-7143.

Sincerely,

Bree Arnett
Utilities Engineer
Rail Crossings Engineering Section
Consumer Protection and Safety Division

Letter 9

COUNTY OF SACRAMENTO

Inter-Department Correspondence

July 27, 2004

TO: Steve Hong
Infrastructure Finance Section

FROM: Jeff Clark
Department of Transportation

SUBJECT: **DRAFT ENVIRONMENTAL IMPACT REPORT (DEIR) FOR NORTH VINEYARD STATION SPECIFIC PLAN AMENDMENT, FINANCING PLAN, WATER TREATMENT FACILITIES, AND ASSOCIATED VINEYARD POINT REZONE, VESTING TENTATIVE SUBDIVISION MAP, LARGE LOT TENTATIVE SUBDIVISION MAP, AND SPECIAL DEVELOPMENT PERMIT; AND VINEYARD CREEK REZONE, VESTING TENTATIVE SUBDIVISION MAP, AND LARGE LOT TENTATIVE SUBDIVISION MAP (CONTROL NUMBERS: 03-0082, 02-0532, 04-0144, 02-0293, 03-0385).**

The Department of Transportation has reviewed the Draft Environmental impact Report (DEIR) for the North Vineyard Specific Plan and has the following comment:

In Tables 8-4, 8-7, 8-9, 8-11, 8-14, 8-15 and 8-17 there are roadway segments that have bold level of service definitions indicating that the roadway segment is operating at an unacceptable level of service. Only segments operating at level of service F (LOS F) should be bold. Please make the appropriate corrections for the Final EIR.

If you have any questions, please call me at 874-5553.

JEC:jec

c. Matt Darrow
Tammy Urquhart
David Robinson, Fehr & Peers

Letter 10

COUNTY OF SACRAMENTO

MUNICIPAL SERVICES AGENCY

Inter-Departmental Correspondence

August 20, 2004

TO: Joyce Horizumi, Environmental Coordinator
Department of Environmental Review and Assessment

FROM: Robert Davison, Manager of Special Districts RGD
Infrastructure Finance Section

SUBJECT: **Draft Supplemental Environmental Impact Report (DSEIR) for North Vineyard Station Specific Plan Amendment, Financing Plan, Water Treatment Facilities, and Associated Vineyard Point Rezone, Vesting Tentative Subdivision Map, Large Lot Tentative Subdivision Map, and Special Development Permit; and Vineyard Creek Rezone, Vesting Tentative Subdivision Map, and Large Lot Tentative Subdivision Map (Control Nos. 03-0082, 02-0532, 04-0144, 02-0293, and 03-0385)**

As stated in the subject DSEIR, an air quality analysis prepared for the previous EIR for the North Vineyard Station Specific Plan (Project) concluded that the Project will increase regional concentrations of ozone and would contribute to adverse localized air quality conditions at congested intersections. Any reduction in Project vehicle trips and emissions would help reduce impacts on air quality.

At the Board of Supervisors hearing this year for the levy of County Service Area (CSA) No. 10 Benefit Zone No. 1 (Villages of Zinfandel) Service Charges, the Municipal Services Agency received direction from the Board that similar trip reduction finance mechanisms be implemented in new development areas such as North Vineyard Station, Elverta, and Florin-Vineyard Gap.

Given this Board direction, there should be discussion in the SEIR about this issue and appropriate conditions recommended. The following is a suggested condition for the Project:

"Prior to the approval of final maps, the property owner shall participate in a County Service Area (CSA), or an equivalent financing mechanism to the satisfaction of the Board of Supervisors, for the purpose of funding a variety of transportation demand management (TDM) services to implement an overall TDM strategy that will contribute to the goal of reducing vehicle trips. The purpose of this CSA, or equivalent financing mechanism, is to fund programs and services to implement trip reduction measures that improve mobility and coincidentally reduce air quality impacts. Such programs and services may include but are not limited to:

Joyce Horizumi
August 20, 2004
Page 2

- on-site transportation coordinators and education outreach
- incentives for alternative mode use such as transit subsidies, guaranteed ride home programs, and bicycle purchase subsidies
- programs encouraging people to work close to where they live
- grade school trip pool programs
- transit shuttle system

Any component of the trip reduction strategy implemented through the CSA or equivalent financing mechanism may be revised or discontinued if it is proven to be ineffective. Additional programs and services may be implemented as appropriate to assist in achieving the targeted reduction in daily vehicle trips."

If you have any questions, I can be reached at 874-6926.

RAD:bsg

Distribution: Tim Hawkins
Jeff Gamel
Ron Maertz
Rich Blackmarr
Susan Goetz
Steve Hong
Steve Pedretti
Kurt Schmidt
Mike Penrose
Dan Shoeman
Jeff Clark

P:\Shared Folders\Financing and Specific Plans\NORTH VINEYARD STATION\Memo to Joyce Horizumi re DSEIR for North Vineyard Station.doc

ACKNOWLEDGEMENTS

EIR PREPARERS

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Antonia Barry, *Public Projects Division Manager*

Kate Brownfield, *Long Range Planning Division Manager*

Tim Hawkins, *Associate Environmental Analyst*

Bob DeMorales, *Associate Environmental Analyst (Initial Review)*

SUPPORT STAFF

Linda Bryceson, *Administrative Services Officer II*

Neil Phaby*, Customer Support Specialist*

Justin Maulit*, Office Assistant II*

TECHNICAL STUDIES

Economic & Planning Systems, Public Facilities Financing Plan

Bollard and Brennan, Inc, Noise Analysis

Fehr and Peers, Traffic Study

ECORP Consulting, Inc, Biological Resources

Peak and Associates, Inc, Cultural Resources

Wood Rodgers, Drainage Study

Luhdorff & Scalmanini, Groundwater Treatment and Storage Facilities

MacKay & Somps, Water Supply and Sewer Study

FINAL
ENVIRONMENTAL IMPACT REPORT
Response to Comments

NORTH VINEYARD STATION SPECIFIC PLAN

FEBRUARY 1998

County Control Number: ***93-SFB-0238***
State Clearinghouse Number: SCH #96032057

Sacramento County
Department of Environmental
Review and Assessment

COUNTY OF SACRAMENTO
DEPARTMENT OF ENVIRONMENTAL REVIEW AND ASSESSMENT

DENNIS E YEAST
DIRECTOR

February 25, 1998

TO: ALL INTERESTED PARTIES

SUBJECT: FINAL ENVIRONMENTAL IMPACT REPORT: RESPONSE TO COMMENTS FOR NORTH VINEYARD STATION SPECIFIC PLAN (SCH No. 96032057; County Control No. 93-SFB-0238)

The subject Final Environmental Impact Report (FEIR) is attached for your information. The first of a series of hearings on the proposed project will be held before the Sacramento County Board of Supervisors on February 25, 1998 at 2:30 P.M. A hearing on the FEIR is currently scheduled for March 25, 1998 at 2:30 P.M. Several subsequent public hearings on the project are anticipated in April and May, 1998. Please call the Clerk of the Board at 874-5451 to verify the date, time and place of these hearings.

Please contact Ms. Sabrina Okamura-Johnson AICP or Ms. Joyce Horizumi of this office at (916) 874-7914 if you have questions concerning the FEIR.

Sincerely,

for Dennis E. Yeast
Director

DEY:jh:soj:

827 SEVENTH STREET • ROOM 220 • SACRAMENTO, CALIFORNIA 95814
TELEPHONE: (916) 874-7914 • FAX: (916) 874-8343

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FINAL

Environmental Impact Report: Response to Comments

for

NORTH VINEYARD STATION SPECIFIC PLAN

AMENDMENT AND REZONE

Control Number: 93-SFB-0238

Assessor's Parcel Numbers: Various

This Environmental Impact Report has been prepared pursuant to the California Environmental Quality Act of 1970 (Public Resources Code Division 13). An Environmental Impact Report is an information document which, when its preparation is required by this division shall be considered by every public agency prior to its approval or disapproval of a project. The purpose of an Environmental Impact Report is to provide public agencies with detailed information about the effect which a proposed project is likely to have on the environment; to list ways in which any adverse effects of such a project might be minimized; and to suggest alternatives to such a project.

Prepared by the
COUNTY OF SACRAMENTO
DEPARTMENT OF ENVIRONMENTAL REVIEW AND ASSESSMENT
827 Seventh Street, Room 220
Sacramento, California 95814

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(released February 1998)

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Public Facilities Financing

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- **Final Technical Appendices: Volume I**
  (Separate Document Released February 1998)
- **Final Technical Appendices: Volume II**
  (Separate Document Released February 1998)
- **Final Technical Appendices: Volume III**
  (Separate Document Released February 1998)
- **Draft EIR (With Technical Appendices Volumes I & II)**
  (Separate Document Released July 1997)

PREFACE

Policy Planning Commission Action

On July 22, 1997, a Draft Environmental Impact Report (DEIR) for the proposed North Vineyard Station Specific Plan project was released for public review and comment. Public hearings on the proposed project and the DEIR began with the Policy Planning Commission in regular session on September 10, 1997. The second Public hearing was set for October 14, 1997. At this session the Policy Planning Commission closed public review of the DEIR, and directed staff and the applicant to report back on issues raised during the public hearing. On October 22nd, staff and applicant reported back to the Commission and the project was again continued. On November 25, 1997 the North Vineyard Station Specific Plan Financing Strategy was presented to the Commssion by County Public Infrastructure Planning and Financing staff. The Commission also considered an additional land use alternative known as the "Dispersed Core Alternative" and the project was continued to December 10th.

On December 10, 1997, the Policy Planning Commission met in regular session and voted to make the following recommentations to the Board of Supervisors:

- **General Plan Amendment - Land Use Diagram.** Adopted Resolution No. 97-PO-005 recommending approval of the General Plan Amendment to amend the Land Use Diagram per Exhibit CC(see Plate PD-CC of this FEIR).

- **General Plan Amendment - Transportation Diagram.** Adopted Resolution No. 97-PO-005 recommending approval of the General Plan Amendment to amend the Transportaion Diagram.

- **Community Plan Amendment.** Recommend approval of the Community Plan Amendment per Exhibt "J" to change land use designations of 1, 595.5 acres from AG-20 and AG-20(F) to AR-10 and AR-10(F) to the North Vineyard Station Specific Plan.

- **Specific Plan.** Recommend approval of the Specific Plan Land Use Diagram per Exhibit AA (see Plate PD-AA of this FEIR) with the following exceptions:

  1) Shift the Waterman Road alignment at it's north end such that 3 traffic lanes would be on the east side and 1 traffic lane on the west side of the property line;

  2) Eliminate the park and ride land use designation and substitute with open space on the restricted land (transmission corridor) and RD-3 to RD-5 on the balance of the

park and ride site. Future park and ride area could be developed in open space/ restricted land;

3) Amend Specific Plan residential Land Use Policy #5 to read: 'Design and architecture of proposed residential projects shall consider the Design Guidelines included in the Specific Plan'; and

4) Amend Open Space Policy #5 to read: 'Where residential development abuts Parkways and Drainage Parkways, fences shall adhere to the following design: six(6) feet in height, consisting of three(3) feet wrought iron on top of three(3) feet of masonry wall. The Planning Commission may waive this requirement where privacy is an issue adjacent to a bicycle path.

- **Zoning Ordinance Amendment.** Recommend approval of the Zoning Ordinance Amendment to establish alternative code requirements for the North Vineyard Station Specific Plan.

- **Public Infrastructure/Facilities Financing Plan.** Recommend approval of the Specific Plan Financing Strategy.

In addition, the commission instructed DERA staff to respond to comments (both written and oral testimony) received on the DEIR and to prepare the Final EIR for the project.

Final EIR

The Final EIR (FEIR) consists of comments recieved on the DEIR, and responses to those comments, as well as the Final Technical Appendices Volume I, II and III. The Final Technical Appendices contain the final version, or most current revision, of all technical studies and reports. The Final Technical Appendices with latest revision date are listed below. (Dates that are underlined identify technical studies that were not previously distributed or have been updated since the issuance of the DEIR.):

Final Technical Appendices Volume I
- **Noise Analysis** (December 4, 1996)
- **Biotic Resources** (May 3, 1997 & January 6, 1997).
- **Arborist Reports** (Various dates 1995-96)
- **Cultural Resources** (December 18, 1995 & January 14, 1997)

Final Technical Appendices Volume II
- **Drainage Study** (revised January 30, 1998)
- **UNET Analysis** (January 1997)
- **Water Supply Plan** (revised December 1997).

- **Sewer Study** (January 30, 1998)
- **Hazardous Materials Assessment** (revised March 8, 1996)
- **Geotechnical Engineering Report** (May 31, 1995)

Final Technical Appendices Volume III
- **Transportation Analysis** (revised January 30, 1998, previously in Vol. I)
- **Supplemental Transportation Analysis** (February 6, 1998).

This FEIR document includes a Summary of EIR Findings (Chapter 1), Mitigation Measures (Chapter 2), Project Description and Alternatives (Chapter 3). Chapter 4 is the addendum Traffic and Circulation section that addresses traffic impacts of a commercial core alternative developed during the Planning Commission public hearings (see Volume III, Technical Appendices for Supplemental Traffic Analysis). Chapter 5 summarizes the Public Facilities Financing Strategy and Capital Improvement Program (Attachment 3).

Responses to comments received on the Draft EIR is found in Chapter 6. Changes to the text of the DEIR prompted by the response to comments are included in the "Errata" section as Attachment 2.

This FEIR: Response to Comments document, and Final Technical Studies Volume I, II and III, as well as the previously released DEIR (and related Technical Studies Volume I and II) constitute the complete environmental document for the subject project pursuant to CEQA.

Specific Plan Proponents - Revised

The Specific Plan Proponents, also known as the participating property owners or petitioners, for the project now include: Winncrest Homes, US Home, Florin Investors, and Cal Maple Development. The Saca Properties, Morvai and East Bradshaw Gerber Associates are no longer participating owners. A revised listing of the North Vineyard Station Property Owners Group and their representative, or contacts, was provided by George E. Phillips (September 5, and October 22,1997 letters to DERA).

1998 NVSSP Property Owners Group

Winncrest Homes
9985 Folsom Boulevard
Sacramento, CA 95827
Contact: Mike Winn

Florin Investors
9985 Folsom Boulevard
Sacramento, CA 95827
Contact: John Reynen

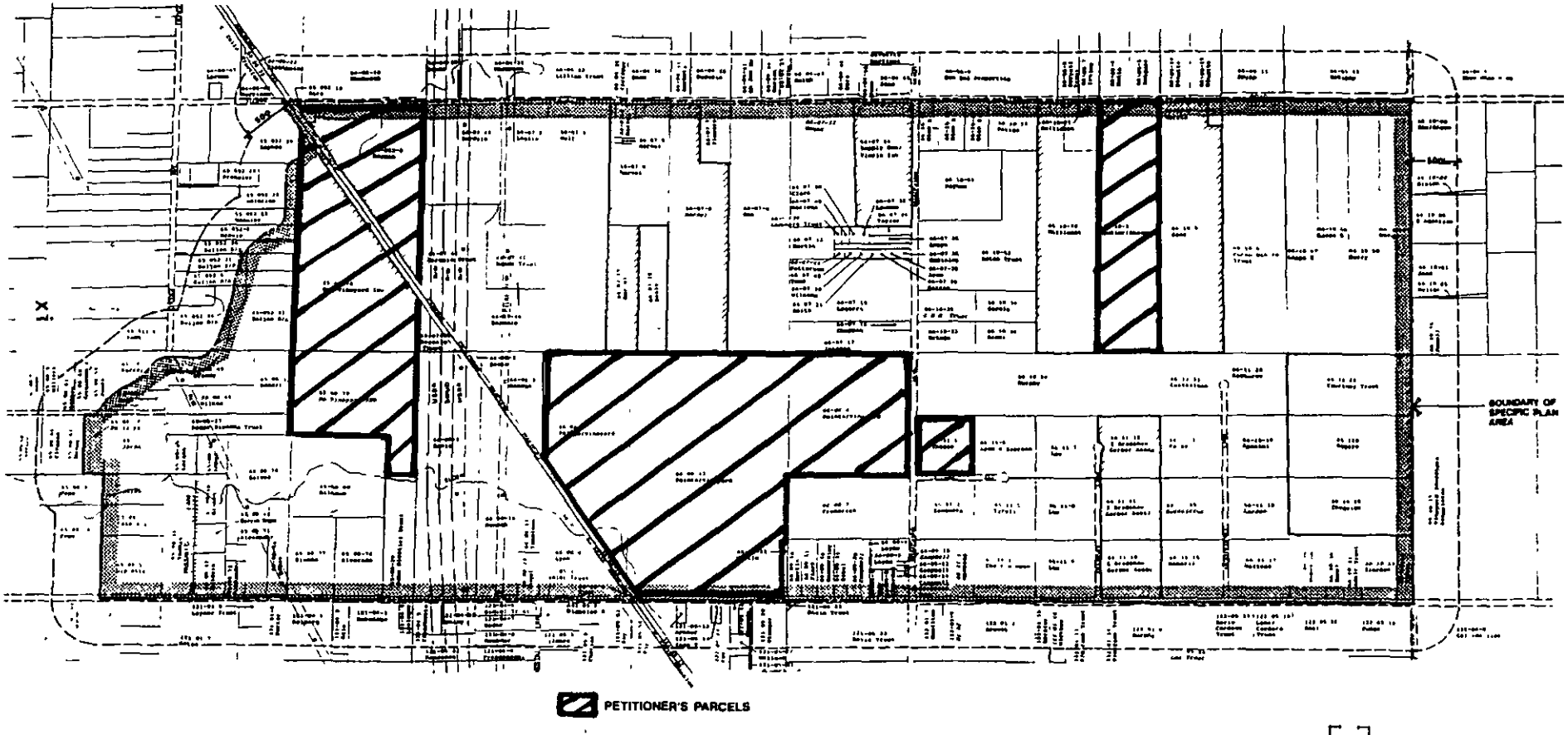
NVSSP Representative
Law Offices of George E. Phillips
555 University Avenue Suite 100
Sacramento, CA 95825
Contact: George Phillips

North Vineyard Investors, US Home Corp.
2366 Gold Meadow Suite 100
Gold River, CA 95827
Contact: Brian Bombeck

Cal Maple Development
P.O. Box 19034
Sacramento, CA 95819
Contact: Phil Courey

Specific Plan Program Manager
County Planning & Community
Development Department
827 7th Street, Room 230
Sacramento, CA 95814
Contract: Dave Pevny

Plate PRF-A is the revised "Location & Property Ownership Map" for the project area (revised Figure 1.7 of the public review draft Specific Plan document). These minor changes in the Specific Plan project document and related references in the DEIR do not affect the content or conclusions of the EIR.



LOCATION & PROPERTY OWNERSHIP MAP
October 1997

SPECIFIC PLAN
NORTH VINEYARD STATION

N

SCALE IN FEET

DONALD C. REINERS INC

Plate PRF-A
Property Ownership Map (rev.10/97)
NVSSP EIR(93-0238)

SUMMARY OF EIR FINDINGS

Introduction

This Master Environmental Impact Report (EIR) assesses the potential environmental effects of the proposed North Vineyard Station Specific Plan (NVSSP) pursuant to the California Environmental Quality Act of 1970 (CEQA, as amended). This EIR assesses the expected individual and cumulative impacts of the ultimate environmental changes resulting from development taking place in conformance with the proposed Specific Plan, identifies means of minimizing potential adverse impacts, and evaluates reasonable alternatives to the proposed project.

This Final volume containing the response to comments received on the Draft EIR along with the original Draft EIR released on July 22, 1997, and three technical appendices constitute the Final EIR for the project.

The EIR will be used as an informational document to the public and by the Sacramento Board of Supervisors in evaluating the proposed project and rendering a decision to approve, deny, or modify the requested General Plan and Community Plan amendments, Transportation Plan diagram Amendment, Zoning Ordinance Amendment, Capital Improvement Program, Drainage Master Plan, Water Supply Master Plan, and Sewer Master Plan.

In addition the EIR will be used as an informational document for the public and other responsible agencies including, but not limited to: the Local Agency Formation Commission (LAFCo) and the Board of Directors for: the Sacramento County Water Agency; the Sacramento Regional County Sanitation District; and the County Sanitation District No. 1.

Significant Effects Which Cannot Be Avoided If The Project Is Implemented

Traffic and Circulation.

Even after implementation of the proposed improvements, the following impacts were found to be significant and unavoidable:

1. The proposed project would result in significant and unavoidable impacts on Bradshaw Road between Florin Road and Elder Creek Road since the project volume of 58,500 VPD would exceed the capacity of 54,000 VPD for a six-lane

roadway.

2. Implementation of the project under cumulative conditions will result in significant and unavoidable impacts at the following intersections:

   - South Watt Avenue/Elder Creek Road
   - Bradshaw Road/Elder Creek Road
   - Elk Grove-Florin/Florin Road
   - Bradshaw Road/Florin Road
   - Elk Grove-Florin Road/Gerber Road

Regional and Local Air Quality.

Sacramento County currently violates state and federal ambient air quality standards, and is presently classified as a non-attainment area by the Environmental Protection Agency (EPA) and the State. In Sacramento, pollutants of greatest concern are ozone precursors [reactive organic gases (ROG) and nitrogen oxides (NOx)], carbon monoxide (CO), particulate matter (PM_{10}), and other visibility reducing matter. In Sacramento, vehicular sources are the primary contributor of carbon monoxide, reactive organic gases and nitrogen oxides.

The project's proposed uses will significantly increase the amount of vehicle emissions for the site over that expected with site development in conformance with existing zoning. The project's vehicle emissions will significantly exceed the Sacramento Metropolitan Air Quality Management District's recommended significance thresholds for ROG NOx and particulates (PM_{10}). Worst case cumulative plus project traffic with associated congestion at build out of the proposed planning area will cause the eight hour State and Federal carbon monoxide standard to be exceeded at four of the eight intersections analyzed.

Traffic Noise Impacts to <u>Existing</u> Receptors.

Significant increases in traffic noise will occur along the major thoroughfares and arterial roadways serving the project area under development of the Preferred Plan or any of the Alternative Plans due to the significant increase in traffic volumes. Impacts to existing sensitive noise receptors (homes and other noise-sensitive uses) located along those roads experiencing substantial noise increases are considered significant and unavoidable. Although future roadway widening projects would be subject to CEQA review and mitigation is imposed at the time of construction, impacts to existing residents may not be fully mitigable due to existing site constraints. Noise barriers or other noise attenuating measures may not be feasible in situations such as front-on lots where the driveway access cannot be blocked by a solid wall or where proposed roadway modifications result in minimal setbacks leaving no space for a wall.

Cumulative Loss of Wildlife Habitats.

Development of the proposed Specific Plan would result in the loss of nearly 1,600 acres of habitats used by a variety of more common (non-listed) wildlife species. Given the magnitude of this change, the loss is considered a cumulatively significant and unavoidable impact of the project. Preservation of wetland/wildlife habitat on site as required by the Wetland Preservation Plan (Environmentally Superior Alternative) would reduce this impact by at least 200 acres, however, the impact would remain cumulatively significant and unavoidable.

Cumulative Ground Water Decline (Interim Impact).

Implementation of the North Vineyard Station Specific Plan Water Master Plan, as outlined by MacKay and Somps, would result in less than significant water supply impacts. However, the implementation of the NVSSP Water Master Plan is contingent on the implementation of the Water Master Plan for Areas Adjacent to the Zone 40 Water Supply Master Plan Update's Study Area, as well as fulfillment of the City of Sacramento American River Place of Use (POU). Until all agreements are in place to wheel "firm" surface water supplies to the Specific Plan area, the project will contribute to the incremental decline in ground water levels. This incremental decline and the dewatering of private wells is a regional issue, beyond the scope of this current project. However, the project will add to the significant adverse cumulative impacts that regional development has on ground water supplies until a firm surface water source is established.

Significant Effects Which Could Be Avoided With Implementation of Mitigation Measures

Land Use.

The Preferred Plan and Alternatives may not meet several General Plan goals, objectives and policies which are intended to maximize efficiency in land use and improve community identity as the projected growth needs of the County are accommodated during the 20-year planning horizon. The densities and land use patterns proposed are similar to the low density development typical other suburban communities. The Preferred Plan and Alternatives are land consumptive and auto-oriented, which tends to exacerbate traffic and air quality impacts; however, these impacts were acknowledged during update of the County General Plan when the subject Specific Plan area was designated for growth. In order to minimize further environmental degradation, it is essential that the projected growth needs of the

General Plan are met within approved urban growth areas. If the designated growth areas are not developed to their full potential, direct, adverse physical impacts to the environment could occur through the further loss of agricultural lands and open space/natural habitat areas.

In conclusion, potential land use compatibility impacts associated with holdover agricultural-residential or general agricultural uses located both within and just outside the Urban Development Area can be mitigated to less than significant levels through implementation of General Plan policies, proposed Specific Plan policies and established Zoning Code development standards. Land use impacts resulting from non-compliance with General Plan goals, objectives and policies are considered potentially significant and adverse. Mitigation of potential land use impacts to a less than significant level would required redesign of the Plan area to be consistent with the intent of the General Plan for new growth areas. This issue is discussed further in the Alternatives section of this document.

Short Term (Construction-Related) Air Quality Impacts.

Short-term increases in ambient air pollutant concentrations as a result of construction-related emissions are considered potentially significant. Unmitigated dust emissions from earthmoving activities would be likely to create short-term violations of ambient PM_{10} standards and to generate emissions exceeding the 275 pounds per day significance threshold. PM_{10} emissions would be a significant impact of the project. Preparation and implementation of a dust control plan would reduce the identified impact to less than significant.

Traffic Noise Impacts to Future Development.

Noise impacts to future development along Plan area roadways are potentially significant under all plan scenarios but would be mitigated through implementation of noise attenuation measures at the time of development. Future projects will be subject to CEQA review and compliance with noise standards. Therefore, traffic related noise impacts to future development could be mitigated to less than significant levels.

Hydrology and Flooding.

Development of the proposed project could result in potentially significant flooding and surface water quality impacts. Flooding impacts can be reduced to a less than significant level by the timely implementation of the proposed North Vineyard Station Specific Plan Drainage Master Plan (DMP) improvements, including construction of downstream Detention Basin E20, and flood control improvements which eliminate or reduce the

existing overflow condition from Gerber Creek into the Specific Plan area. Surface water quality impacts can be reduced to a less than significant level by implementing Best Management Practices for the treatment of urban runoff, such as the water quality treatment facilities proposed within the DMP detention basins, and compliance with the County's Land Grading and Erosion Control Ordinance. Construction of the proposed DMP improvements will result in land alteration activities which will significantly impact wetlands and special status species habitat. In addition, although well developed riparian zones are not present on the project site, there are short reaches of riparian scrub species along the creek corridors which would be affected by construction of the DMP improvements. These impacts upon biological resources can be reduced tc a less than significant level by: (a) implementing a wetland mitigation plan which achieves no net loss of wetland habitat acreage and values; (b) implementing a special status species mitigation plan developed in cooperation with regulatory resource agencies designed to reduce impacts on any special status species identified through determinate surveys to a less than significant level; and (c) providing in-kind replacement plantings on an inch-for-inch basis for any native trees six-inches dbh (diameter at breast height) or larger which must be removed.

Water Supply (Long Term).

Conjunctive use water supply for the County of Sacramento and surrounding regions is a very complex and multi-faceted matter that has received intense attention in the last few years from all of the areas water purveyors, environmental interests and governments. The ongoing efforts by the Sacramento County Water Agency for surface water supply is now coming to fruition.

Interim solutions enhancing water supply have been implemented. Temporary surface water supplies are now being provided to areas which were entirely dependent upon ground water. Agreements are being completed which will provide significant long-term surface water supplies. This Central Valley Project PL 101-514 water supply contracts of up to 22,000 acre-feet of surface water is approaching reality with the draft EIS/EIR just released in July 1997. It is therefore possible that long-term surface water contracts providing an adequate surface water supply will be in place prior to start of development within the Specific Plan Area or soon thereafter. However, initial water supply may be dependent upon groundwater. Wells would be constructed to become an integral part of the ultimatc water delivery system to supplement surface water supply.

Biological Resources.

Wetlands: Development of the project will result in the loss of 51 acres of on-site vernal pools and seasonal wetlands and an additional 7.53 off-site acres (58.83 acres total). The

project will also result in the loss of 18.68 acres (15 acres on-site; 3.68 acres off-site) of perennial creeks, freshwater marsh and drainage swales. Without mitigation, these losses will cumulatively contribute to the loss of wetlands habitat which has already occurred in significant proportions throughout the Central Valley. Mitigation measures have been proposed to fully compensate for the lost wetlands through an off-site mitigation plan or a combination of on-site preservation and off-site compensation.

Fairy Shrimp: Although determinate surveys have yet to be conducted throughout the plan area, some vernal pools and seasonal wetlands affected by the project are known to contain vernal pool fairy shrimp (*Branchinecta lynchi*) and/or vernal pool tadpole shrimp (*Lepidurus packardi*). The species are listed as threatened and endangered, respectively, under the Federal Endangered Species Act. A mitigation plan using preservation and/or creation component will be devised to the satisfaction of the U.S. Fish and Wildlife Service.

Swainson's Hawk: Development of the project will result in the loss of as much 1600 acres of suitable foraging habitat for the Swainson's hawk, listed as a threatened species under the State Endangered Species Act. The loss of foraging habitat will contribute to the cumulatively significant losses experienced regionally. Mitigation standards for compensation of lost foraging habitat as determined by the California Department of Fish and Game will be implemented.

Trees: There are maybe existing mature trees throughout the Plan Area which will be affected by urbanization. To date only the participating owners properties have been surveyed. The only native species identified are black walnuts and black willows. Native oaks and other significant trees may occur in the area that have yet to be identified. The Specific Plan text (6.3.4 Natural Resource Preservation Policies) contains several measures to protect and preserve native oaks during development. The General Plan policy (CO- 130) calling for the preservation of non-oak natives is also included in the Specific Plan policies.

Cultural Resources.

Adoption of any of the proposed project alternatives could result in possible future disturbance of known and unknown prehistoric and/or historic resources. This impact is considered potentially significant since cultural resources are non-renewable resources that may provide important information about past cultures or have cultural and/or religious importance to living populations. Future construction activities related to the implementation of the Specific Plan could be designed to avoid important cultural resources and therefore minimize such impacts. Measures can also be taken to mitigate impacts which result from the accidental discovery of cultural resources during construction activities. Implementation of recommended mitigation measures would reduce potentially significant impacts to cultural

resources to less than significant levels.

Hazardous Materials.

The technical analysis has identified hazardous materials impacts that are potentially significant: soil contamination from use of agricultural chemicals; PCB contamination; friable asbestos; and well contamination. All impacts are considered potentially significant under any of the proposed project alternatives. Incorporation of recommended mitigation measures into the Specific Plan Policies and Development Criteria and implementation of existing government regulations will reduce potentially significant impacts relative to hazardous materials to less than significant levels.

Impacts Found to be Less Than Significant

Public Services.

The increased demands created by the project on the following services can be accommodated through compliance with requirements of the service agencies and no significant environmental impacts are expected:

Energy Facilities and Services
Fire Protection
Sheriff's Services
Schools
Library Facilities
Parks and Recreation
Solid Waste Disposal
Transit Service

Sewer Service.

Development of the proposed NVSSP project and upstream areas will contribute an estimated 16.92 million gallons per day of peak wet weather sewage flows to the regional sewer system. There is an existing 102-inch sewer interceptor located in Elk Grove-Florin Road, approximately ½ mile west of the Specific Plan area, but this facility is nearing capacity. However, the Bradshaw Interceptor is planned for construction in 1997-1998 through the western portion of the Specific Plan area which will provide sufficient capacity to accommodate the proposed project's sewage flows. Specific Plan development will be required to construct the trunk and lateral facilities needed to convey project

sewage flows to the Bradshaw Interceptor. Because planned facilities will be sufficient to accommodate
sewage flows from the proposed land uses, the project's impacts upon sewer service are considered to be less than significant and no mitigation measures are required.

Growth Inducing Impacts

There may be some growth inducing potential associated with the project in that extension and upgrade of urban infrastructures and services will facilitate development of surrounding properties. However, the Plan Area and most of its surrounding lands were committed to urbanization with the adoption of the 1993 General Plan. As discussed in the Land Use section of this document, the Plan Area interfaces to the northeast and east represent the most potential for land use compatibility concerns and thus, the greatest potential for growth inducement would be in those same directions. Those potentially affected lands are shown on the General Plan Land Use Diagram for non-urban land uses: Recreation (along the creek), Agricultural Urban Reserve, General Agriculture and Agricultural Residential. These lands are outside the Urban Policy Area which is defined in the General Plan as that "area expected to receive urban levels of public infrastructure and services within the 20-year planning period." By virtue of being outside the Urban Policy Area, the General Plan policies would not support near term urbanization of those lands. Furthermore, there are lands contiguous to the Plan Area that are within the designated growth area that would be given much higher priority for accommodating growth needs before any additional lands outside the Urban Policy Area are committed for urbanization. For these reasons, the growth inducing potential of the project on lands not otherwise designated for urbanization during the next 20 years is considered less than significant.

Irreversible Environmental Changes

The project, under all alternatives, will result in the irreversible loss of agricultural-residential designated properties and the loss of a rural lifestyle and bucolic scenery. Once land is converted to higher density urban uses and infrastructure is in place, it is highly unlikely that the land would revert back to rural uses. The commitment to urban uses will be permanent.

Cumulative Impacts

Cumulative impacts of the project were fully analyzed throughout this document along with project-specific, singularly significant impacts.

MITIGATION MEASURES

Below is a summary of the environmental mitigation measures identified in the EIR. CEQA requires public agencies to impose all feasible mitigation measures to substantially reduce or eliminate significant adverse project impacts. (CEQA § 21002)

Land Use Mitigation Measures.

In order to ensure consistency between the proposed project and the County General Plan Policy Document and related General Plan Land Use Diagram the following Land Use mitigation measures are recommended:

LU-1 The final General Plan Diagram should be modified to include at least one General Plan TOD land use designations/locations.

LU-2 Consideration should be given to designating a higher density multi-family residential category such as MFR/23-30 which still falls with the General Plan Medium Density Residential category (13-30 du/ac).

LU-3 The final General Plan Diagram shall be modified to include a Recreation/Open Space designation that corresponds to the proposed drainage parkway areas, storm detention basin sites, and the Bradshaw Ranch Golf Course on Bradshaw Road, in order to ensure consistency between the proposed land use plans and the proposed General Plan diagrams with regard to Recreation/Open Space land uses.

LU-4 **The General Plan Diagram will be modified in respect to some park locations, with the Southgate Park District determining exact park locations. The Community Park site shall not be located under power lines and shall be modified to create neighborhood park sites in areas of the plan which are deficient in park land in substantial compliance with the Alternate Land Use Plan dated November 1, 1996, which was developed in cooperation with County Planning and the North Vineyard land owners group.**

NOTE: These recommended mitigation measures must be accomplished as direct changes to the proposed Specific Plan documents.

Public Facilities Financing Mitigation Measure.

The Financing Plan is tangible to environmental impacts in that it provides the mechanism

to ensure that needed improvements to mitigate traffic, drainage, water supply and other infrastructure/service impacts can be implemented in a timely manner. To insure that no maps and/or rezones are approved prior to the approval of a Public Facilities Financing Plan for the North Vineyard Station Specific Plan area, the Public Infrastructure Planning and Financing Section is recommending the following mitigation:

PFF-1 No rezone shall be approved until a Public Facilities Financing Plan for the North Vineyard Station Specific Plan area has been approved by the Board of Supervisors and no final map shall be recorded until the financing mechanisms identified in the Public Facilities Financing Plan have been implemented.

NOTE: This recommended mitigation measures must be accomplished as direct change to the proposed Specific Plan document.

Traffic and Circulation Mitigation Measures:

Proposed Project (Preferred Plan) and Project Alternatives

The following improvements are required to enhance operating conditions or to eliminate the projected deficiencies under **Existing with Project** condition:

TR-1 Widen the section of Elk Grove-Florin/South Watt Avenue from Gerber Road to SR 16 from two to four lanes.

TR-2 Widen the section of Bradshaw Road from Gerber Road to SR 16 from two to four lanes.

TR-3 Widen the section of Florin Road from south Watt Avenue to Bradshaw Road from two to four lanes.

TR-4 Widen the section of Gerber Road from Elk Grove-Florin Road to Bradshaw Road from two to four lanes.

TR-5 Widen the section of SR 16 from South Watt Avenue to Bradshaw Road from two to four lanes. This improvement should be constructed when the daily volume on this segment reaches 16,200 VPD or 90 percent of urban arterial capacity.

TR-6 Widen Elder Creek Road between South Watt Avenue and Excelsior Road to include 12-foot travel lanes and minimum 6-foot shoulders to meet Sacramento County design standards for rural arterials.

TR-7 Widen Excelsior Road between Jackson Road and Calvine Road to include 12-foot travel lanes and minimum 6-foot shoulders to meet Sacramento County design standards for rural arterials.

TR-8 Widen Florin Road between Bradshaw Road and Excelsior Road to include 12-foot travel lanes and minimum 6-foot shoulders to meet Sacramento County design standards for rural arterials.

TR-9 Widen Gerber Road Bradshaw Road and Excelsior Road to include 12-foot travel lanes and minimum 6-foot shoulders to meet Sacramento County design standards for rural arterials.

TR-10 Widen Vineyard Road between Gerber Road and Calvine Road to include 12-foot travel lanes and minimum 6-foot shoulders to meet Sacramento County design standards for rural arterials.

TR-11 Widen Calvine Road between approximately 1,300 feet east of Waterman Road to Excelsior Road to include 12-foot travel lanes and minimum 6-foot shoulders to meet Sacramento County design standards for rural arterials. (The section of Calvine Road from Elk Grove-Florin Road to approximately 1,300 feet east of Waterman Road will be widened from two to four lanes as part of a funded project included in Sacramento County's *1996 Transportation Improvement Plan.)*

TR-12 Modify the intersection of South Watt Avenue at Jackson Road to include a separate left turn lane, two through lanes, and a separate right turn lane on all approaches.

TR-13 Modify the Bradshaw Road/Jackson Road intersection to include the following lane configurations:

- Dual left turn lanes, two through lanes, and a separate right turn lane on the northbound and southbound approaches; and

- One left turn, one through lanes, and a separate right-turn on the eastbound and westbound approaches.

TR-14 Modify the Bradshaw Road/Elder Creek Road intersection to include the following lane configurations:

- One left turn lanes, two through lanes, and a separate right turn lane on the southbound approach;

- One left turn lanes, one through lane, and a shared through/right-turn lane on the northbound approach;

- One left turn and one shared through/right-turn lane on the eastbound approach; and

- One shared left-turn/through lane and one separate right turn lane on the westbound approach.

TR-15 Modify the Bradshaw Road/Florin Road intersection to include the following lane configurations:

- Dual left turn lanes, two through lanes, a separate right turn lane on the northbound and southbound approaches; and

- One left turn lane, two through lanes, and a separate right-turn lane on the eastbound and westbound approaches.

TR-16 Modify the Elk Grove-Florin Road/Gerber Road intersection to include the following lane configurations:

- Dual left turn lanes, two through lanes, and a separate right turn lane on the northbound and southbound approaches;

- One left turn lanes, one through lane, and a separate right-turn lane on the eastbound approach; and

- One left turn lane, one through lane, and a shared through/right-turn lane on the westbound approach.

The provision of northbound dual left turn lanes will require widening of the westbound departure leg on Gerber Road to two lanes before merging to a single travel lane in each direction. The length and merging distance for these lanes shall be approved by Sacramento County Transportation Division staff.

TR-17 Modify the Bradshaw Road/Gerber Road intersection to include the following lane configurations:

- Dual left turn lanes, ~~two~~ **one** through lanes, and a separate right turn lanes on the eastbound and westbound approaches; and

- One left turn lane, two through lanes, and a separate right-turn lane on the northbound and southbound approaches.

The provision of **two** southbound ~~dual left turn~~ **through** lanes **and a dual westbound left-turn lanes** will require widening of the ~~eastbound~~ **southbound** departure leg on ~~Gerber~~ **Bradshaw** Road to two lanes before merging to a single travel lane in each direction. The length and merging distance for these lanes shall be approved by Sacramento County Transportation Division staff.

TR-18 Install a signal at the South Watt Avenue/Elder Creek Road intersection and modify the lane configurations to the satisfaction of the Sacramento County Transportation Division.

TR-19 Install a signal at the Elk Grove-Florin Road/Florin Road intersection and modify the lane configurations to the satisfaction of the Sacramento County Transportation Division.

The following improvements are required to improve operating conditions under **Cumulative With Project** conditions:

TR-20 Access on Bradshaw Road shall be strictly limited between Florin Road and Elder Creek Road. With the exception of signalized intersections, limited driveway access shall be permitted along this roadway segment.

TR-21 Widen Elder Creek Road between South Watt Avenue and Excelsior Road to include 12-foot travel lanes and minimum 6-foot shoulders to meet Sacramento County design standards for rural arterials.

TR-22 Widen Excelsior road between Jackson Road and Calvine Road to include 12-foot travel lanes and minimum 6-foot shoulder to meet Sacramento County design standards for rural arterials.

TR-23 Widen Gerber Road between Vineyard Road and Excelsior Road to include 12-foot travel lanes and minimum 6-foot shoulders to meet Sacramento County design standards for rural arterials.

TR-24 Construct dual right turn lanes on the eastbound approach and triple left turn lanes on the northbound approach of the Bradshaw Road/Jackson Road intersection. Installation of these improvements should occur when the V/C ratio exceeds 1.00 or the peak hour volume for either movement exceeds roughly 950 vehicles.

TR-25 Modify the northbound and southbound approaches to the Jackson Road/Excelsior Road intersection to include a second through lane. Since the northbound departure leg of this intersection is planned to accommodate two lanes, this improvement would only require modifications to Excelsior Road south of Jackson Road. The southbound departure leg would have to be widened to accommodate two lanes before merging into a single southbound lane. The length and merging distance for the second southbound lanes shall be approved by Sacramento County Transportation Division staff.

Alternative Core Alternative

***Mitigation Measures TR-1 through TR-3, TR-5 through TR-14, and TR-16 through* TR-19 (identified for the Preferred Plan) would all be required for the Alternative Core. Mitigation Measure TR-15A would replace TR-15, and TR-20A is a new required Mitigation Measure.**

TR-15A: Modify the Bradshaw Road/Florin Road intersection to include the following lane configurations:

- **Dual left turn lanes, two through lanes, and a separate right-turn lane on the northbound approach;**
- **Dual left turn lanes, *three* through lanes, and a separate right-turn lane on the southbound approach; and**
- **One left turn lane, two through lanes, and a separate right-turn lane on the eastbound and westbound approaches.**

The provisions of southbound dual left turn lanes will require widening of the eastbound departure legs on Florin Road to two lanes before merging to a single travel lane. The length and merging distance for these lanes will be approved by Sacramento County Transportation Division staff. The westbound departure leg will be widened as part of Mitigation Measure TR-3.

Provisions of three southbound lanes will require widening of Bradshaw Road to its ultimate width immediately south of Florin Road. The third southbound lane could be converted to an exclusive right-turn lane at the next downstream intersection or it could be designed to merge into the second through lane. The final configuration will be approved by Sacramento County Transportation Division staff.

These improvements would improve operations at this intersection to LOS

C and LOS E in the a.m. and p.m. peak hours, respectively. Improvements should be implemented when the intersection operates unacceptably based on Sacramento County standards.

TR-20A: Modify the Florin Road/Waterman Road intersection to include the following lane configurations:

- Two through lanes and a separate right-turn lane on the eastbound approach; and
- Two through lanes and a separate left-turn lane on the westbound approach.

The provision of two through lanes in the east-west direction is consistent with Measure TR-3 (widening of Florin Road between Elk Grove-Florin Road and Bradshaw Road from two to four lanes).

These Mitigation Measure improvements would improve operations at this intersection to LOS A and LOS B in the a.m. and p.m. peak hours, respectively. Improvements should be implemented when the intersection operates unacceptably based on Sacramento County standards.

Dispersed Core Alternative

Mitigation Measures TR-1 through TR-14, and TR-17 through TR-19 (identified for the preferred project) would all be required for the Dispersed Core. Mitigation Measures TR-15D and TR-16D would replace TR-15 and TR-16, respectively.

TR-15D: Modify the Bradshaw Road/Florin Road intersection to include the following lane configurations:

- Dual left turn lanes, two through lanes, and a separate right-turn lane on the northbound approach;
- Dual left turn lanes, *three* through lanes, and a separate right-turn lane on the southbound approach; and
- One left turn lane, two through lanes, and a separate right-turn lane on the eastbound and westbound approaches.

The provisions of southbound dual left turn lanes will require widening of the eastbound departure legs on Florin Road to two lanes before merging to a single travel lane. The length and merging distance for these lanes will be approved by Sacramento County Transportation Division staff.

The westbound departure leg will be widened as part of Mitigation Measure TR-3.

Provision of three southbound lanes will require widening of Bradshaw Road to its ultimate width immediately south of Florin Road. The third southbound lane could be converted to an exclusive right-turn lane at the *next downstream intersection or it could be designed to merge into the* second through lane. The final configuration will be approved by Sacramento County Transportation Division staff. (This is the same as Mitigation Measure TR-15A).

These modifications would improve operations at this intersection to LOS C and LOS D in the a.m. and p.m. peak hours, respectively. Improvements should be implemented when the intersection operates unacceptably based on Sacramento County standards.

TR-16D: Modify the Elk Grove-Florin Road/Gerber Road intersection to include the following lane configurations.

- **dual left turn lanes, two through lanes, and a separate right-turn lane on the northbound and southbound approaches;**
- **One left turn lane, one through lane, and *dual right-turn lanes* on the eastbound approach; and**
- **One left turn lane, one through lane, and a shared through/right-turn lane on the westbound approach.**

The provision of northbound dual left turn lanes and two westbound through lanes will require widening of the westbound departure leg on Gerber Road to two lanes before merging to a single travel lane in each direction. The length and merging distance for these lanes will be approved by Sacramento County Transportation Division staff.

These Mitigation Measure improvements would improve operations at this intersection to LOS D in both the a.m. and p.m. peak hours. Traffic Mitigation Measures should be implemented when the intersection operates unacceptably based on Sacramento County standards.

NOTE: These recommended mitigation measures must be accomplished as direct changes to the proposed Specific Plan documents.

Air Quality Construction Impact Mitigation Measures:

To insure construction related air quality impacts for the Plan area are minimized and addressed at the earliest stages of proposed development, the following air quality "institutional" or policy mitigation measures shall be incorporated into the proposed NVSSP Policy Plan: Specific Plan Policies and Development Criteria (NOP Attachment 'P'; FEIR Attachment 1) and/or the proposed Public Review Draft Specific Plan document.

AQ-1 Prepare and implement a dust control plan that includes:
- the use of water or chemical palliatives on disturbed soils;
- the stabilization of soil piles with vegetation or by covering;
- allowing two feet of freeboard and the covering of haul trucks loads;
- conducting no grading during period of high winds exceeding 25 miles per hour

AQ-2 Maintain construction equipment and vehicles in proper running order. Construction contractors shall be required to show written evidence of appropriate maintenance prior to bring equipment on site.

NOTE: These recommended mitigation measures must be accomplished as direct changes to the proposed Specific Plan documents .

Noise Mitigation Measures:

The following mitigation measures shall be added as a development guideline in the Specific Plan **to** ensure that noise impacts for the Plan Area are minimized and addressed at the earliest stages of proposed development:

NS-1 Future noise sensitive residential land uses proposed for development within the future 60 dB L_{dn} traffic or railroad operation noise contours shall be required to prepare an acoustical analysis and to implement identified noise attenuation measures necessary to ensure compliance with the noise standards of the County General Plan Noise Element.

NOTE: This recommended mitigation measure must be accomplished as direct changes to the proposed Specific Plan documents.

Hydrology and Flooding Mitigation Measures:

Implementation of the following mitigation measures will reduce the project's impacts related to hydrology and flooding to a less than significant level.

HY-1. The NVSSP land use plan shall be revised to reflect the drainage parkway corridor and detention basin locations shown on the NVSSP Drainage Master Plan (DMP) contained in the Drainage Study for the North Vineyard Station Specific Plan (MacKay and Somps Engineers, February 1997) (see Plate HY-E of this EIR).

HY-2. In order to ensure that the intended plans for the buffer area portion of the drainage parkway (outside of the drainage channels) are implemented, the NVSSP text shall be revised to clearly specify the funding source or mechanism for acquisition of the buffer area lands (i.e., through CIP financing, land dedication by individual abutting property owners, or some other measure), and to clearly specify the funding source or mechanism for construction of the buffer area landscaping improvements (i.e., through CIP financing, by individual abutting property owners, by the Park District, or some other measure). Future development within the NVSSP area shall ensure that plans for the buffer area portions of the drainage parkways are implemented, consistent with the methods prescribed in the finally adopted NVSSP.

HY-3. Future development within the NVSSP area shall implement the proposed NVSSP Drainage Master Plan (DMP) improvements, including construction of Detention Basin E20 downstream of the Specific Plan area, and construction of a mitigating solution for the existing Gerber Creek overflow condition upstream of the Specific Plan area, as described in the Drainage Study for the North Vineyard Station Specific Plan (MacKay and Somps Engineers, February 1997) (see Plate HY-E of DEIR). Detailed plans for the design and construction of all proposed drainage and water quality facilities, consistent with the NVSSP DMP, shall be submitted to the County Water Resources Division (WRD) for review and approval.

Construction of the NVSSP DMP improvements may be phased, subject to the approval of the County WRD, so long as the project proponent(s) provide hydrologic/hydraulic analyses which demonstrate that the phased improvements will provide adequate urban flood protection to the proposed on-site development, and will not increase flood risks in downstream areas. Such analyses shall verify that the phased improvements will result in no **substantial** increase in peak 100-year flows on Elder Creek at the City/County boundary, and no significant increased 100-year out-of-bank flows in the existing improved channel downstream of the Specific Plan area. **Any phasing must also provide the**

necessary system reliability and be approved by the Water Resources Division.

HY-4. Future development shall comply with the County Land Grading and Erosion Control Ordinance.

HY-5. Future development shall provide stormwater quality source and treatment control measures consistent with Volume 5 of the Draft City/County Drainage Manual. The final design of such source and treatment control measures shall be subject to the approval of the County WRD.

HY-6. Implementation of the proposed NVSSP Drainage Master Plan (DMP) improvements, including construction of Detention Basin E20 and construction of a mitigating solution for the existing Gerber Creek overflow condition upstream of the Specific Plan area, shall not occur until the following items have been submitted to the **Water Resources Division and the** Sacramento County Board of Supervisors for review and approval.

a. A wetland delineation for the improvement area verified by the U.S. Army Corps of Engineers.

b. A detailed mitigation plan for wetlands to be impacted by the proposed improvements which specifically describes the measures which will be implemented to achieve no net loss in wetland habitat acreage and values.

c. Determinate surveys for the improvement area for potentially occurring special status species.

d. A detailed mitigation plan developed in cooperation with the regulatory resource agencies (U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service and California Department of Fish and Game) which is designed to reduce impacts of the proposed improvements on any special status species identified in the determinate surveys to a less than significant level.

e. A tree survey for the improvement area which identifies all native trees six-inches dbh (diameter at breast height) or larger.

f. A detailed tree replacement planting plan which describes the tree plantings/relocation measures to be implemented to provide in-kind replacement plantings on an inch-for-inch basis for any native trees six-inches dbh or larger which will be impacted by the proposed improvements.

HY-7. Implementation of the proposed NVSSP DMP improvements, including construction of Detention Basin E20 and construction of a mitigating solution for the existing Gerber Creek overflow condition upstream of the Specific Plan area, shall not occur until all necessary permits and/or agreements for the proposed improvements have been obtained from the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service and California Department of Fish and Game.

NOTE: Mitigation measures HY-1 through HY-5 must be accomplished as direct changes to the proposed Specific Plan documents . Mitigation Measure HY-6 and HY-7 will be subject to the Mitigation Monitoring and Reporting Program noted below.

Biological Resources Mitigation Measures.

BR-1. If off-site mitigation is adopted by the Board of Supervisors, an Off-site Mitigation Plan for each development will be required as described below.

Off-site Mitigation Plan. In consultation within the U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service, an Off-site Wetland Mitigation Plan shall be prepared for each development project within the Specific Plan area. All vernal pools and seasonal wetlands shall be mitigated off-site at an agency approved mitigation bank or other property approved by the regulatory agencies. The Plan shall incorporate the following components.

a. A detailed wetland delineation verified by the U.S. Army Corps of Engineers;

b. The location of the wetland creation site(s) and the acquisition site(s);

c. A detailed map of the wetland creation site(s) showing the acreage, distribution and type of wetlands to be created;

d. Vernal pool and seasonal wetlands compensation at ratios sufficient to ensure no net loss of vernal pool and seasonal wetlands acreage, values, and functions. The mitigation ratio for each wetland type shall be specified. Compensation vernal pools and seasonal wetlands shall:

- be supported primarily by direct rainfall, and shall be designed to
- meet or exceed the hydrophytic conditions and operating functions of the existing vernal pools and seasonal wetlands proposed for impact.

- mitigate the loss of special-status species 'habitat, including fairy shrimp, as required by the U.S. Fish and Wildlife Service. For every acre of fairy shrimp habitat impacted, the applicant shall construct one acre of new habitat and purchase two acres of fairy shrimp habitat preservation credits at an agency approved mitigation bank.

e. A wetland monitoring and maintenance program prepared according to the requirements of the U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service.

Monitoring: Monitoring shall be designed to determine that sufficient water is available to produce the required periods of inundation and subsequent soil saturation to support a desired biological community. In addition, the monitoring shall determine the need for remedial action in the form of pool modification, including excavation, fill, and/or modification of hydrologic connections, required to improve the pool water balance. Specific performance standards for determining success of the created wetlands shall be proposed. Monitoring shall occur for at least 5 years, or as required by the U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service.

Short-term monitoring requirements will be established by the Corps Section 404 permit authorization. If the Corps, in consultation with the USFWS, the U. S. Environmental Protection Agency, and the CDFG, determines that wetland development is successful at the end of the prescribed monitoring period (normally 5 years), no further monitoring will be required. Should short-term monitoring indicate that performance standards are not met, plan modifications will be submitted to the Corps for approval. Approved modifications shall be implemented and monitoring will continue until success criteria are met.

Maintenance: A mechanism satisfactory to the Corps shall be formed to fund long-term maintenance of compensation areas to assure that the wetlands are maintained in a natural state. Long-term maintenance shall include restricted recreational use, erosion control, and maintenance trails, or other similar structures.

At the time the applicant obtains a permit to impact wetlands, alternative strategies may have been adopted to mitigate for wetland impacts. The above measures do not preclude the implementation of these new alternatives. The final acreage of offsite mitigation will be determined by the U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service when specific development projects are permitted by those agencies.

BR-2. If the On-site Wetland Preserve is approved, an On-site Wetland Preservation Plan shall be prepared that preserves at least 200 contiguous acres as a wetland preserve east of Bradshaw Road. Preservation shall focus on those wetlands with the highest habitat values. A map showing the wetland preserve boundaries shall be prepared, including the rationale for the preserve boundaries. The plan shall address all aspects of wetland preservation including buffering of incompatible land uses, access, maintenance, monitoring, and mitigation banking. The required Plan shall be submitted to the Sacramento County Department of Environmental Review and Assessment, U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service and California Department of Fish and Game for approval prior to its implementation..

All vernal pools and seasonal wetlands outside the preserve area shall be mitigated offsite at an agency approved mitigation bank to the satisfaction of the U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service.

BR-3. A Wetland Mitigation Plan for Elder and Gerber Creeks shall be prepared and incorporated into the Specific Plan. This plan shall address phasing of channel modifications, establishment of wetlands (i.e., passive, active, combination), species composition, maintenance and monitoring. The plan shall require channel bottom and bank materials to be substantially the same as comparable natural streams. Natural arrays of riffles, runs and pools shall be incorporated into the design of the creek channels. The required Plan shall be submitted to the Sacramento County Department of Environmental Review and Assessment, **County Water Resources Division,** U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service and California Department of Fish and Game for approval prior to its implementation.

BR-4. ~~To mitigate for the potential loss of 1600± acres of Swainson's hawk foraging habitat, implement one of the following alternatives:~~ **Prior to the approval of Improvement Plans or Building Permits, whichever occurs first, implement one of the following options to mitigate for the loss of 1,595± acres of Swainson's hawk foraging habitat:**

a. The project proponent shall preserve 0.50 acre of similar habitat for each acre lost within a 10-mile radius of the project site. This land shall be protected through fee title or conservation easement (acceptable to the California Department of Fish and Game);

b. The project proponent shall enter in the formal consultation with the California Department of Fish and Game pursuant to ~~the Fish and Game Code~~, Section 2081 **of the California Fish and Game Code.**. A California Endangered Species Act (CESA) Memorandum of Understanding (MOU) and Management

Agreement shall be completed prior to issuance of any building permits for the site.

c. **The project proponent shall submit payment of a Swainson's hawk impact mitigation fee per acre impacted to the Department of Planning and Community Development in the amount as set forth in Chapter 16.130 of the Sacramento County Code as such may be amended from time to time and to the extent that said Chapter remains in effect.**

~~e~~d. Should the County Board of Supervisors adopt a Swainson's hawk mitigation policy/program (which may include a mitigation fee~~) payable prior to issuance of building permits)~~ prior to the implementation of one of the measures above, the project proponent may be subject to that program instead.

<u>Note</u>: Actual habitat loss will occur when rezones and related land use entitlements are granted. Implementation of this mitigation measure will occur on a project -by-project basis with each rezone application.

BR-5. Using protocol acceptable to the regulatory agencies with authority over these species, determinate surveys for potentially-occurring special-status species or their habitat shall be conducted prior to development and permitting within the Specific Plan area. *If any of the species <u>or</u> their habitat are indicated, project/plan-specific* mitigation measures shall be developed in consultation with Sacramento County, the California Department of Fish and Game, and/or the U.S. Fish and Wildlife Service to mitigate those impacts to less than significant levels, if possible. The mitigation plan(s) developed for species or habitat preservation shall emphasize a multi-species approach, to the maximum extent possible.

- Where impacts include taking of a federally-listed species, a Section 10, Incidental Take permit, or a Biological Opinion resulting from Section 7 Consultation with another federal agency shall be obtained, and permit conditions implemented.

- Where impacts include taking of a California-listed species, a Section 2081 Management Agreement shall be negotiated with the California Department of Fish and Game, and conditions of that management agreement implemented.

BR-6. In conjunction within the required Wetland Mitigation Plan for the creeks, a Drainage Parkway Plan for Elder and Gerber Creeks shall be prepared. This plan shall provide the following information:

a. A map that depicts the configuration of the creek corridors, including overall width, low-flow channel width, bank slopes, and buffer widths;

b. The location of all trails, bikeways, maintenance roads and channel access points, street crossings, water quality basins and other structures within the corridors;

c. Designations of all lands uses, including recreation (passive or active), mitigation, natural area, water quality, storm water detention, etc.,

d. Policies addressing public access into the corridors, including limitations on use;

e. A policy statement requiring the use native plants within the corridor, including a planting palette of acceptable species;

f. Maintenance and monitoring requirements for the creek channels and mitigation areas;

g. An appropriate funding mechanism to establish, operate and maintain the creek corridors, and;

h. All requirements of State and Federal regulatory agencies pertaining to the preservation and management of special status species.

If the proposed project is approved, the corridor width shall be in substantial compliance with that proposed in the Specific Plan (150 to **420** feet). Adoption of the Alternative Drainage Corridor Policies would increase the corridor width to 600 feet. Widths of this alternative may be reduced based on unavoidable physical constraints, however, the minimum width shall be 150 feet on each side of the drainage channel bottom. These alternatives are not intended to preclude other alternatives for the drainage parkway corridors. Such changes may involve combinations of different channel widths, corridor configurations and policies. The Drainage Parkway Plan shall be submitted to the **County Water Resources Division and the** Sacramento County Board of Supervisors for approval, prior to approval of development of the Specific Plan area.

Note: These biological mitigation measures will be subject to a Mitigation Monitoring and Reporting Program as noted below.

Cultural Resources Mitigation Measures:

Adoption of the proposed project could result in future disturbance of known and unknown prehistoric and/or historic resources. These impacts are considered potentially significant. As noted above, the County of Sacramento has an environmental review process for projects involving discretionary permits that requires cultural resource reports to be prepared in situations where development is proposed in areas known to be sensitive for cultural (archaeological and historic) resources. Since future development within the Plan area will require additional entitlements such development will also be subject to further discretionary review. Potential construction-related impacts to cultural resources will be addressed at that time. However, to ensure impacts to cultural resources are minimized and addressed at the earliest stages of proposed development, the following measures shall be incorporated into the North Vineyard Station Specific Plan, Draft Policy Plan and development standards and/or design guidelines.

CR-1. Encourage the retention of important cultural features in the design of future projects.

CR-2. Cultural resource surveys will be required in areas not previously subject to intensive investigation (that portion of the Plan Area not currently identified as the proponent's parcels). If ground disturbing activities are planned within or adjacent to the boundaries of any identified archaeological sites, the following shall be required:

(a) The site area will be inspected by a qualified, professional archaeologist to assess the condition of the property and the determine the current status of the deposit.

(b) Based on this review and, as appropriate, a subsurface testing program will be developed and implemented to determine if the property meets criteria specified in Appendix K of CEQA to qualify as an important archaeological resource. The course of the testing program should be clearly delineated in a research design which outlines prehistory of the area; research domains, questions, and data requirements; research methods inclusive of field and laboratory studies; report preparation; and significance criteria.

(c) Following field investigations, a technical report describing the evaluation program should be prepared. At a minimum this report shall include the elements discussed in the research design, as well as

a description of the recovered site assemblage and a significance evaluation. If, based on the results of the testing program, a site is not determined to be an important archaeological resource, then effects to it would have been reduced to less than significant.

(d) If the site is determined to be an important archaeological resource, then additional mitigation measures, namely data recovery investigations may be necessary to reduce impacts to less than significant.

(e) As Native American archaeological resources are involved, *identification and treatment shall be conducted in consultation with the* local Native American community.

(f) Archaeological investigations shall be conducted by a qualified, professional archaeologist who either meets the federal standards as stated in the Code of Federal Regulations (36 CFR 61) or is certified by the Society of Professional Archaeologists (SOPA).

CR-3. An historic architectural study shall be performed by a qualified, professional architectural historian if historic structures or buildings are present on the particular parcel subject to development. This inventory should comply with NEPA and/or CEQA and include consultation with the NCIC and the Sacramento County Historical Society. The resulting report should include results of the background literature search and field survey, an historic context statement, an analysis of the potential significance of noted resources, and recommendations for their preservation and/or mitigation.

CR-4. Should any cultural resources, such as structural features, unusual amounts of bone or shell, artifacts, human remains, or architectural remains be encountered during <u>any</u> future development activities, work shall be suspended. Depending on the location of the activities, the appropriate Lead Agency shall be immediately contacted. This agency will coordinate any necessary investigation of the find with appropriate specialists as needed. The project proponent shall be required to implement any mitigation deemed necessary for the protection of the cultural resources. In addition, pursuant to Section 5097.97 of the State Public Resources Code and Section 7050.5 of the State Health and Safety Code, in the event of the discovery of human remains, all work is to stop and the County Coroner shall be immediately notified. If the remains are determined to be

Native American, guidelines of the Native American Heritage Commission shall be adhered to in the treatment and disposition of the remains.

NOTE: These recommended mitigation measures must be accomplished as direct changes to the proposed Specific Plan documents.

Hazardous Materials Mitigation Measures:

To ensure hazardous materials impacts for the Plan Area are minimized and addressed at the earliest stages of proposed development, the following hazardous materials "institutional" or policy mitigation measures shall be incorporated into the proposed Specific Plan Policies and Development Criteria (Attachment 4?) and/or the proposed Public Review Draft Specific Plan document.

TX-1 Future development on non-proponent properties identified as requiring a "site reconnaissance" on Table HM-1 shall prepare and submit a site-specific field reconnaissance or preliminary site assessment according to State and County requirements. If contamination is identified, remediation and disposal procedures shall be undertaken by qualified personnel in accordance with all applicable regulations, and in coordination with all applicable agencies.

TX-2 Future development and/or demolition of pre-1979 structures shall prepare and submit an asbestos survey according to State and County requirements. If asbestos contamination is identified, remediation and disposal procedures shall be undertaken by qualified personnel in accordance with all applicable regulations, and in coordination with all applicable agencies.

TX-3 Future development shall identify existing septic tanks and/or water wells to be abandoned and abandon them according to State and County requirements.

TX-4 Future development on properties identified as requiring proper "debris removal" on Table HM-4 shall remove all debris, trash, rubble, refuse and abandoned, discarded and/or out-of-service items from the affected properties and dispose of or recycle off-site according to State and County requirements.

NOTE: These recommended mitigation measures must be accomplished as direct changes to the proposed Specific Plan documents .

Mitigation Measures Are Not Required For Following Impact Areas.

Public Services impacts identified as less than significant do not require mitigation The following public services are impacted to a less than significant level:

- Energy Facilities/ Services, including impacts to SMUD and PG&E
- Fire Protection
- Sheriff's Patrol Services
- Schools, including Elk Grove Unified School District
- Library Services
- Parks and Open Space, including impacts to Southgate Recreation & Park District
- Solid Waste Disposal
- Sewer Service, including impacts to SRCSD and CSD-1

Mitigation Monitoring and Reporting Program (MMRP).

Specific Plans serve as an application tool to implement the Sacramento County General Plan on an area-specific basis. The proposed Specific Plan project once adopted will serve as both a policy and regulatory document for development of the plan area.

Approval of the proposed Specific Plan will result in a number of significant and adverse environmental impacts. As noted above, many of these significant impacts can either be reduced or minimized in magnitude, or can be reduced to a less than significant level of impact through compliance with identified mitigation measures. Due to the nature of the Specific Plan project, many of these measures are institutional, or policy-related, which , if to be implemented, should be accommodated through changes in the Specific Plan itself.

The policy mitigation measures will typically require actual revisions to the proposed Specific Plan documents, including but not limited: to the 5/97 Public Review Draft NVSSP document (text, tables, exhibits, etc.), the 11/97 Draft Financing Strategy and related Capital Improvement Program (CIP). Where policy mitigation measures are complied with as a result of document revisions (i.e. folded into the project) no MMRP will be required.

If adopted, the following policy mitigation measures are to be incorporated into the final Specific Plan project documents themselves:

- Land Use Measures LU-1 through LU-4
- Public Facilities Financing Measure PFF-1
- Traffic & Circulation Measures TR-1 through TR-25

- Air Quality Construction Measure AQ-1 through AQ-2
- Hydrology & Flooding Measures HY-1 through HY-5
- Noise Measure NS-1
- Cultural Resources Measures CR-1 through CR-4
- Hazardous Materials Measures TX-1 through TX-4

Some mitigation measures set specific performance benchmarks which do not lend themselves to being incorporated into the Specific Plan. These mitigation measures primarily involve impacts related to drainage improvements, biological resources and completion of the Financing Plan/CIP.

An MMRP is required where mitigation measures are not, or can not, be complied with through Specific Plan revisions. Pursuant to Section 21081.6 of the Public Resources Code and Chapter 20.02 of the Sacramento County Code, an MMRP must be implemented to assure diligent and good faith compliance with the remaining mitigation measures recommended in this EIR.

In order to identify any remaining environmental mitigation measures at the earliest stages of proposed development, and to eliminate the need for the recordation of a separate Mitigation Monitoring and Reporting Program (MMRP) for the Specific Plan project itself, the proposed Specific Plan document shall be modified to include the following text revision to section "11.5 Mitigation Monitoring".

Note: the following new EIR text is presented in a different font (Universal) to distinguish it as new EIR text that is to be incorporated into the text of the final NVSSP Specific Plan document. The bold font (**Universal**) denotes new Specific Plan text. The strike out font (~~Universal~~) denotes deleted Specific Plan text.

11.5 Mitigation Monitoring.

The California Environmental Quality Act requires all state and local agencies to establish reporting and monitoring programs for projects approved by a public agency whenever approval involves adoption of either a mitigated negative declaration or specified environmental findings related to environmental impact reports. For Sacramento County, the appropriate department for establishing and maintaining this program is the Department of Environmental Review and Assessment.

The Mitigation Monitoring and Reporting Program (MMRP) is intended to satisfy the requirements of CEQA as they relate to the final Environmental Impact Report for the North Vineyard Station Specific Plan, prepared by Department of

Environmental Review and Assessment. This monitoring program is intended to be used by County staff and the project developers in ensuring compliance with adopted mitigation measures during project implementation.

Monitoring and documenting the implementation of mitigation measures will be coordinated by DERA staff. DERA staff will monitor mitigation implementation as outlined in the ~~recorded~~ **adopted** MMRP for the North Vineyard Station Specific Plan **which follows.**

11.6 NVSSP MMRP

Pursuant to Section 21081.6 of the Public Resources Code and Chapter 20.02 of the Sacramento County Code, the following Mitigation Monitoring and Reporting Program has been established for this Specific Plan area. The purpose of this program is to assure diligent and good faith compliance with the Mitigation Measures which have been recommended in the environmental document, and adopted as part of the project or made conditions of project approval, in order to avoid or mitigate potentially significant effects on the environment.

All public improvement and private development projects within the plan area will be subject to an MMRP compliance review by DERA staff during the initial CEQA review period to determine which, if any, of the following adopted mitigation measures are applicable to the proposed project.

Hydrology & Flooding Mitigation Measures:

HY-6 Implementation of the proposed NVSSP Drainage Master Plan (DMP) improvements, including construction of Detention Basin E20 and construction of a mitigating solution for the existing Gerber Creek overflow condition upstream of the Specific Plan area, shall not occur until the following items have been submitted to the Sacramento County Board of Supervisors for review and approval.

(a) A wetland delineation for the improvement area verified by the U.S. Army Corps of Engineers.

(b) A detailed mitigation plan for wetlands to be impacted by the proposed improvements which specifically describes the measures which will be implemented to achieve no net loss in wetland habitat acreage and values.

(c) Determinate surveys for the improvement area for potentially

occurring special status species.

(d) A detailed mitigation plan developed in cooperation with the regulatory resource agencies (U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service and California Department of Fish and Game) which is designed to reduce impacts of the proposed improvements on any special status species identified in the determinate surveys to a less than significant level.

(e) A tree survey for the improvement area which identifies all native trees six-inches dbh (diameter at breast height) or larger.

(f) A detailed tree replacement planting plan which describes the tree plantings/relocation measures to be implemented to provide in-kind replacement plantings on an inch-for-inch basis for any native trees six-inches dbh or larger which will be impacted by the proposed improvements.

HY-7. Implementation of the proposed NVSSP DMP improvements, including construction of Detention Basin E20 and construction of a mitigating solution for the existing Gerber Creek overflow condition upstream of the Specific Plan area, shall not occur until all necessary permits and/or agreements for the proposed improvements have been obtained from the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service and California Department of Fish and Game.

Biological Mitigation Measures:

BR-1. If off-site mitigation is adopted by the Board of Supervisors, an Off-site Mitigation Plan for each development will be required as described below.

Off-site Mitigation Plan. In consultation within the U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service, an Off-site Wetland Mitigation Plan shall be prepared for each development project within the Specific Plan area. All vernal pools and seasonal wetlands shall be mitigated off-site at an agency approved mitigation bank or other property approved by the regulatory agencies. The Plan shall incorporate the following components.

a. A detailed wetland delineation verified by the U.S. Army Corps of

Engineers;

b. The location of the wetland creation site(s) and the acquisition site(s);

c. A detailed map of the wetland creation site(s) showing the acreage, distribution and type of wetlands to be created;

d. Vernal pool and seasonal wetlands compensation at ratios sufficient to ensure no net loss of vernal pool and seasonal wetlands acreage, values, and functions. The mitigation ratio for each wetland type shall be specified. Compensation vernal pools and seasonal wetlands shall:

- be supported primarily by direct rainfall, and shall be designed to

- meet or exceed the hydrophytic conditions and operating functions of the existing vernal pools and seasonal wetlands proposed for impact.

- mitigate the loss of special-status species 'habitat, including fairy shrimp, as required by the U.S. Fish and Wildlife Service. For every acre of fairy shrimp habitat impacted, the applicant shall construct one acre of new habitat and purchase two acres of fairy shrimp habitat preservation credits at an agency approved mitigation bank.

e. A wetland monitoring and maintenance program prepared according to the requirements of the U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service.

Monitoring: Monitoring shall be designed to determine that sufficient water is available to produce the required periods of inundation and subsequent soil saturation to support a desired biological community. In addition, the monitoring shall determine the need for remedial action in the form of pool modification, including excavation, fill, and/or modification of hydrologic connections, required to improve the pool water balance. Specific performance standards for determining success of the created wetlands shall be proposed. Monitoring shall occur for at least 5 years, or as required by the U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service.

Short-term monitoring requirements will be established by the Corps Section 404 permit authorization. If the Corps, in consultation with the USFWS, the U. S. Environmental Protection Agency, and the CDFG, determines that wetland development is successful at the end of the prescribed monitoring period (normally 5 years), no further monitoring will be required. Should short-term monitoring indicate that performance standards are not met, plan modifications will be submitted to the Corps for approval. Approved modifications shall be implemented and monitoring will continue until success criteria are met.

Maintenance: A mechanism satisfactory to the Corps shall be formed to fund long-term maintenance of compensation areas to assure that the wetlands are maintained in a natural state. Long-term maintenance shall include restricted recreational use, erosion control, and maintenance trails, or other similar structures.

At the time the applicant obtains a permit to impact wetlands, alternative strategies may have been adopted to mitigate for wetland impacts. The above measures do not preclude the implementation of these new alternatives. The final acreage of offsite mitigation will be determined by the U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service when specific development projects are permitted by those agencies.

BR-2. If the On-site Wetland Preserve is approved, an On-site Wetland Preservation Plan shall be prepared that preserves at least 200 contiguous acres as a wetland preserve east of Bradshaw Road. Preservation shall focus on those wetlands with the highest habitat values. A map showing the wetland preserve boundaries shall be prepared, including the rationale for the preserve boundaries. The plan shall address all aspects of wetland preservation including buffering of incompatible land uses, access, maintenance, monitoring, and mitigation banking. The required Plan shall be submitted to the Sacramento County Department of Environmental Review and Assessment, U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service and California Department of Fish and Game for approval prior to its implementation..

All vernal pools and seasonal wetlands outside the preserve area shall be mitigated offsite at an agency approved mitigation bank to the satisfaction of the U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service.

BR-3. A Wetland Mitigation Plan for Elder and Gerber Creeks shall be prepared and incorporated into the Specific Plan. This plan shall address phasing of channel modifications, establishment of wetlands (i.e., passive, active, combination), species composition, maintenance and monitoring. The plan shall require channel bottom and bank materials to be substantially the same as comparable natural streams. Natural arrays of riffles, runs and pools shall be incorporated into the design of the creek channels. The required Plan shall be submitted to the Sacramento County Department of Environmental Review and Assessment, U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service and California Department of Fish and Game for approval prior to its implementation.

BR-4. Prior to the approval of Improvement Plans or Building Permits, whichever occurs first, implement one of the following options to mitigate for the loss of 1,595± acres of Swainson's hawk foraging habitat:

a. The project proponent shall preserve 0.50 acre of similar habitat for each acre lost within a 10-mile radius of the project site. *This land shall be protected through fee title or* conservation easement (acceptable to the California Department of Fish and Game);

b. The project proponent shall enter in the formal consultation with the California Department of Fish and Game pursuant to Section 2081 of the California Fish and Game Code.. A California Endangered Species Act (CESA) Memorandum of Understanding (MOU) and Management Agreement shall be completed prior to issuance of any building permits for the site.

c. The project proponent shall submit payment of a Swainson's hawk impact mitigation fee per acre impacted to the Department of Planning and Community Development in the amount as set forth in Chapter 16.130 of the Sacramento County Code as such may be amended from time to time and to the extent that said Chapter remains in effect.

d. Should the County Board of Supervisors adopt a Swainson's hawk mitigation policy/program (which may include a *mitigation fee) prior to the implementation of one of the*

measures above, the project proponent may be subject to that program instead.

Note: Actual habitat loss will occur when rezones and related land use entitlements are granted. Implementation of this mitigation measure will occur on a project -by-project basis with each rezone application.

BR-5. Using protocol acceptable to the regulatory agencies with authority over these species, determinate surveys for potentially-occurring special-status species or their habitat shall be conducted prior to development and permitting within the Specific Plan area. If any of the species or their habitat are indicated, project/plan-specific mitigation measures shall be developed in consultation with Sacramento County, the California Department of Fish and Game, and/or the U.S. Fish and Wildlife Service to mitigate those impacts to less than significant levels, if possible. The mitigation plan(s) developed for species or habitat preservation shall emphasize a multi-species approach, to the maximum extent possible.

- Where impacts include taking of a federally-listed species, a Section 10, Incidental Take permit, or a Biological Opinion resulting from Section 7 Consultation with another federal agency shall be obtained, and permit conditions implemented.

- Where impacts include taking of a California-listed species, a Section 2081 Management Agreement shall be negotiated with the California Department of Fish and Game, and conditions of that management agreement implemented.

BR-6. In conjunction within the required Wetland Mitigation Plan for the creeks, a Drainage Parkway Plan for Elder and Gerber Creeks shall be prepared. This plan shall provide the following information:

a. A map that depicts the configuration of the creek corridors, including overall width, low-flow channel width, bank slopes, and buffer widths;

b. The location of all trails, bikeways, maintenance roads and channel access points, street crossings, water quality basins and other structures within the corridors;

c. Designations of all lands uses, including recreation (passive or

active), mitigation, natural area, water quality, storm water detention, etc.;

d. Policies addressing public access into the corridors, including limitations on use;

e. A policy statement requiring the use native plants within the corridor, including a planting palette of acceptable species;

f. Maintenance and monitoring requirements for the creek channels and mitigation areas;

g. An appropriate funding mechanism to establish, operate and maintain the creek corridors, and;

h. All requirements of State and Federal regulatory agencies pertaining to the preservation and management of special status species.

If the proposed project is approved, the corridor width shall be in substantial compliance with that proposed in the Specific Plan (150 to 420 feet). Adoption of the Alternative Drainage Corridor Policies would increase the corridor width to 600 feet. Widths of this alternative may be reduced based on unavoidable physical constraints, however, the minimum width shall be 150 feet on each side of the drainage channel bottom. These alternatives are not intended to preclude other alternatives for the drainage parkway corridors. Such changes may involve combinations of different channel widths, corridor configurations and policies. The Drainage Parkway Plan shall be submitted to the Sacramento County Board of Supervisors for approval, prior to approval of development of the Specific Plan area.

PROJECT DESCRIPTION AND ALTERNATIVES

Project Characteristics

Background.

The North Vineyard Station Specific Plan (Control Number 93-SFB-0238) was initiated by the Board of Supervisors on January 19, 1994. The North Vineyard Station Specific Plan (NVSSP) project includes both written and graphic descriptions of how all land within the Plan Area will ultimately be used and developed **as proposed in the May 28, 1997 North Vineyard Station Specific Plan document.** In addition, the proposed Specific Plan includes both written and graphic descriptions of the location, extent, and cost (1996 dollars) of public facilities and infrastructure required to serve ultimate development of the Plan Area if approved.

A Specific Plan is an application tool to implement the Sacramento County General Plan on an area-specific basis. The proposed Specific Plan will serve as both a policy and regulatory document for the project/Plan Area. The proposed Plan includes policy direction and development concepts for development of the Plan Area, generally consistent with the County's General Plan. The Plan also includes development standards and design guidelines which address unique situations within the Plan Area.

The project/Plan Area encompasses 1,590± acres of the Vineyard Community Planning Area. The Plan Area is bounded by Florin Road to the north, Gerber Road and/or Gerber Creek on the south, the northerly extension of Vineyard Road on the east, and generally by Elder Creek on the west (see Plate PD-A).

The NVSSP project is a joint effort of the Sacramento County Planning and Community Development Department and individual property owners within the Plan Area represented by attorney, George E. Phillips. (The list of individual property owners affiliated with this project and location of their property **is disclosed in the Preface**). Numerous workshops in the community have been conducted to involve other local citizens and property owners in the preparation of the proposed specific plan land use plan for the project area. The land use plan prepared during this process was presented to the County Board of Supervisors in July 1995. The Board endorsed this as the Preferred Specific Plan, but also directed that three project alternative plans be prepared for consideration during the environmental review and public hearing process.

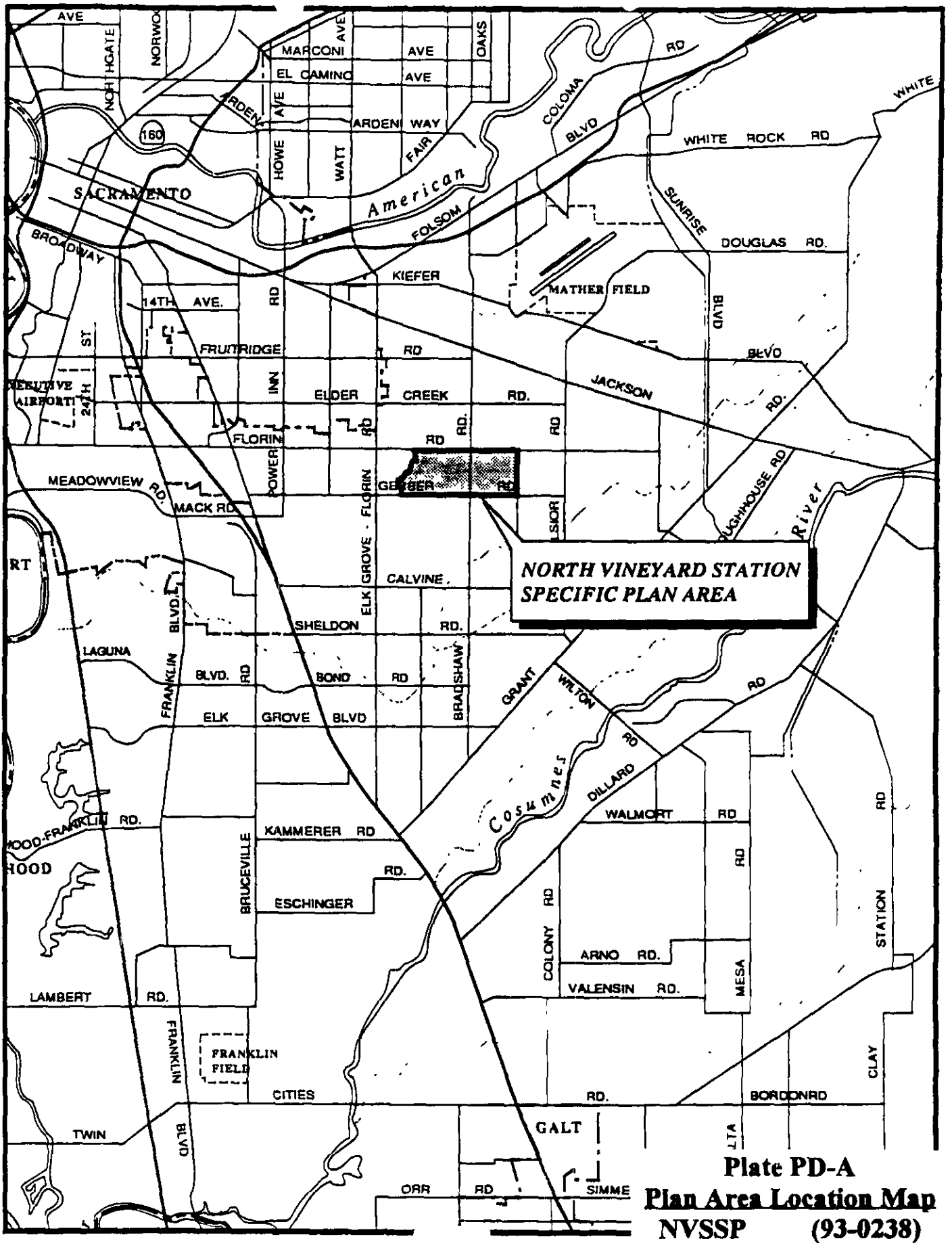


Plate PD-A
Plan Area Location Map
NVSSP (93-0238)

Proposed Specific Plan & Project Alternatives.

The following section describes the proposed "Preferred Specific Plan", and three project plan alternatives prepared in response to the Board of Supervisors direction (see Plates PD-B through PD-E). **In addition this section will describe the two additional alternatives prepared in response to the Policy Planning Commission 1997 public hearings (see Plates PD-AA and PD-BB) . The five project plan alternatives now include: a 10% Residential Density Reduction Alternative, a 15% Residential Density Reduction Alternative, a Modified Core Alternative, a Dispersed Core Alternative, and an Alternative Core Alternative, as described below.**

The distinction between the 10% density reduction alternative and 15% density reduction alternative occurs in the holding capacity for low density single family (1-5 units per acre). In the 10% reduction plan, the holding capacity for single family residential (1-5 units) is 5 units per acre; in the 15% reduction plan, the holding capacity for single family residential is 4.5 units per acre. This difference in holding capacity accounts for the difference in the units between 10% and 15% density alternatives.

Preferred Specific Plan.

The proposed plan is the Preferred Specific Plan developed by the project co-sponsors. The Preferred Specific Plan consists of a 6,339-dwelling unit (DU) residential land use plan with supporting commercial, business professional, park, school, and open space uses. The urban core and focus area of the Preferred Plan, is located on the north side of Gerber Road and west of the Central California Traction Railroad, along a portion of Gerber Creek. The Preferred Plan urban core and focus area includes commercial, business professional, and multi-family residential uses located in proximity to the railroad tracks and Gerber Creek. Proposed urban core and focus area uses include a transit station, park and ride lots, a park plaza and a drainage parkway and related amenities along Gerber Creek. The Preferred Plan includes two elementary school sites, one on each side of Bradshaw Road, and several community and neighborhood parks. The Preferred Specific Plan: Land Use Plan (graphic) is shown on Plate PD-B.

10% Density Reduction Specific Plan Alternative (-10% Alternative).

The 10% Density Reduction Specific Plan Alternative, or "-10% Alternative", is in response to direction by the Board of Supervisors to prepare a land use plan that proposes a ten percent reduction in residential dwelling unit yield from that depicted on the Preferred Plan. The -10% Alternative plan land use pattern is essentially the same as the Preferred Plan, but with reduced residential densities. The reduction in overall residential densities is

Plate PD-B
Preferred Specific Plan
NVSSP (93-0238)

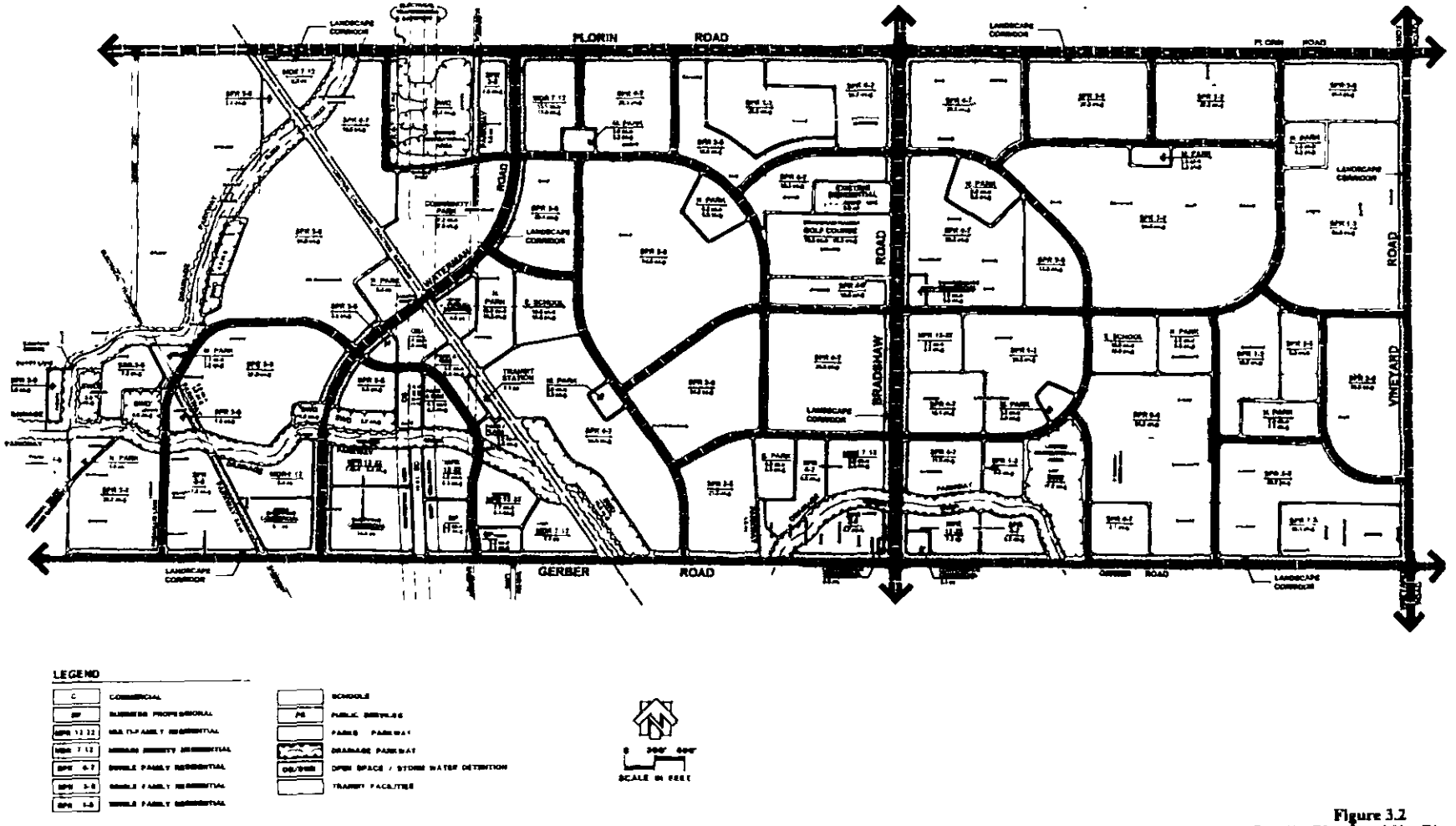
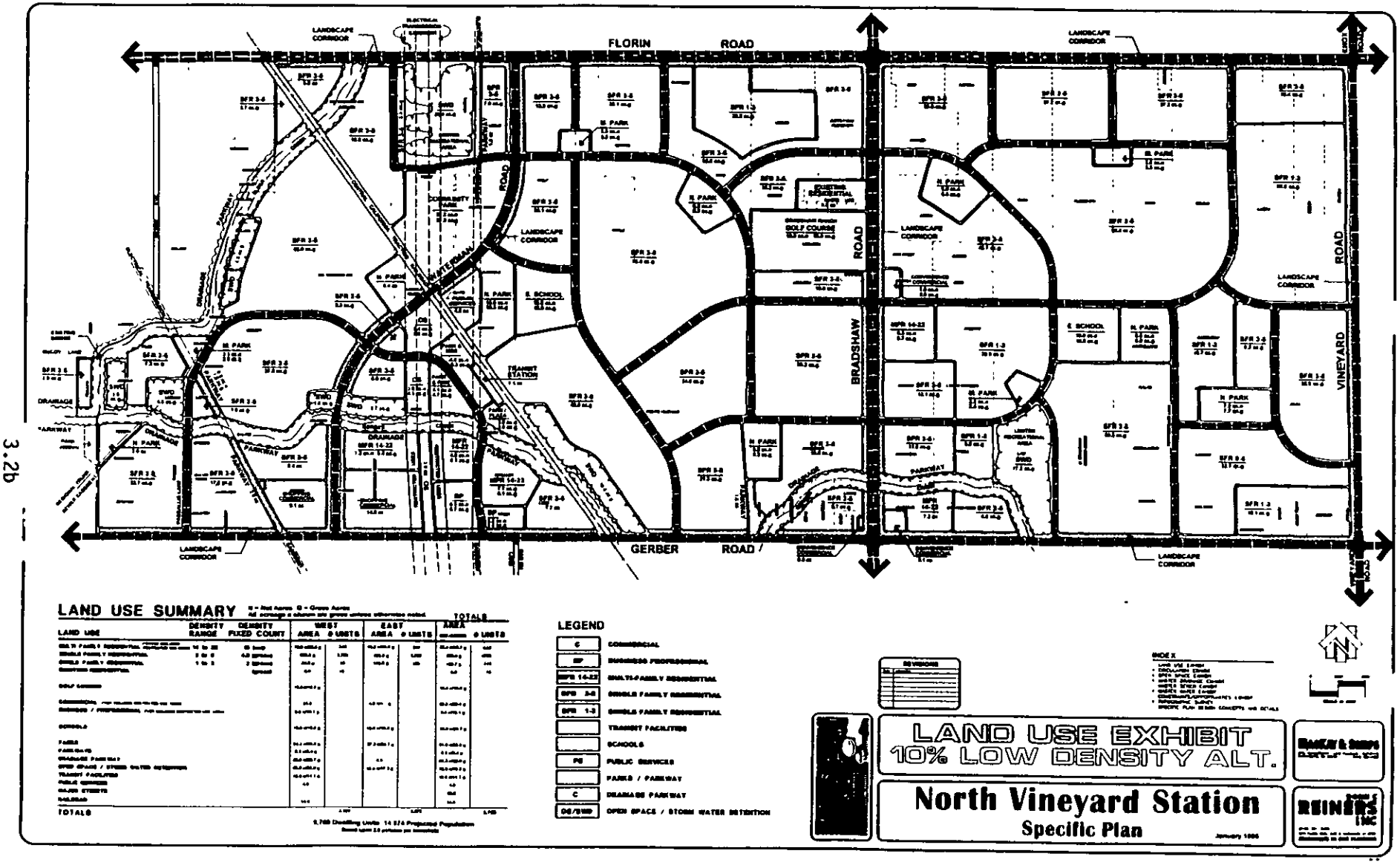


Figure 3.2
Specific Plan Land Use Diagram



3.2b

Plate PD-C

-10% Alternative Specific Plan

NVSSP (93-0238)

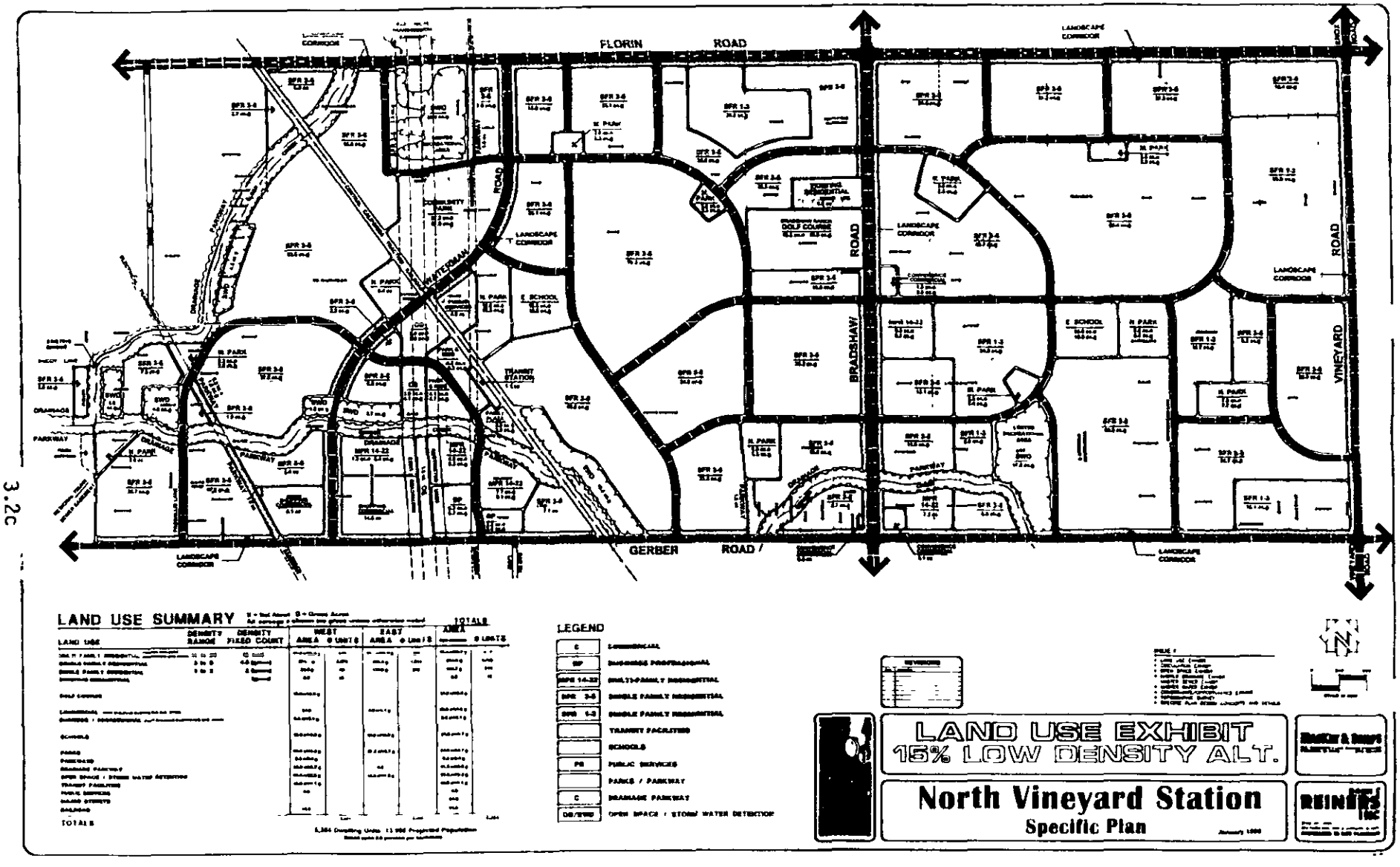


Plate PD-D

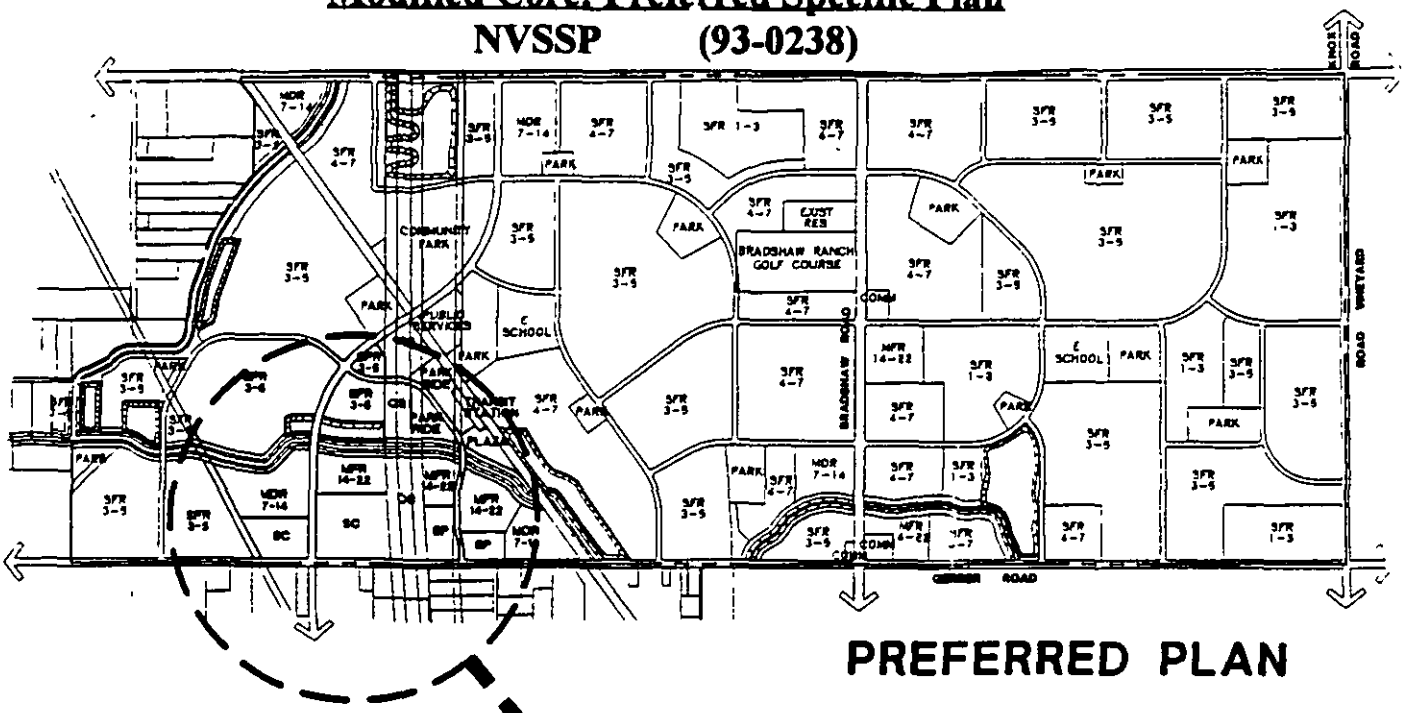
-15% Alternative Specific Plan

NVSSP (93-0238)

Plate PD-E.1

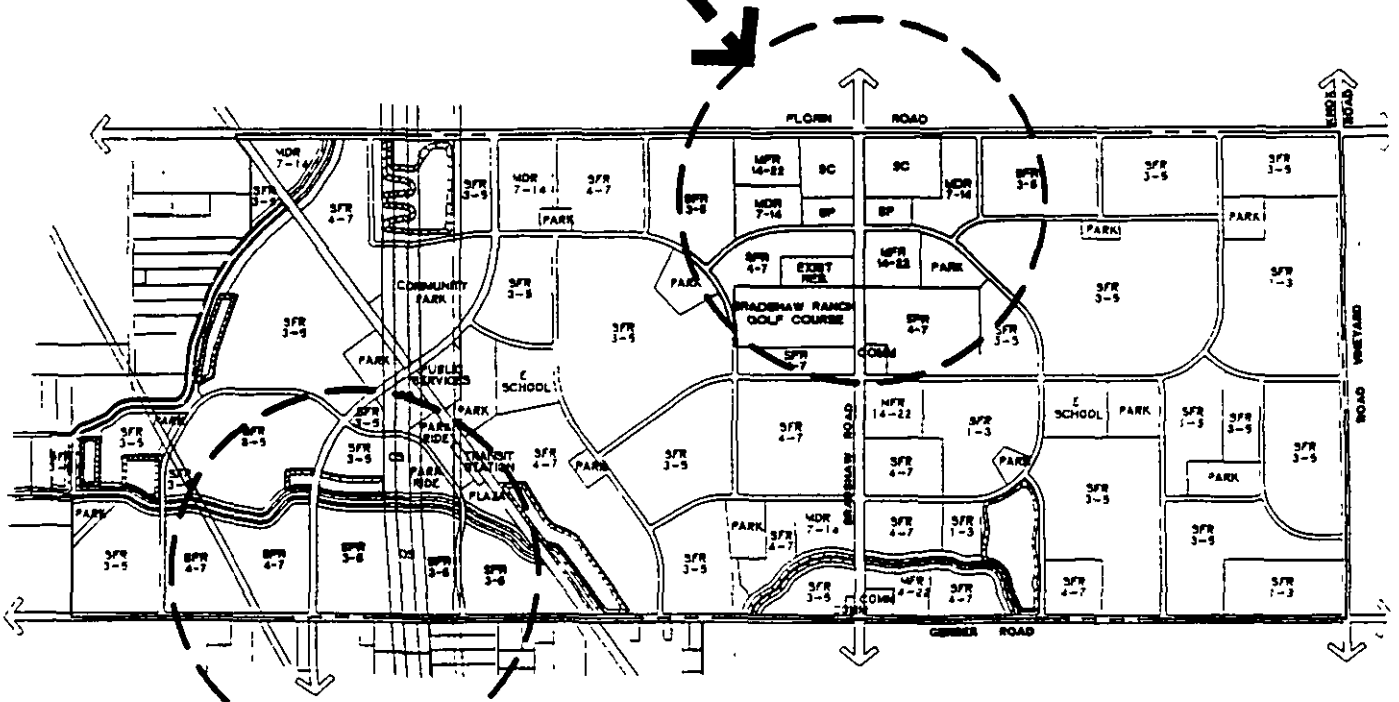
Modified Core: Preferred Specific Plan

NVSSP (93-0238)



PREFERRED PLAN

MOVE CORE AREA FROM GERBER & WATERMAN TO FLORIN & BRADSHAW



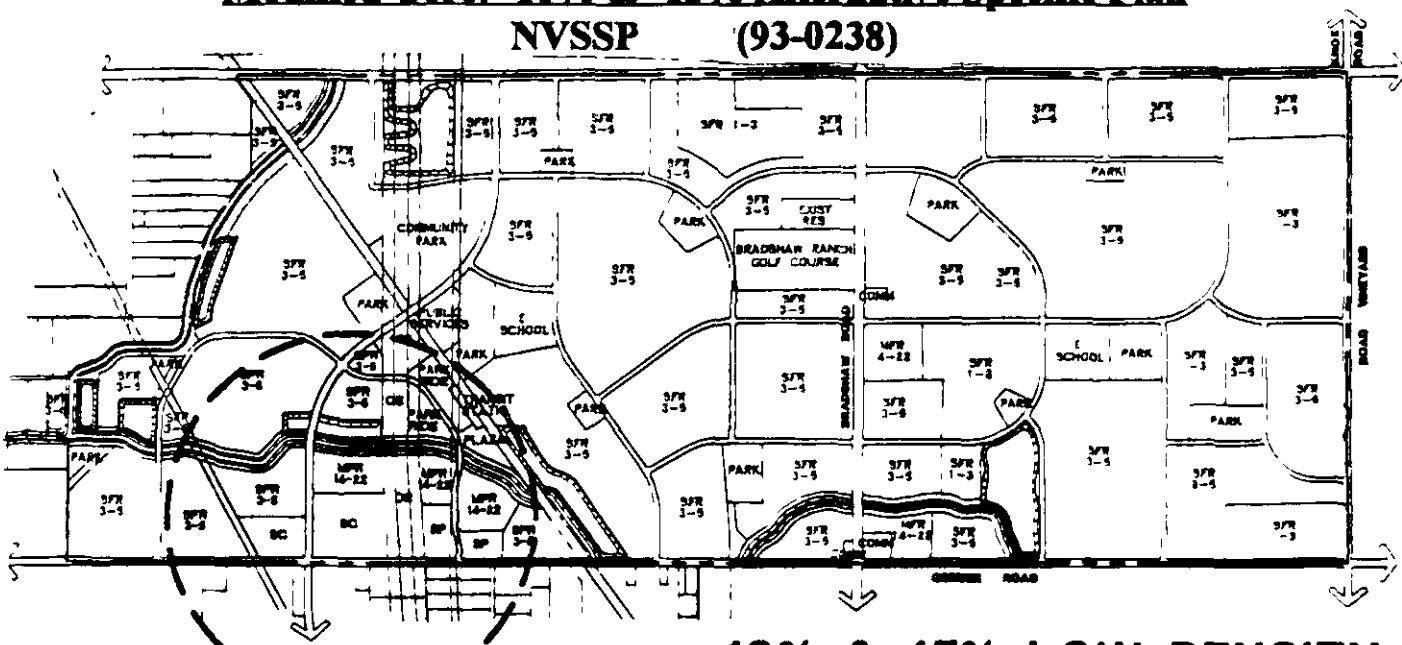
PREFERRED PLAN
CORE AREA ALTERNATIVE

REPLACE CORE AREA WITH SINGLE FAMILY RESIDENTIAL USES.

Plate PD-E.2

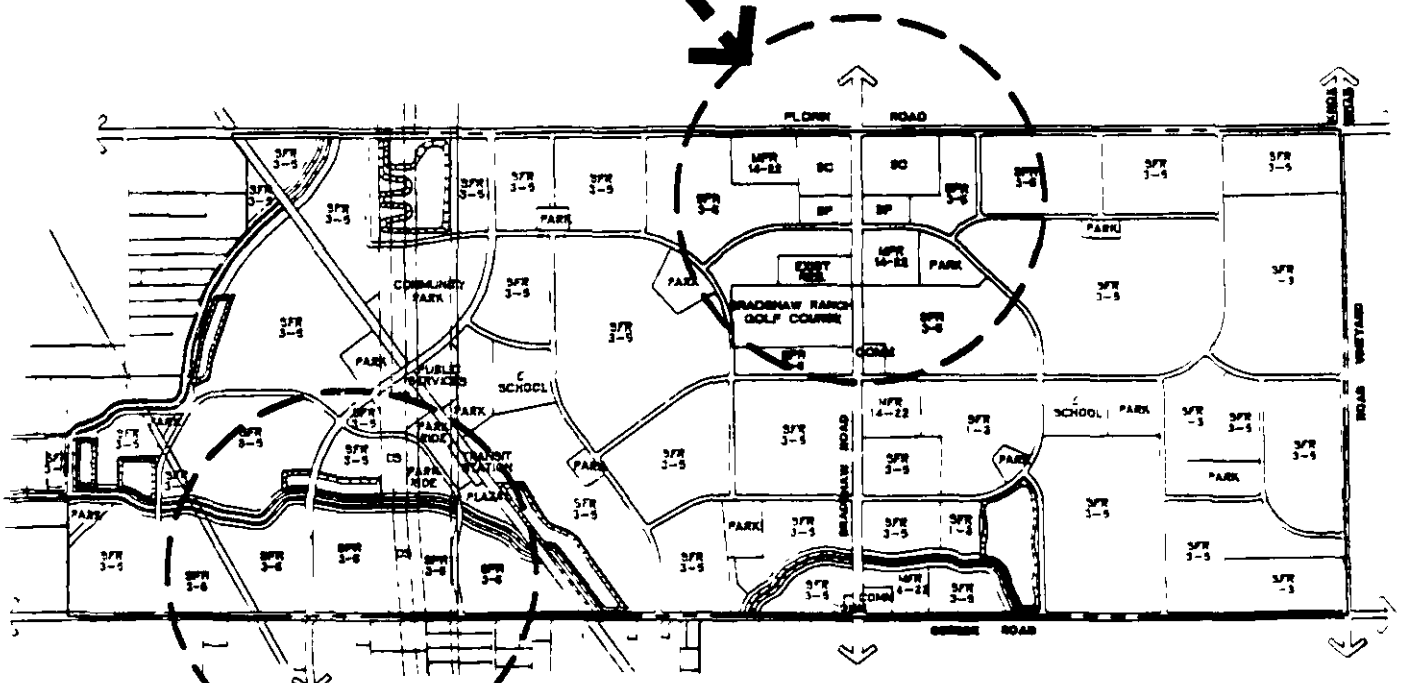
Modified Core: -10% & -15% Alternative Specific Plan

NVSSP (93-0238)



10% & 15% LOW DENSITY ALTERNATIVE

MOVE CORE AREA FROM GERBER & WATERMAN TO FLORIN & BRADSHAW



10% & 15% LOW DENSITY ALTERNATIVE

REPLACE CORE AREA WITH SINGLE FAMILY RESIDENTIAL USES.

CORE AREA ALTERNATIVE

Plate PD-AA

Dispersed Core Alternative Exhibit AA

NVSSP EIR(93-0238)

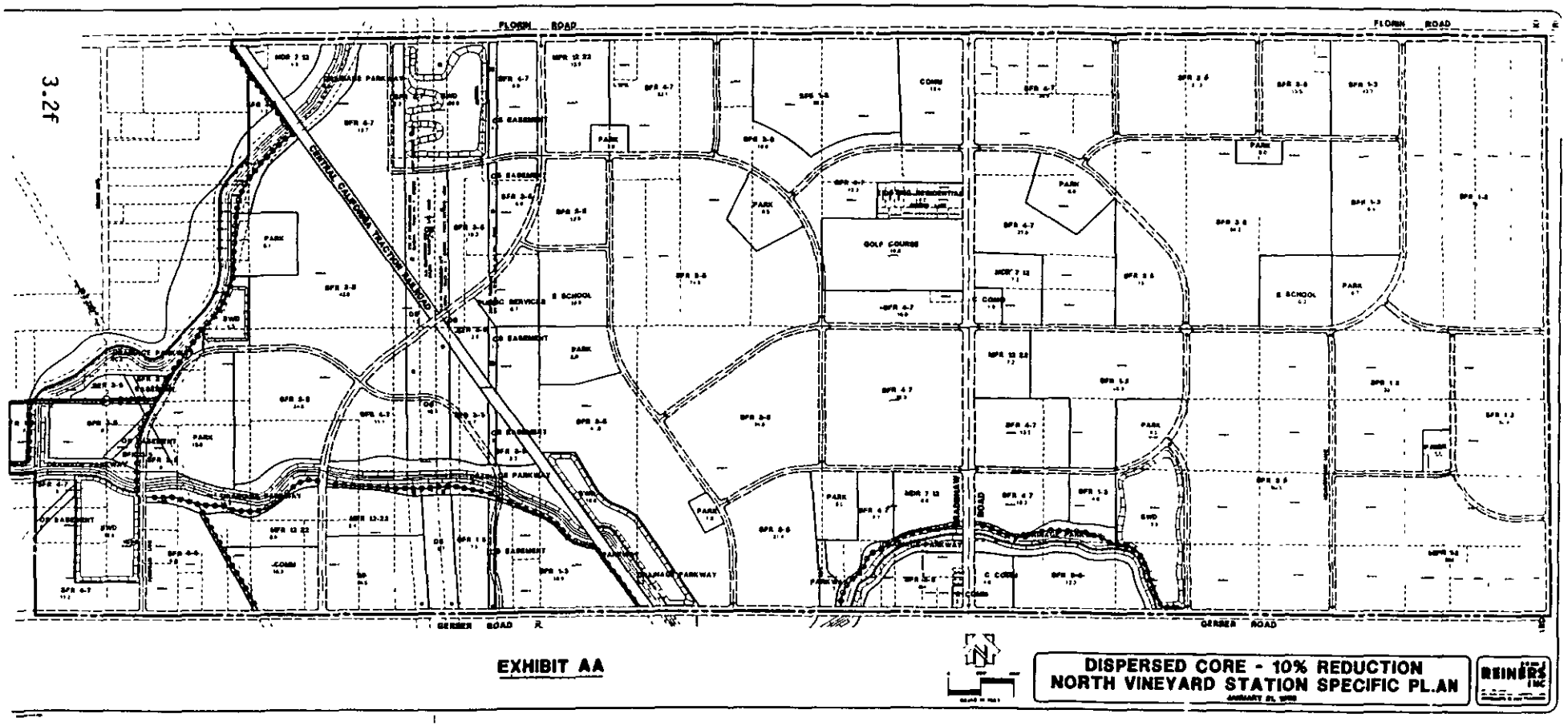


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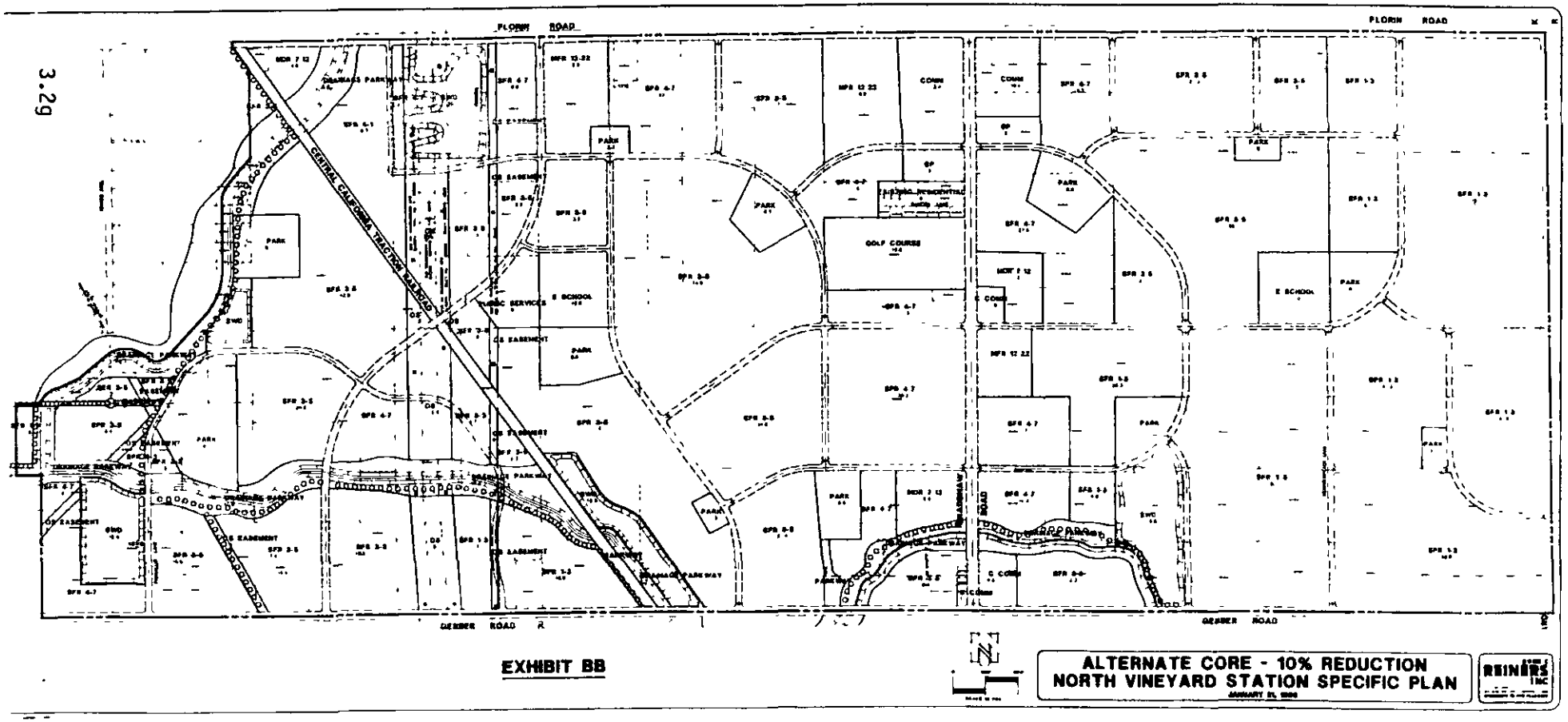
Plate PD-BB

Alternative Core Alternative Exhibit BB

NVSSP EIR(93-0238)



3.29

accomplished by converting 45.4 acres of medium density residential uses and 287.3 acres of single family low density residential uses of 4 to 7 dwelling units per acre to single family density of 1 to 5 dwelling units per acre. In addition, approximately 8.5 acres of 'Park' acreage is also converted to single family low density residential use of 1 to 5 dwelling units per acre.

The overall residential capacity of the -10% Alternative Plan is 5,759 dwelling units, 580 units less than the Preferred Plan. There is no medium density (4-7 du/ac) residential use in the -10% Alternative Plan. The urban core and focus area acreages remain generally the same as the preferred plan. The -10% Alterative is presented on Plate PD-C. Table **PD-1.1** provides an acreage and/or dwelling unit (DU) comparison summary of the Preferred Plan and the -10% Alternative Plan land uses, as well as the-15% Alternative Plan..

15% Density Reduction Specific Plan Alternative (-15% Alternative).

The general character of the 15% Density Reduction Specific Plan Alternative is a plan that provides a 15 percent reduction of the overall residential capacity of the Preferred Plan as requested by the Board of Supervisors. Similar to the -10% Plan, the land use pattern is generally the same as the Preferred Plan, but with further reduction of the Preferred Plan residential densities. The reduction in overall residential densities is accomplished by converting 45.4 acres of medium density residential uses and 287.3 acres of single family low density residential uses of 4 to 7 dwelling units per acre to single family density of 1 to 5 dwelling units per acre. In addition, approximately 12 acres of 'Park acreage is also converted to single family low density residential use of 1 to 5 dwelling units per acre.

The overall residential capacity of the -15% Alternative Plan is 5,384 dwelling units, 991 units less than the Preferred Plan and 403 units less than the -10% Alternative Plan. There are no medium density (4-7 du/ac) units included in the-15% Alternative just as in the -10% Alternative Plan. The -15% Plan is presented on Plate PD-D. Table **PD-1.1** provides an acreage and/or dwelling unit (DU) comparison summary of the Preferred Plan and the -15% Alternative Plan, as well as the -10% Alternative Plan.

Modified Core Specific Plan Alternative (Florin-Bradshaw Core Alternative).

The Modified Core Specific Plan Alternative or Core Relocations Alternative (Plate PD-E.1 and Plate PD-E.2), proposes relocation of the core area's mix of commercial, business professional, and multi-family residential uses from the south-west Plan Area (Waterman Road, Gerber Road/Creek area) to the north-central Plan Area (Bradshaw Road and Florin Road). However, the transit station, park and ride lots, and park plaza remain adjacent to the Central California Traction Railroad. The modified core area contains the same relative mix of commercial, business professional, multi-family residential, and public/quasi-public land

Table PD-1.1 (rev)
Land Use Summary
Preferred Plan; -10%and -15%Alternatives

Land Use	Preferred Plan		-10% Alt.		-15% Alt.	
	Acres	Units	Acres	Units	Acres	Units
Residential						
Multi Family (14-22 du/ac)	39.7	637	39.7	637	39 7	637
Medium Density (7 to 12 du/ac)	45.4	442	-	-	-	-
Single Family (4-7 du/ac)	287.3	1,724	-	-	-	-
Single Family (3 to 5 du/ac)	644.5	3,222	980.4	4,796	984 0	4,423
Single Family (1 to 3 du/ac)	150.4	301	155.7	311	155 7	311
Existing Residential	6.0	13	6.0	13	6 0	13
Commercial	28.6	-	28.6	-	28 6	-
Business Professional	10.1	-	10.1	-	10 1	-
Schools	21.7	-	21.7	-	21 7	-
Parks	104.7	-	96.2	-	92.7	-
Parkways	6.4	-	6.4	-	6 4	-
Golf Course	19.9	-	19.9	-	19 9	-
Drainage Parkway	62.0	-	62.0	-	62.0	-
Open Space/Storm Water Detention	79.2	-	79.2	-	79.2	-
Transit Facilities	11.1	-	11.1	-	11 1	-
Public Services	4.9	-	4.9	-	4 9	-
Major Streets	58.0	-	58.0	-	58 0	-
Railroad	14.6	-	14.6	-	14 6	-
Totals	**1,594.5**	**6,339**	**1,594.5**	**5,759**	**1,594.5**	**5,384**
General Plan holding capacity is 7,200±						
(GP holding capacity - proposed density)		*(-861)*		*(-1,441)*		*(-1816)*
Preferred Plan holding capacity is 6,339						
(SP holding capacity - alternative density)		*-0-*		*(-580)*		*(-991)*

uses as the Preferred Plan core area. However the modified core alternative does not include any drainage parkway features or improvements adjacent to the urban core and focus area as does the Preferred Plan. The Modified Core Specific Plan Alternative may be combined or overlayed with the Preferred Specific Plan, the -10% Alternative, or the -15% Alternative.

Dispersed Core and Alternate Core Specific Plan Alternatives

Two additional land use plan alternatives were developed during the public hearings at the Policy Planning Commission. These two alternatives primarily involved relocating and dispersing the commercial core area away from existing residential development along Gerber Road. These two new alternatives are known as the Dispersed Core Alternative ("Dispersed Core"), and the Alternative Core Alternative ("Alternative Core") .

The Dispersed Core involves relocation of approximately 13 acres of retail commercial uses to the Bradshaw Road/Florin road intersection (see Plate PD-AA). The Alternative Core includes the relocation of most of the commercial and business-professional uses, and approximately 300 multi-family dwelling units to Florin Road and Bradshaw (see Plate PD-BB). During the public hearings the Planning Commission added a 10% density reduction to both alternatives. Due to the overlay of a 10% density reduction and the loss of 11.5 acres resulting from realigning the western edge of the plan area to be coterminous with existing Elder Creek, the holding capacity of the Alternative Core fell from 6,339 dwelling units (DUs) to 5,768 DUs, and the Dispersed Core fell to 5,667 DUs.

The Alternative Core includes only half as much acreage designated for business-professional uses as compared to the Dispersed Core and the Preferred Plan (7.1 acres vs. 14.5 acres and 10.1 acres, respectively). Table PD-1.2 provides an acreage and/or dwelling unit (DU) comparison summary of the Preferred Plan and the Dispersed Core at 6,339 and 5,667 DUs, as well as the Alternative Core at 6,339 and 5,768 DUs.

Amendments to Existing Plans.

General Plan Land Use Diagram Amendment.

The existing General Plan designation for the entire Plan Area is "Urban Development Area" (see Plate PD-F). Amendments to the County General Plan Land Use Diagram are necessary for the proposed land uses and residential densities shown on the Preferred Specific Plan Land Use Plan and each of the alternative plans, if adopted. Plate PD-G shows the proposed General Plan designation for the Preferred Plan. Plates PD-H and PD-I

Table PD-1.2 (rev)
Land Use Summary Preferred Plan; Dispersed Core(AA);Alternative Core(BB)
NVSSP EIR(93-0238)

	Preferred Plan 6,339 units (NOP)		AA Plan 10% Reduction (Planning Comm)		BB Plan 10% Reduction		AA Plan 6,339 units		BB Plan 6,339 units	
	Acres	Units	Acres	Units	Acres	Units	Acres	Units	Acres	Units
Residential										
Multi Family (13-22 du/ac)	39 7	637	37.4	673	37 0	666	37.4	673	37 0	666
Medium Density (7 to 12 du/ac)	45 4	442	19.9	199	19.9	199	19.9	199	19.9	199
Single Family (4-7 du/ac)	287.3	1,724	233.4	1,400	216 3	1,297	233.4	1,400	218.3	1,272
Single Family (3-5 du/ac)	644.5	3,222	550.3	2,751	603.7	3,018	772 4	3,888	823.8	4,079
Single Family (1-3 du/ac)	150.4	301	315.7	631	287.5	575	83 4	166	55.2	110
Existing Residential	6 0	13	6 0	13	6.0	13	6 0	13	6.0	13
Commercial	28 6		30 1		29 8		30.1		29 8	
Business Professional	10.1		14 5		7 1		14.5		7 1	
Schools	21.7		20.0		20 0		20 0		20.0	
Parks	104.7		73.1		73.1		83 3		83.3	
Parkways	6.4		2.6		2 6		2.6		2 6	
Golf Course	19.9		19 8		19 8		19.8		19 8	
Drainage Parkway	62.0		78 7		78 7		78.7		78 7	
Open Space/Storm Water Detention	79.2		102 2		102 2		102.2		102.2	
Transit Facilities	11 1		0 0		0.0		0.0		0 0	
Public Services	4 9		6 7		6 7		6 7		6 7	
Major Streets	58.0		58 0		58 0		58.0		58.0	
Railroad	14.6		14.6		14 6		14 6		14.6	
Total	1,594 5	6,339	1,583 0	5,667	1,583 0	5,768	1,583 0	6,339	1,583 0	6,339

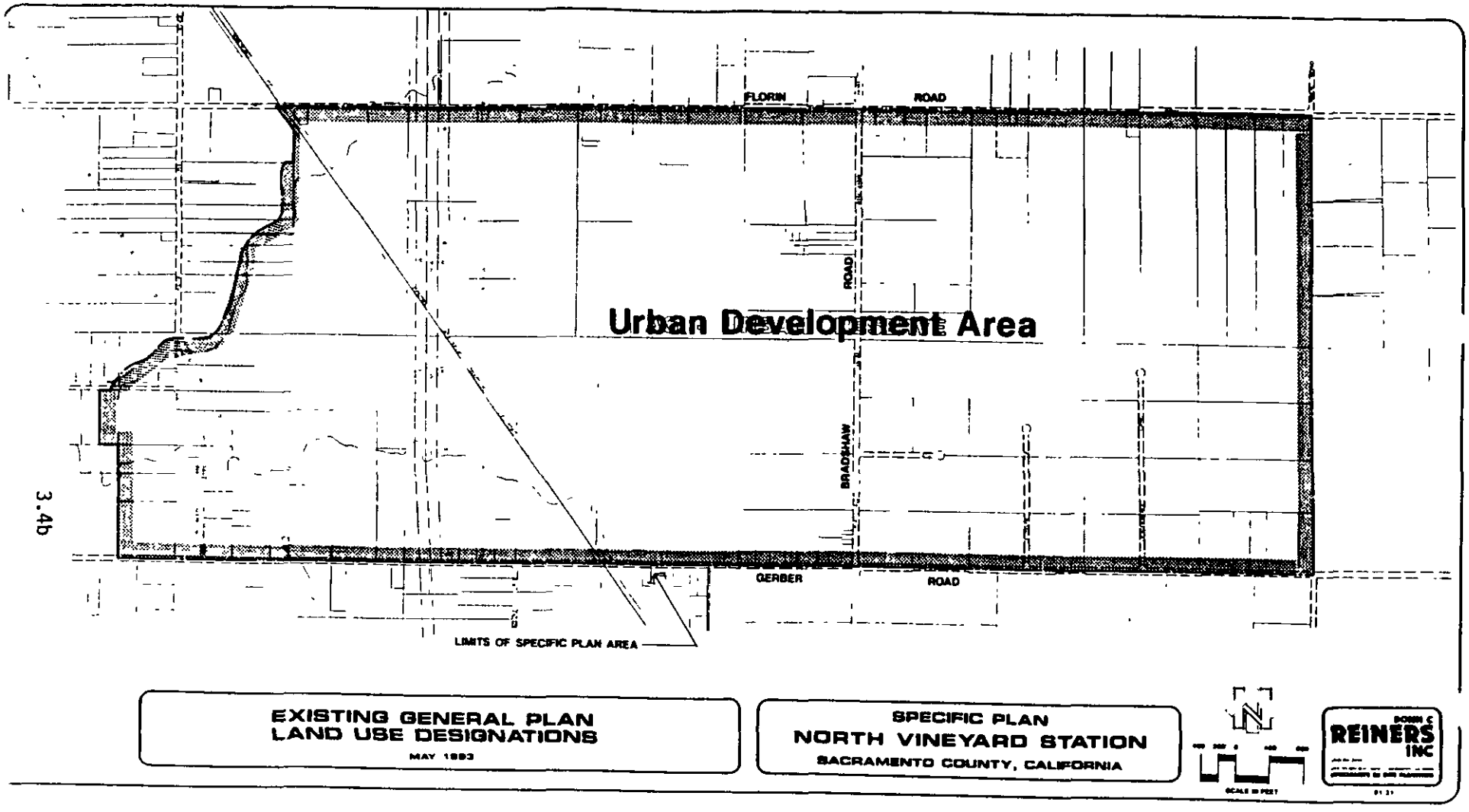


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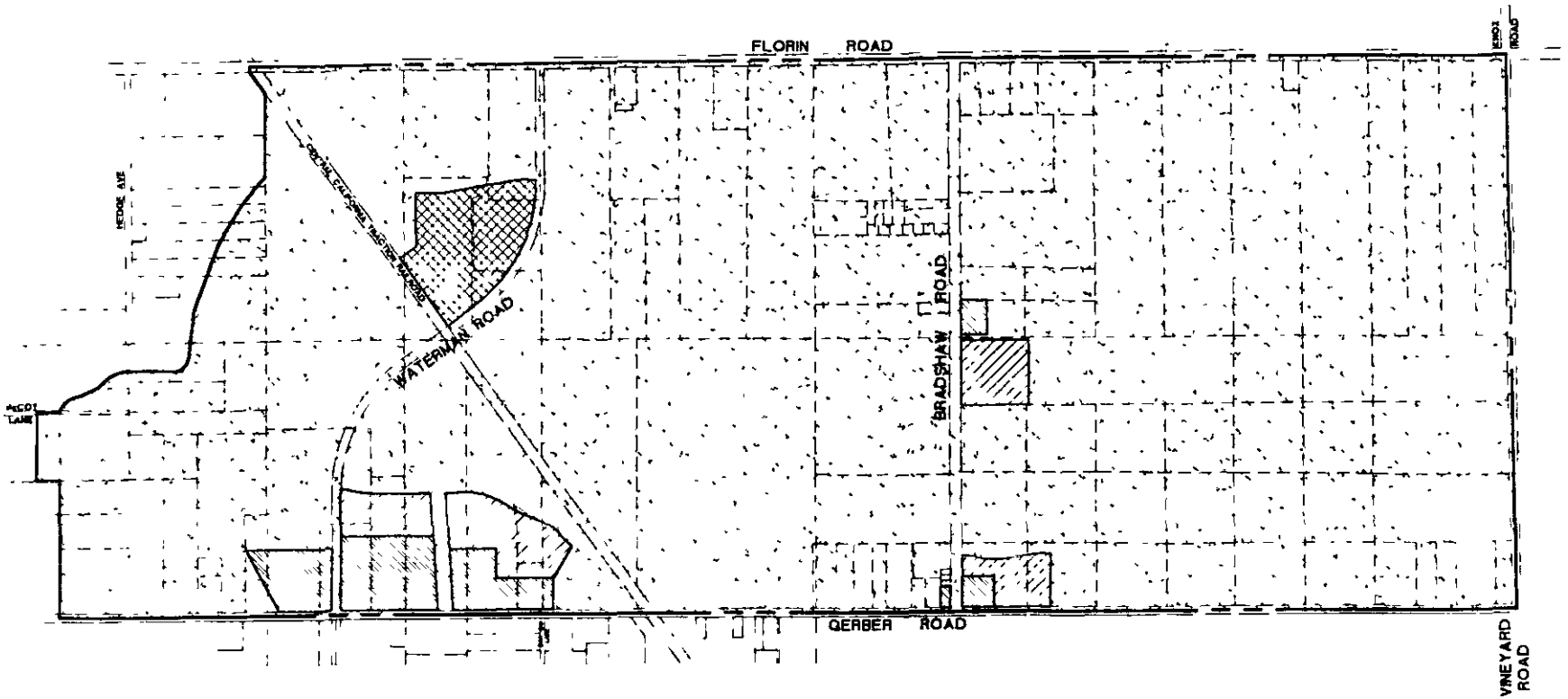
Plate PD-F
Existing General Plan
NVSSP (93-0238)

Plate PD-G
Preferred SP General Plan
NVSSP (93-0238)



LEGEND

- LOW DENSITY RESIDENTIAL
- MEDIUM DENSITY RESIDENTIAL
- COMMERCIAL & OFFICE
- RECREATION

NOT TO SCALE

Figure 3.1.C
Proposed General Plan Land Use Designations

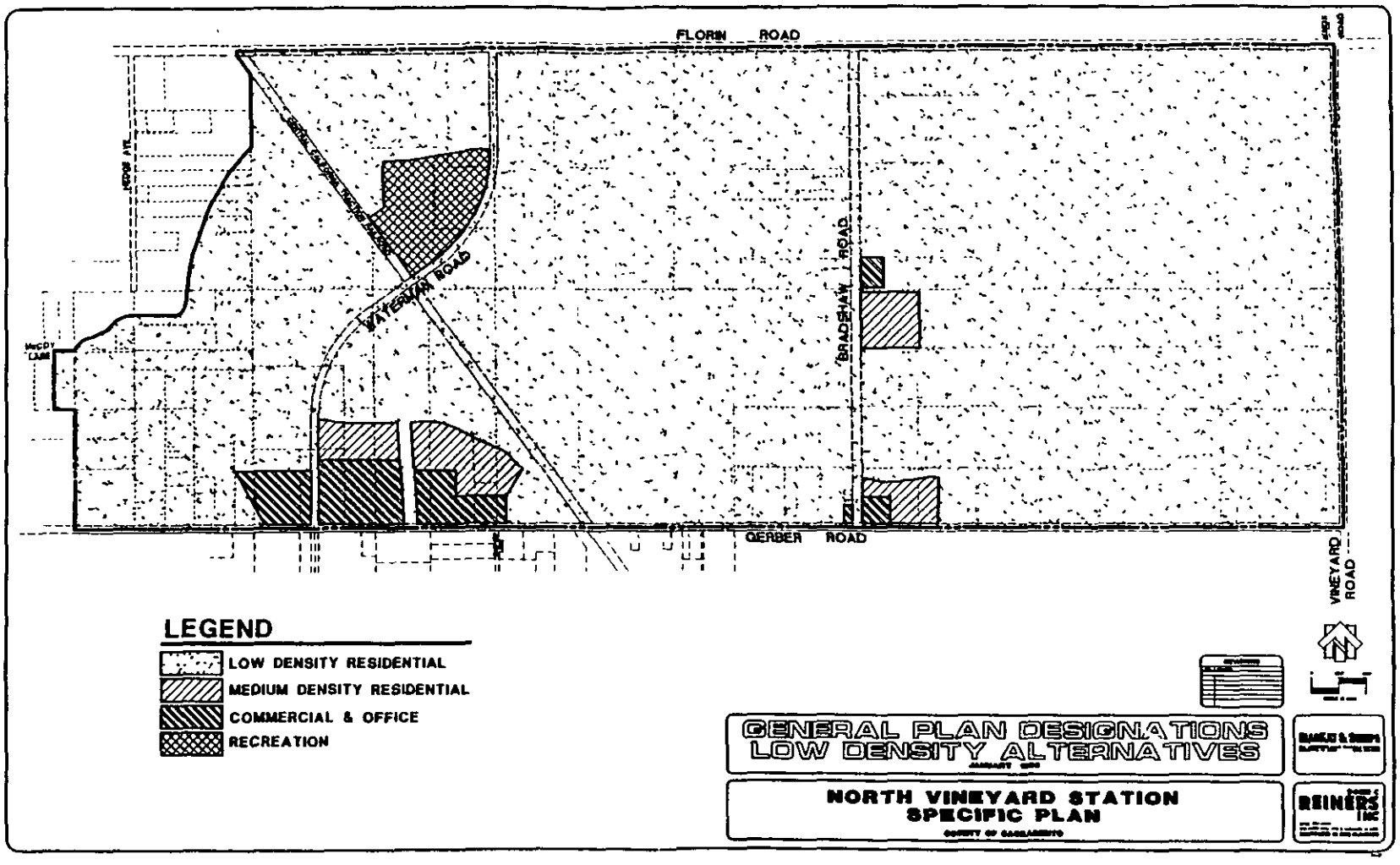


Plate PD-H

-10% Alternative SP General Plan

NVSSP (93-0238)

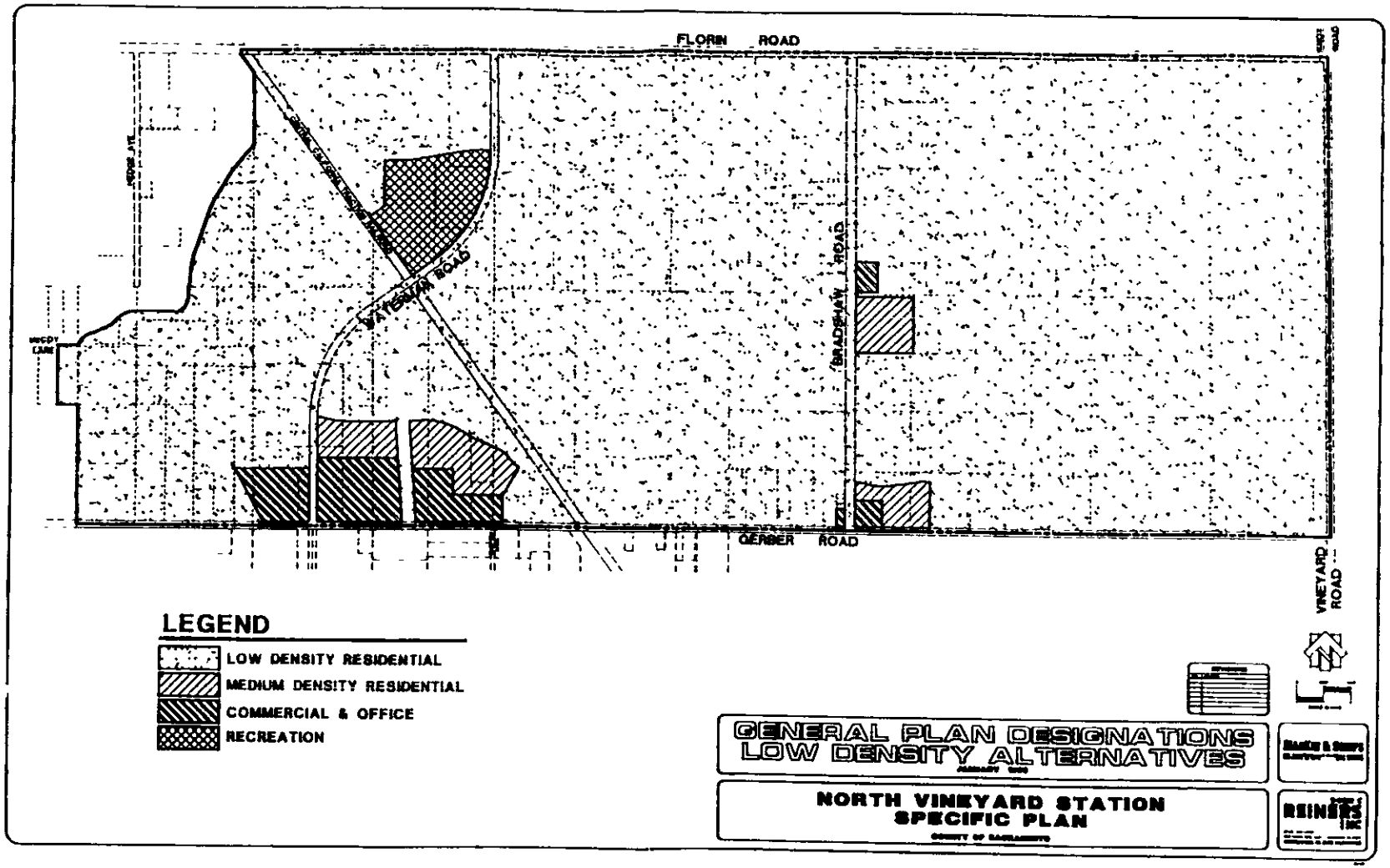


Plate PD-I

-15% Alternative SP General Plan

NVSSP (93-0238)

show the proposed designations for the -10% Alternative Plan and the -15% Alternative Plan, respectively. Plates PD-J.1 and PD-J.2 shows the proposed General Plan designations for the Modified Core Alternative under either the Preferred Specific Plan or the -10% and the -15% Alternative Plans. **Plate PD-CC shows the proposed General Plan for the Dispersed Core Alternative endorsed by the Policy Planning Commission.** Table **PD-2.1** summarizes the County General Plan Designation acreages for the Preferred Plan, the -10% Alternative, and the -15% Alternative. **Table PD-2.2 summarizes the County General Plan Designation acreages for the Preferred Plan, the -10% Alternative, and the -15% Alternative.**

It should be noted that Specific Plan residential categories are different from those of the General Plan. The General Plan designation of "Medium Density" Residential at 13 to 30 units per acre is much higher than the "Medium Density" designation of the Specific Plan at 7 to 12 du/ac. This density range is considered "Low Density" under the General Plan. The Multi Family" designation of the Specific Plan at 14 to 22 du/ac is consistent with the "Medium Density" category of the General Plan.

General Plan Transportation Plan Diagram Amendment.

The proposed roadway network is depicted on (Plate PD-K) Transportation Diagram. The existing General Plan Transportation Diagram must be amended to accommodate the needed improvements for the project. Table PD-3 summarizes planned roadway improvements listed in the General Plan. The Transportation Diagram of the General Plan identifies the Central California Traction Railroad right-of-way as transportation corridor.

The circulation pattern associated with the Preferred Plan and each alternative is shown on the corresponding land use plan. The circulation pattern in each of the land use alternatives is similar to that of the Preferred Plan. Within the project bounds, Waterman Road will be extended from its current terminus at Gerber Road to Florin Road. The NVSSP project includes one at-grade crossing of the Central California Traction Railroad tracks at Waterman Road, approximately one-half mile south of Florin Road. Improvement of the two existing at-grade crossings at Florin Road and Gerber Road is also anticipated.

It should be noted that the Policy Planning Commission recommended the approval of the Preferred Plan circulation diagram with the exception that Waterman Road alignment be shifted at it's north end such that 3 traffic lanes would be on the east side and 1 traffic lane on the west side of the property line. The Commission recommended approval of the General Plan Transportation Diagram Amendment consistent with Plate PD-DD).

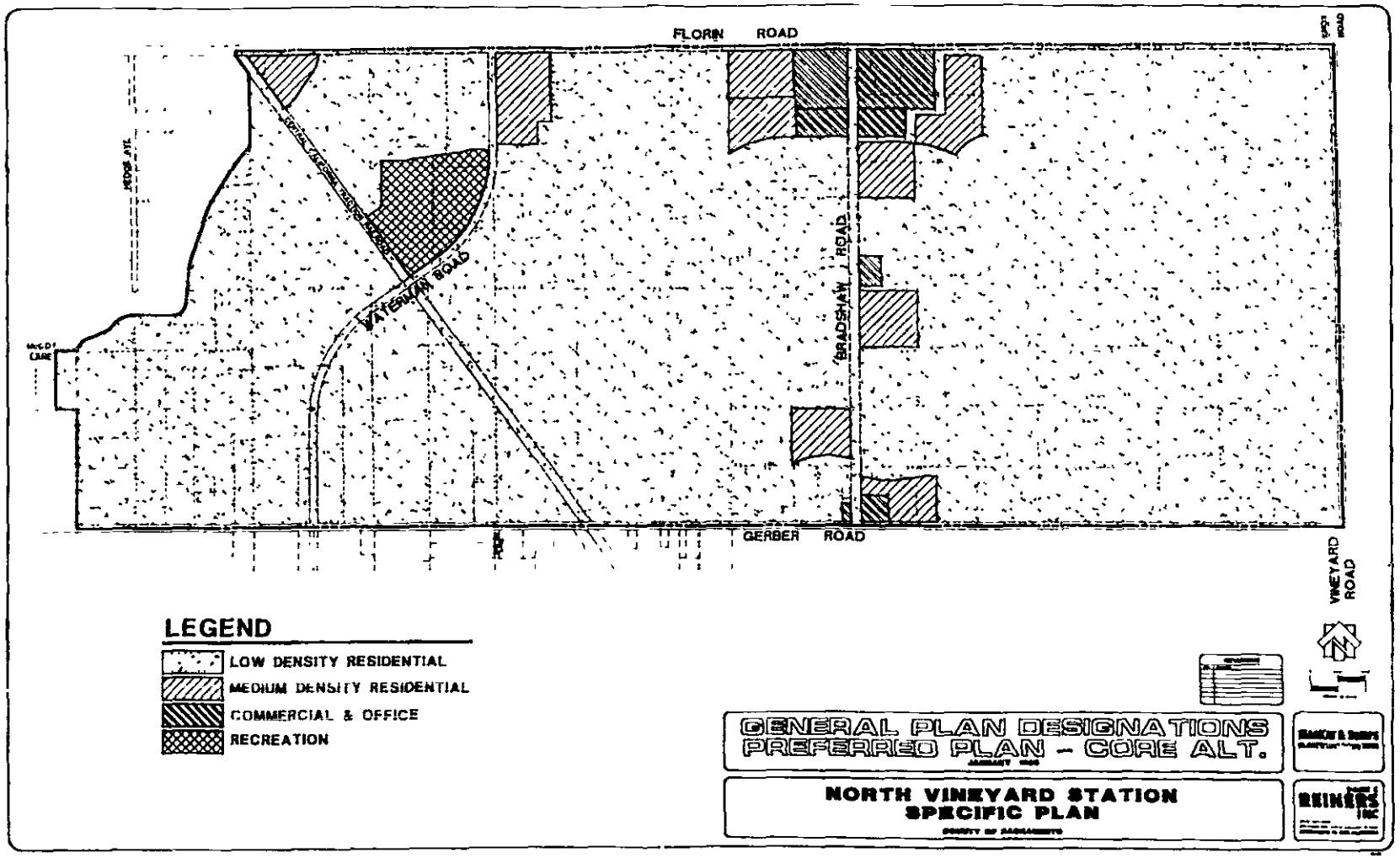


Plate PD-J.1
Modified Core: Preferred SP
NVSSP (93-0238)

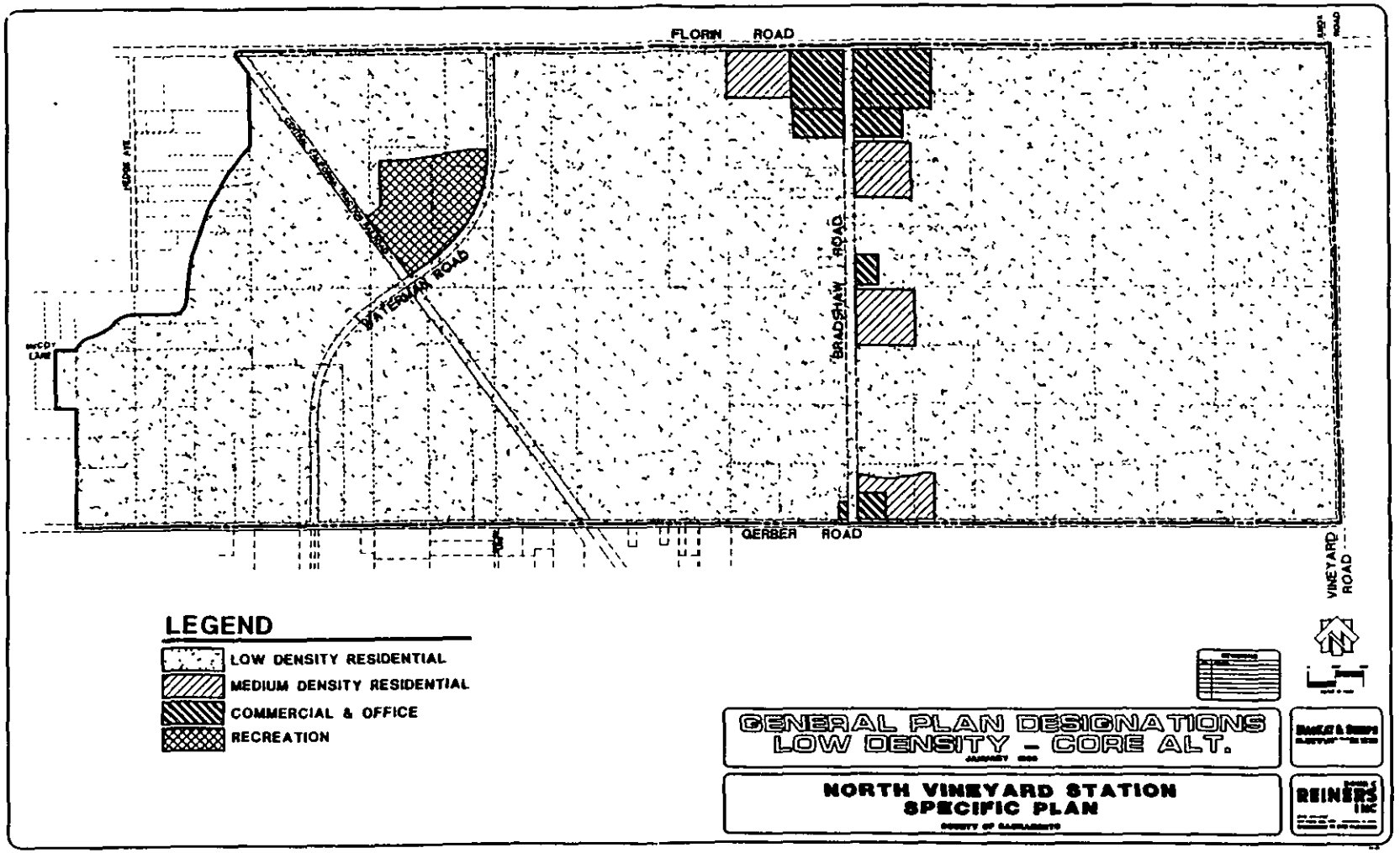


Plate PD-J.2

Modified Core: -10% & -15% Alternative SP

NVSSP (93-0238)

Table PD-2.1 (rev)
General Plan Designation Acreage Calculation for Preferred Plan; -10% an -15% Alternatives

General Plan Designation Land Use	County General Plan Existing Acreage ±	NVSSP Preferred Plan Acreage ±	NVSSP -10% Alt. Acreage ±	NVSSP -15% Alt. Acreage±
Urban Development	1,594.5	0	0	0
Low Density Residential (1-12 du/ac)	1,442.8	1,488.2	1,488.2 *(+45.4)*	*(+45.4)*
Medium Density Residential (13-30 du/ac)	0	85.1	39.7 *(-45.4)*	39.7 *(-45.4)*
Commercial & Office	0	38.7	38.7	38.7
Recreation	0	27.9	27.9	27.9
Total	**1,594.5**	**1,594.5**	**1,594.5**	**1,594.5**

(+more acreage than preferred plan)
(- less acreage than preferred plan)

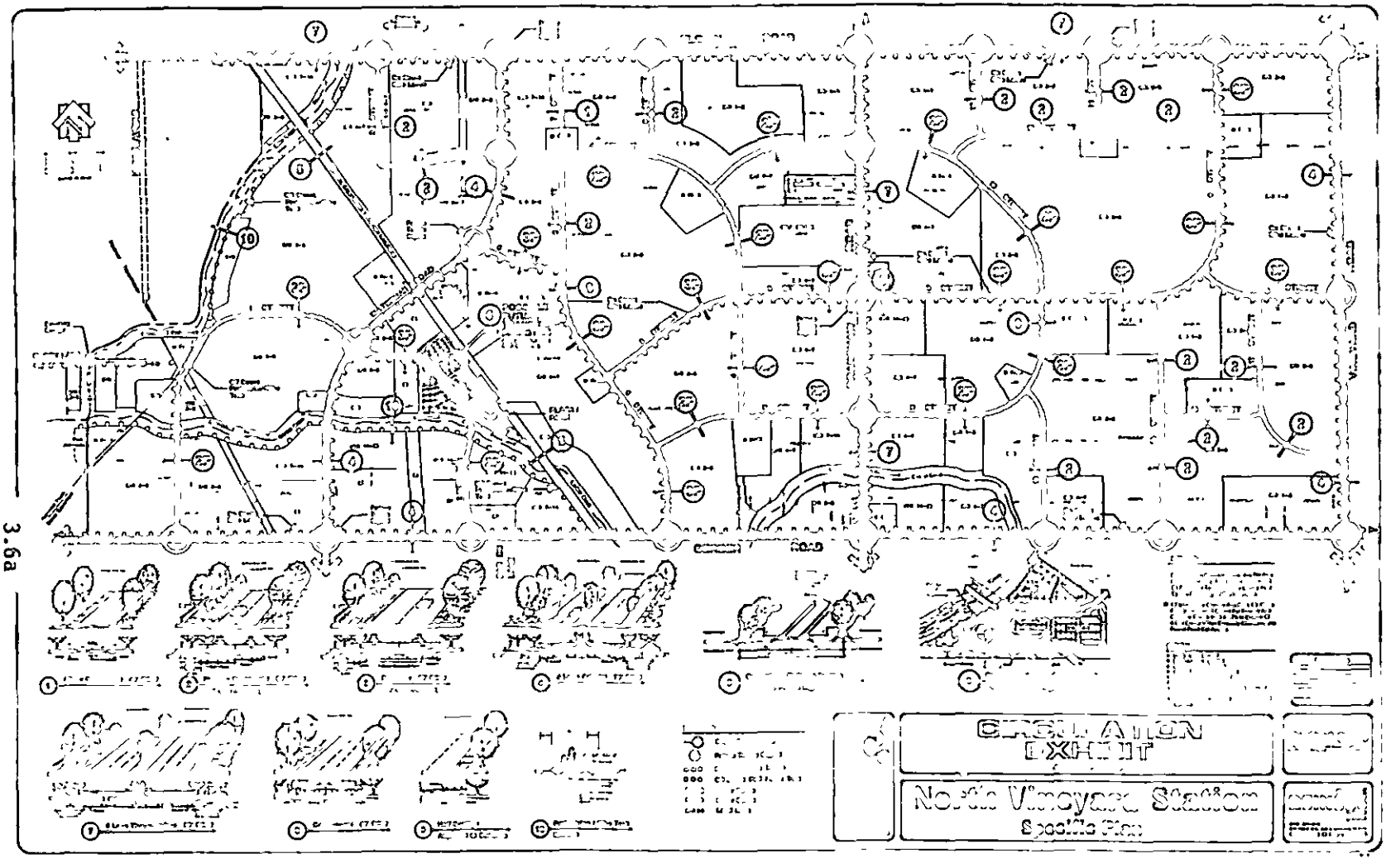
Table PD-3
Major Roadways
Planned Improvements

Roadway	Segment	Current Lanes	Planned Improvements Pre-2010	Post 2010
Gerber Road	Hedge Avenue to Vineyard Road	2	4	4
Vineyard Road	Gerber Road to Florin Road	N/A	-	4
Florin Road	Vineyard Road to Hedge Avenue	2	6	6
Bradshaw Road	Gerber Road to Florin Road	2	6	6
Central California Traction Railroad	Gerber Road to Florin Road	N/A	-	Trunk Line Network
Gerber Road	Hedge Avenue to Vineyard Road	N/A	Feeder Line Network	-
Florin Road	Vineyard Road to Hedge Avenue	N/A	Feeder Line Network	-

Source: Sacramento County General Plan Transportation Map.

Vineyard Community Plan Amendment.

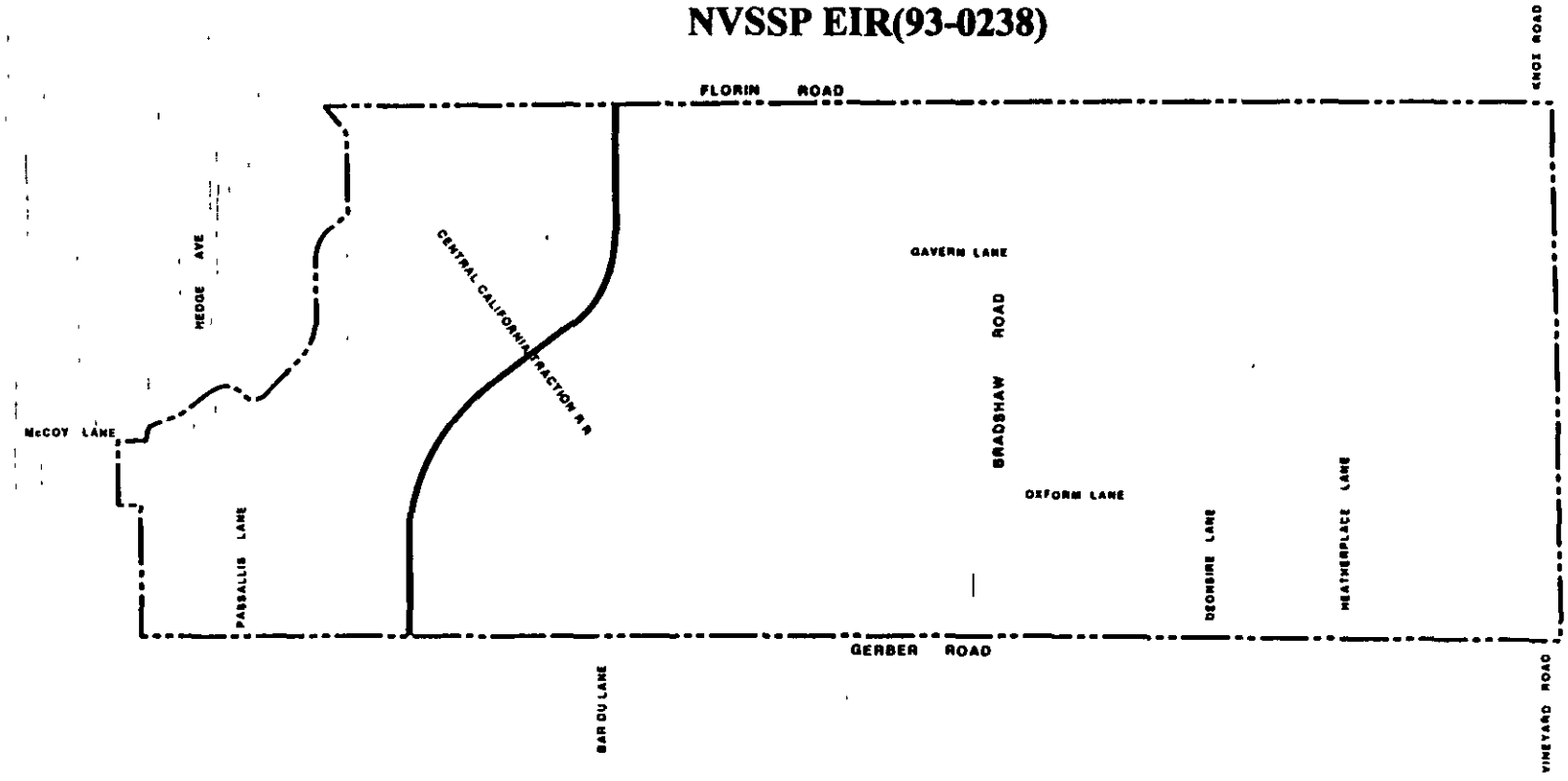
Plate PD-L shows the existing Vineyard Community Plan land use designations (and existing zoning) for the Plan Area. The existing Community Plan designations within the project area are AG-20/AG-20(F) and AR-10/AR-10(F). A Community Plan Amendment to a designation of "SP" (Specific Plan) will be required for the project (Plate PD-M). Allowed uses for any given area would be prescribed by both the written and graphic descriptions within the proposed Specific Plan document.



3.6a

NORTH VINEYARD STATION
AMENDMENT TO THE TRANSPORTATION PLAN DIAGRAM

Plate PD-DD
Transportation Plan Diagram Amendment
NVSSP EIR(93-0238)



LEGEND

ARTERIAL (Normal Width 84', Normally 4 Lanes)
Pre 2010

NOT TO SCALE

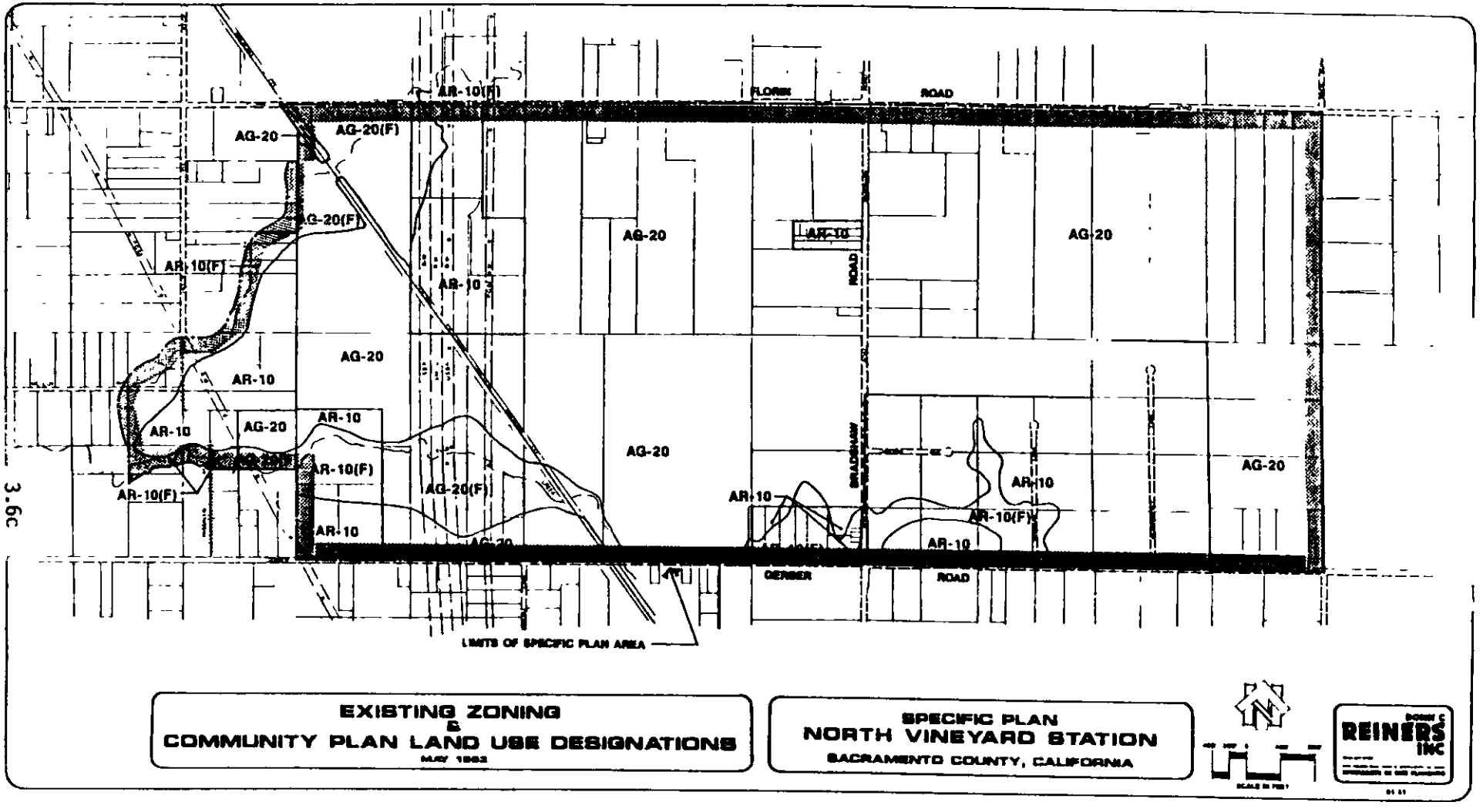
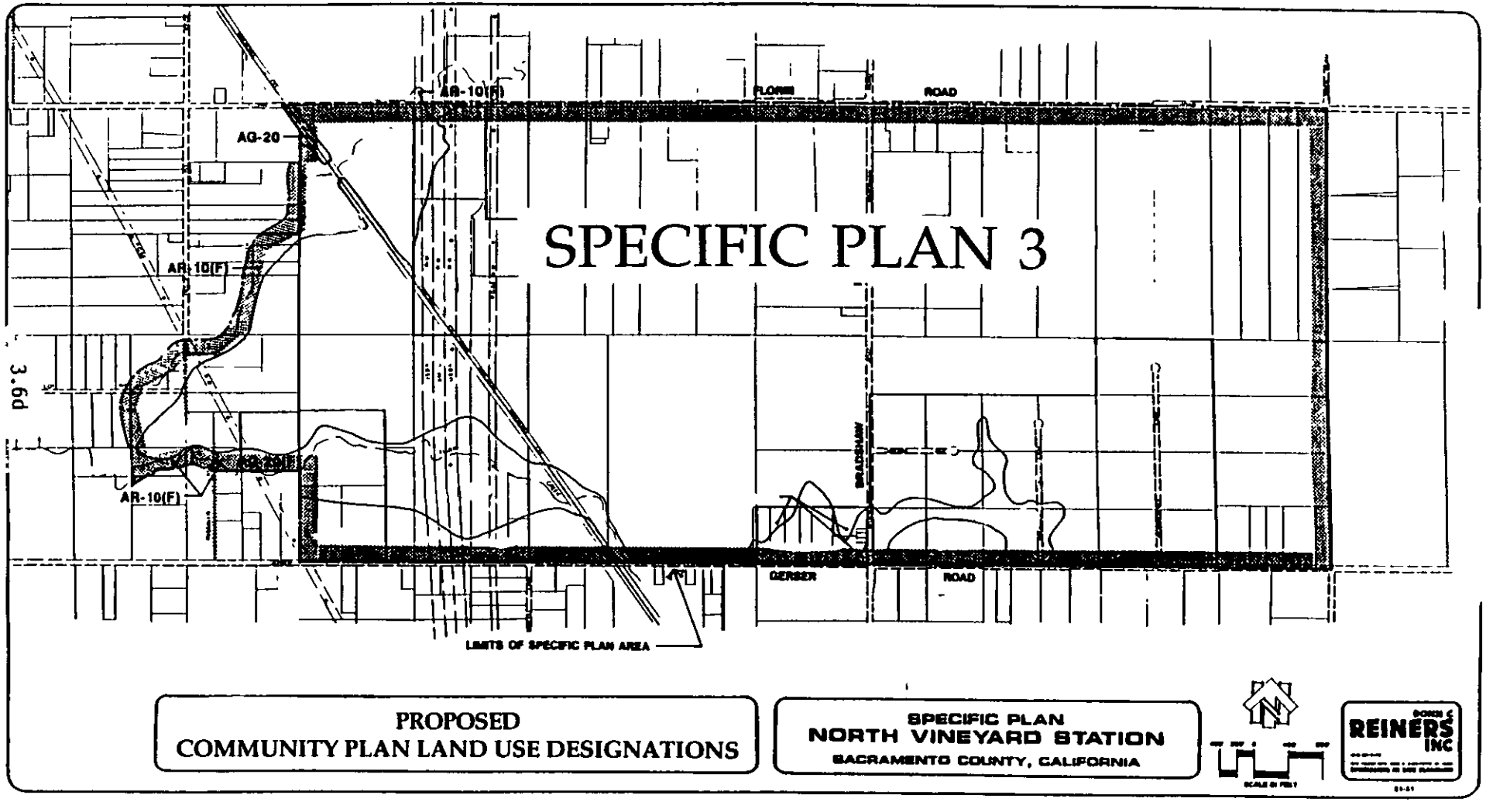


Plate PD-L

Existing Community Plan/Zoning

NVSSP (93-0238)



3.6d

Plate PD-M

<u>Proposed Community Plan</u>

NVSSP (93-0238)

NVSSP Policy Plan & Specific Plan Document.

The March 4, 1996, NVSSP Policy Plan and subsequent May 28, 1997, Public Review Draft North Vineyard Station Specific Plan document has been published under separate cover by the Sacramento County Planning and Community Development Department, and is hereby incorporated by reference. Copies of the Draft Specific Plan document and Policy Plan are available from the County Planning Department at 827 Seventh Street, Room 230, Sacramento CA, 95814.

The NVSSP Policy Plan was prepared for the North Vineyard Station Specific Plan to provide a framework to guide the implementation of the Plan. The Policy Plan, *together with the text of the Specific Plan document and its development standards* and design guidelines, is intended to guide the long-term growth and development of the North Vineyard Station Specific Plan area. (The NVSSP Policy Plan was also published in the EIR NOP environmental document released in March 1996.)

During the 1997 public hearings, the Policy Planning Commission recommended NVSSP Land Use Policy #5 be amended to read: 'Design and architecture of proposed residential projects shall consider the Design Guidelines included in the Specific Plan'; and Open Space Policy #5 be amended to read: 'Where residential development abuts Parkways and Drainage Parkways, fences shall adhere to the following design: six(6) feet in height, consisting of three(3) feet wrought iron on top of three(3) feet of masonry wall. The Planning Commission may waive this requirement where privacy is an issue adjacent to a bicycle path. The revised NVSSP policies endorsed by the Commission are included as Attachment 4 of this document.

The Specific Plan document includes a written text, exhibits, graphics and appendices, including technical reports utilized in the preparation of this EIR. The proposed Specific Plan document will serve as both a policy and regulatory document if the plan is approved and adopted. The Specific Plan includes guiding principles permitted uses, development standards, and design guidelines for the various land uses identified on the proposed Preferred Specific Plan depicted on Plate PD-B. The Specific Plan document includes the land use plan that establishes the type and densities of land uses in the Plan Area. The Specific Plan document contains the following major elements:

A. Opportunities and Constraints Analysis
B. Description of Land Uses
C. Development Standards and Permitted Uses
D. Design Guidelines
E. Transportation and Circulation Plan.

F. Public Services and Facilities
G. Infrastructure Master Plans (Sewer, Water, Drainage)
H. Specific Plan Policies
I. General Plan Consistency Analysis
J. Technical Appendices

The "Technical Appendices" (element 'J' above) includes the following technical studies that have been completed and are currently included as separate volumes of this EIR. Each of the following technical studies and/or reports were utilized in preparation of the Specific Plan document and this EIR:

1. Arborist Reports, Tree Care, Inc.
2. Cultural Resource Assessment, Peak & Associates.
3. Acoustical Analysis, Brown-Buntin Associates, Inc.
4. Transportation Analysis, Fehr & Peers Associates.
5. Preliminary Geotechnical Engineering Report, Wallace-Kuhl & Associates.
6. Toxics/Site Assessment, Wallace-Kuhl & Associates.
7. Elder/Gerber Drainage Study, MacKay & Somps.
8. Water Master Plan, West Yost & Associates (for County Water Resources).
9. Sanitary Sewer Study, MacKay & Somps.
10. Wetland Delineation and Mitigation Plan, Sugnet & Associates.
11. Determinate Invertebrate Surveys, Sugnet & Associates.
12. Special Status Bird Surveys, Sugnet & Associates.
13. Special Status Reptile Surveys, Sugnet & Associates.
14. Special Status Amphibian Surveys, Sugnet & Associates.
15. **Basin E20 technical analyses**
16. **Evaluation of Groundwater Impacts, County WRD**

Zoning Ordinance Amendment.

In some cases, the proposed Specific Plan development regulations deviate from the adopted County Zoning Ordinance. To allow for the proposed Specific Plan deviations, a Zoning Ordinance Amendment is also proposed as part of the project actions necessary to codify the North Vineyard Station Specific Plan development standards in to the County Zoning Ordinance.

In December 1997, the Policy Planning Commission recommended approval of the Zoning Ordinance Amendment to establish alternative code requirements for the North Vineyard Station Specific Plan.

Financing Strategy/Capital Improvement Program.

A Financing Strategy and associated Capital Improvement Program (CIP) has been prepared which identifies the infrastructure improvements necessary to support the Specific Plan's proposed level of development. The Specific Plan CIP and the associated Financing Strategy defines the methods of financing the needed infrastructure and provides a description of infrastructure phasing of development. Separate actions will be necessary to establish assessment districts, fee programs and/or other funding programs consistent with the proposed Specific Plan CIP. The final CIP and related Financing Plan will be subject to subsequent environmental review.

In December 1997, the Policy Planning Commission recommended approval of the Specific Plan Financing Strategy.

Public Infrastructure and Services.

Drainage Improvements.

In conjunction with the Specific Plan, a Drainage Master Plan (DMP) has been developed for the Plan Area. The NVS Drainage Master Plan identifies existing drainage facilities and flooding patterns and analyzes alternatives to recommend preferred flood control and conveyance facilities to serve the drainage needs of the Plan Area. The DMP includes recommendations for Stormwater Quality Management Facilities and a framework for mitigation of wetlands impacted by recommended drainage improvements. Finally, the proposed NVS Drainage Master Plan identifies estimated costs of recommended drainage improvements.

The DMP proposes off-site improvements necessary to accommodate runoff associated with Specific Plan development, including:

1. Modification of downstream section of Elder Creek for a distance of approximately 5,000 feet.

2. An alternative off site detention facility located west of Elk Grove Florin Road.

3. Modification to an up stream section of Elder Creek for a distance of approximately 1,400 feet.

4. Modification of an off-site portion of Gerber Creek.

The proposed DMP includes a number of channel design and alignment alternatives as well as several storm water district basin location alternatives. Several of the DMP alternatives have been developed by members of the environmental community and local residents.

Water Supply Improvements.

The Plan Area lies within the sphere of influence boundaries of Zone 40 of the Sacramento County Water Agency. Water supply to the Specific Plan Area has been master planned according to Zone 40 Master Plans. In accordance with the Water Supply Planning Act (SB 901) the Sacramento County Water Resources Division studied alternatives for supplying the Specific Plan and surrounding areas with water. The NVS Specific Plan Water Supply Plan includes project-specific locations and sizing of water transmission facilities. Extension of off-site regional water transmission and storage facilities may require additional, separate environmental documentation.

Sanitary Sewer Improvements.

In conjunction with the Specific Plan, a Sanitary Sewer Master Plan has been developed for the Plan Area. The NVS Specific Plan Sewer Master Plan identifies provisions for accommodating project flows and flows upstream of the Plan Area. The proposed Specific Plan includes location and sizing of sanitary sewer facilities within the Plan Area.

Project Location

The NVSSP planning area ("Plan Area") is located in the south-central unincorporated area of Sacramento County, at the western edge of the Vineyard community. The City of Sacramento's Central Business District is located approximately eleven miles to the northwest. The Plan Area lies entirely within Sections 4 and 5 of Township 7 North, Range 6 East and within the USGS Elk Grove quadrangle map.

The Plan Area encompasses 1,595± acres of the Vineyard Community Planning Area. The Plan Area is bounded by Florin Road to the north, Gerber Road to the south, the northerly extension of Vineyard Road on the east, and generally by Elder Creek's north and south forks (see Plate PD-A). Bradshaw Road transects the Plan Area in a north/south alignment.

The right-of-way of the Central California Traction Railroad transects the western portion of the planning area.

Environmental Setting

Existing Plan Area Land Use.

The NVSSP project area is predominantly utilized for agricultural-residential uses, however, urban development has occurred within the surrounding Vineyard area, primarily the area east of Elk Grove-Florin Road and in the Vintage Park/Churchill Downs area. The project site is characterized by grassy fields and pastures. Many rural single-family residential dwellings are located within the planning area, along with barns and other out buildings. The small amount of agricultural activity that occurs in the area is generally limited to dry farming. The majority of the site has been subdivided over a period of several years into 147 parcels, most of which are from one-half to 30 acres in size. **Plate PD-N (now Plate PRF-A) identifies the participating property owners as of October 1997.**

The Draft Specific Plan document provides the following description of the existing land uses and facilities in the Plan Area:

Residential Uses.

Numerous residences and agricultural out buildings are located within the Plan area, principally along Florin, Gerber, and Bradshaw roads. Most of the homes are thirty years or older in age. The principal exception is the small cluster of newer custom homes located on Heather Place Lane. Many of the older homes include small-scale dry farming or home occupations. The small neighborhood of homes on Gavern Lane are on roughly 6,000-square foot lots.

Commercial Uses.

The Bradshaw Golf Center occupies a 20-acre parcel on the west side of Bradshaw Road, one-third mile south of Florin Road. A convenience store/gas station/bar is located on the northwest corner of Bradshaw and Gerber roads. A feed store and an equestrian center are located on Bradshaw Road, and a small nursery is in operation on Gerber Road, near Passallis Lane.

Electrical and Natural Gas Utilities.

Tower-mounted high voltage power lines within five separate easements traverse the

western side of the Plan area, approximately one mile west of Bradshaw Road. Three of the easements are contiguous and are oriented in a north-south direction. These three easements, owned by U.S. Bureau of Reclamation (USBR) and Sacramento Municipal Utility District (SMUD), total 400 feet in width and contain 230-kilovolt (kv) transmission systems. Two of these systems use truss towers operated by the Western Area Power Authority (WAPA) for the USBR. The WAPA easements are 125 feet wide. The WAPA tower systems straddle a SMUD-owned steel pole system which exists within a 150-foot easement. SMUD's facilities within this easement also include a 69 kv line on wood poles.

Pacific Gas and Electric Company (PG&E) operates a 230-kv truss tower system in a 75-foot easement located approximately 400 feet east of, and roughly parallel with, the WAPA/SMUD corridor. Also, PG&E has another 230-kv truss tower transmission line in a 75-foot wide easement running diagonally through the western-most portion of the Plan area.

The easements granted for these transmission line corridors include restrictions in land use character (e.g., new buildings are not allowed, and the height of landscaping is restricted). However, the easements may be used for a variety of land uses, including parking lots, low-height vegetation, and certain recreational uses.

Petroleum Pipeline.

A high pressure, 10-inch petroleum transmission pipeline, which belongs to Santa Fe Pacific Pipeline Partners L.P., is located within the Bradshaw Road right-of-way.

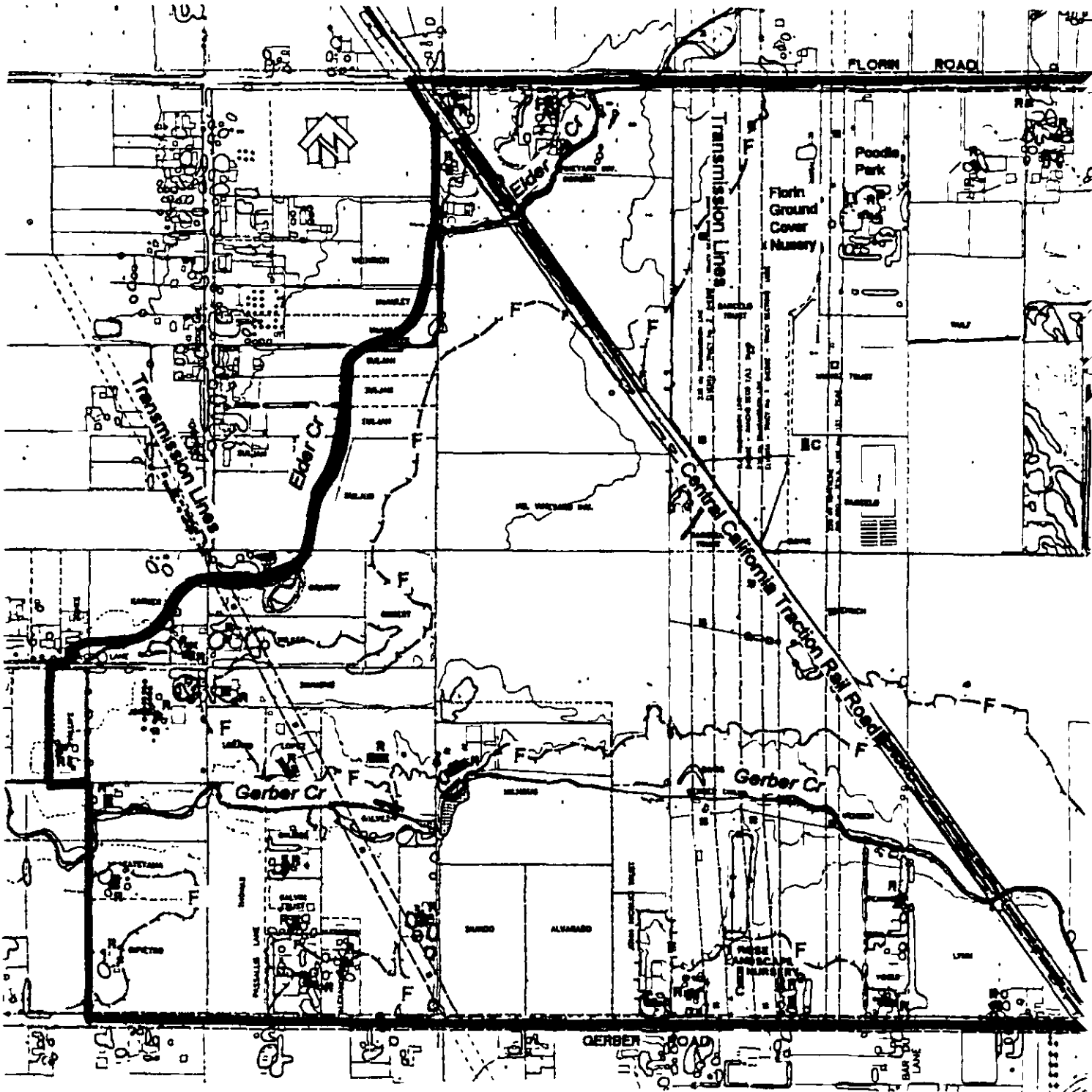
Railroad.

The Central California Traction Railroad occupies a 100-foot wide right-of-way that traverses the Plan area diagonally in a northwest-southeast direction. Currently, the tracks within the right-of-way are used by trains twice daily. There are two at-grade crossings - one at Florin Road and one at Gerber Road.

These existing land uses and facilities are depicted for the west, central, and east portion of the Plan Area on Plates PD-O.1, PD-O.2, and PD-O.3 respectively.

Adjacent Land Use.

Existing land uses surrounding the Plan Area are predominantly agricultural-residential (5-acre or larger lots). However, there are pockets of lower density development (2- to 3-acre



STRUCTURES

- Accessory
- R Single Family Residential
- C Commercial / Business

EASEMENTS/RIGHT-OF-WAYS

- Overhead Electrical
- Railroad

FLOODPLAIN

- F 100 Year

TREES

- Deciduous
- Conifer
- Oaks

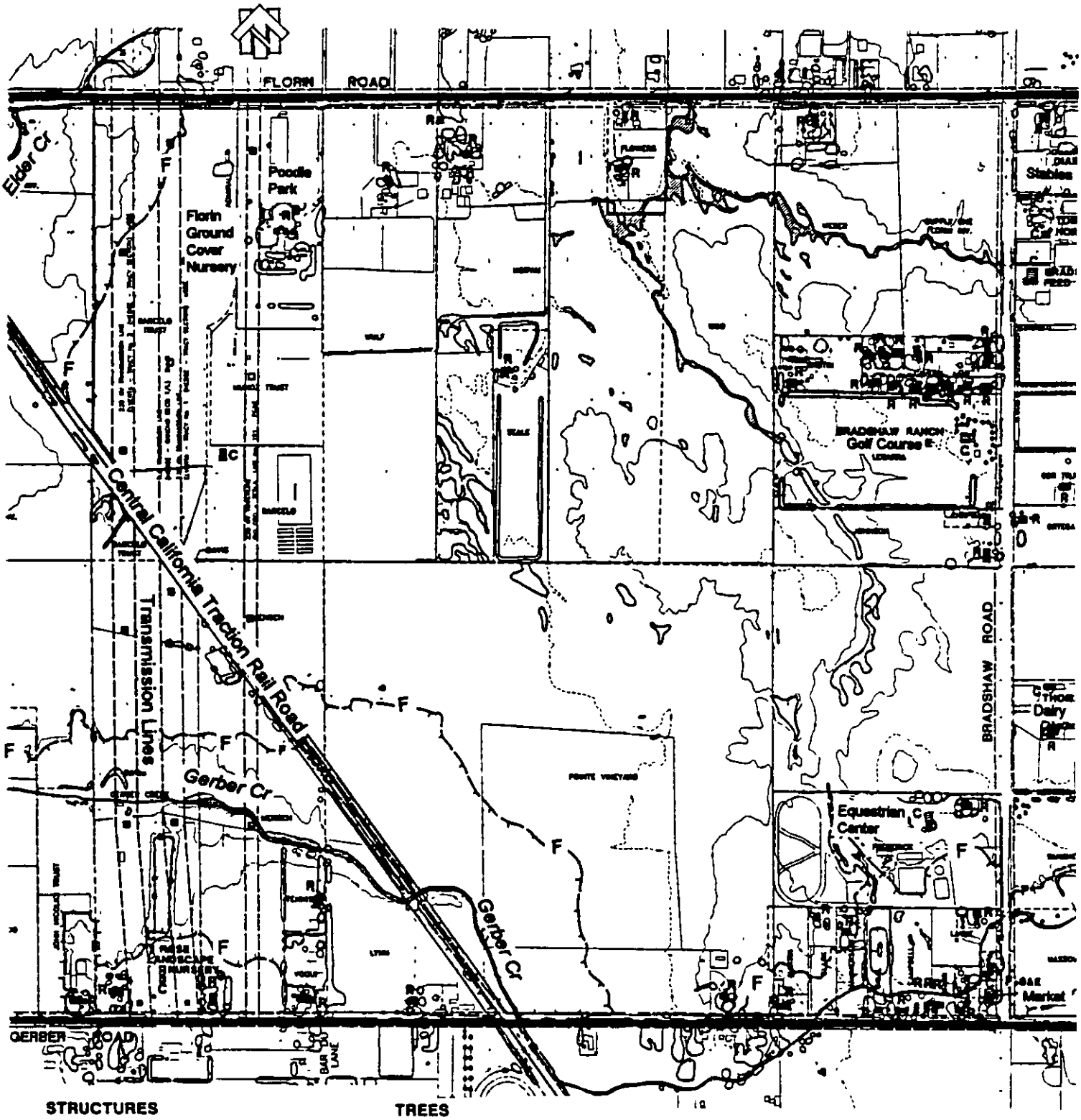
WETLANDS

- Stock Pond
- Vernal Pool
- *Seasonal Wetland*
- Freshwater Marsh
- Drainage Swale
- Perennial Creek

Plate PD-O.1

<u>West Plan Area Land Uses</u>

NVSSP (93-0238)



STRUCTURES

- Accessory
- R Single Family Residential
- C Commercial / Business

EASEMENTS/RIGHT-OF-WAYS

- Overhead Electrical
- Railroad

FLOODPLAIN

- F 100 Year

TREES

- Deciduous
- Conifer
- Oaks

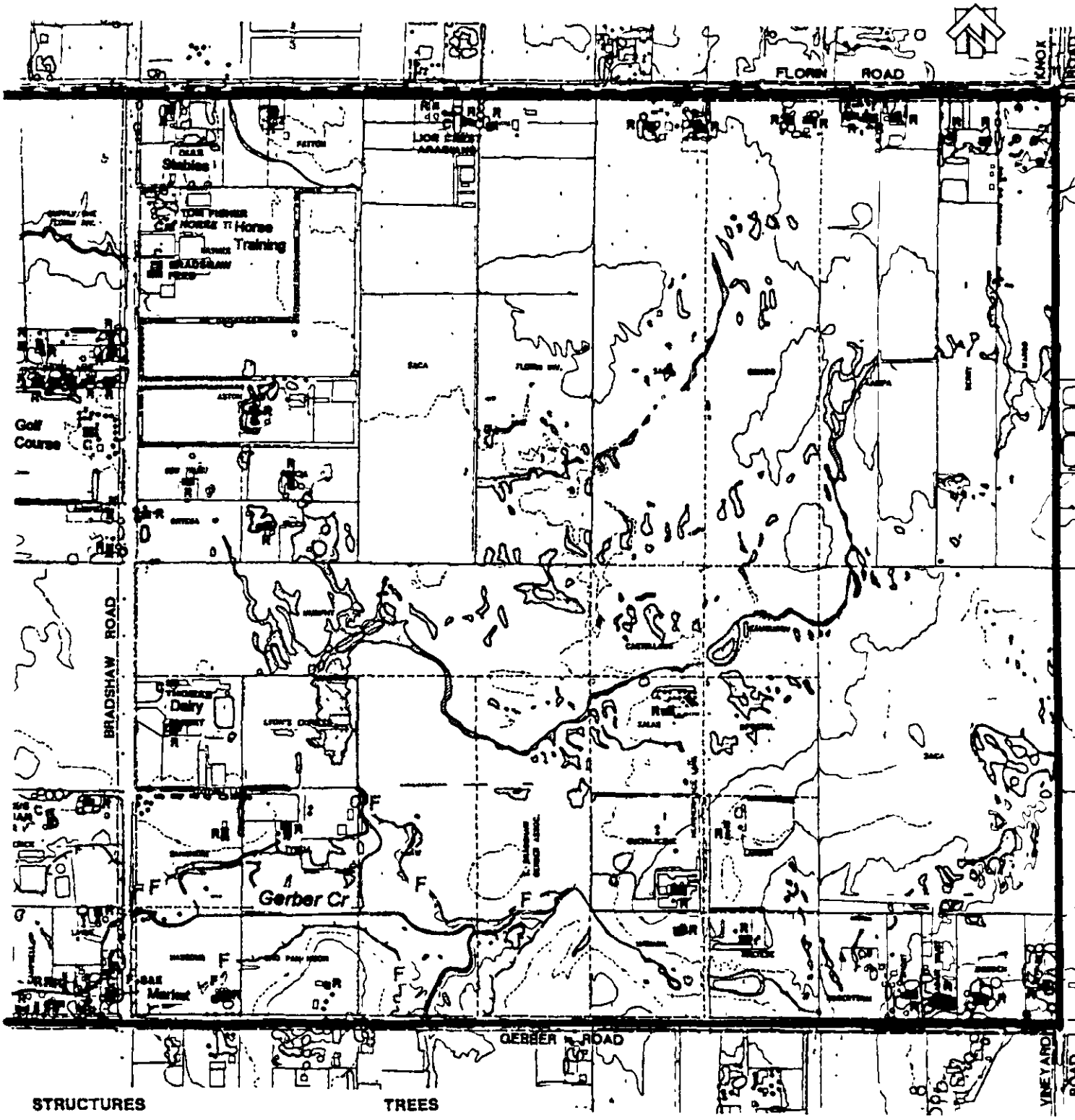
WETLANDS

- Stock Pond
- Vernal Pool
- Seasonal Wetland
- Freshwater Marsh
- Drainage Swale
- Perennial Creek

Plate PD-O.2

Central Plan Area Land Uses

NVSSP (93-0238)



STRUCTURES

- Accessory
- R Single Family Residential
- C Commercial / Business

EASEMENTS/RIGHT-OF-WAYS

- Overhead Electrical
- Railroad

FLOODPLAIN

- F 100 Year

TREES

- Deciduous
- Conifer
- Oaks

WETLANDS

- Stock Pond
- Vernal Pool
- Seasonal Wetland
- Freshwater Marsh
- Drainage Swale
- Perennial Creek

Plate PD-O.3

East Plan Area Land Uses

NVSSP (93-0238)

lots) in the vicinity. Most of the existing development in the vicinity is located west and southwest of the Plan Area.

There are three existing residential areas on the perimeter of the Plan Area. Immediately west of the Plan area boundary are McCoy Avenue and Hedge Avenue. Development along McCoy Avenue consists of older homes on 2- to 10-acre parcels. Dwellings on these properties are often accompanied by minor agricultural uses. Development along Hedge Avenue is similar to that on McCoy Avenue. The Bar Du Lane neighborhood is located south of Gerber Road and west of the railroad. Bar Du Lane includes well-maintained single family dwellings on 2- to 3-acre parcels.

The largest suburban development in the area is Churchill Downs, which is located west of Bradshaw Road and approximately one-half mile south of Gerber Road. The residential density in this newer development is generally 5 to 6 dwelling units per acre, comparable to much of the proposed development in the North Vineyard Station Specific Plan.

Land to the east is primarily undeveloped and is designated Agricultural-Residential (1-10 ac/du). The undeveloped land to the north of the eastern half of the Plan area is designated General Agriculture (20 acre). Land north of the western half is designated Natural Reserve (and contains the Elder Creek recreation area) and Agricultural-Urban Reserve combined with Aggregate Resource Area. Land north of the Plan area has been used primarily for grazing.

Existing Site Conditions.

Topography.

Except for slight undulations in some locations in the eastern portion, east of Bradshaw Road, the Plan area appears visually flat. The highest elevation on the site is 81 feet above sea level and occurs near the eastern boundary, while the lowest elevation is 42 feet and occurs near the western boundary. There is evidence that the local topography has been changed over the years as a result of agricultural practices and parcelization. This is particularly noticeable in areas where wetlands abruptly end at property lines.

Drainage is directed toward the two creeks on the site - Gerber Creek and Elder Creek - both of which are located in the western portion of the Plan area. The confluence of the two creeks is located near the westernmost point of the Plan area.

Soils, Geologic and Seismic Conditions.

A large portion of the Plan Area is underlain by the lower member of the Quaternary-aged Riverbank formation and the remainder is underlain by the Tertiary-aged Laguna formation. The Riverbank formation represents dissected alluvial fans and is generally composed of alluvial gravel, sand and silt derived from the western slopes of the Sierra Nevada Range. The Laguna formation represents eroded alluvial fans composed of alluvial gravel, sand and silt also derived from the western slopes of the Sierra Nevada Range.

No active or potentially active faults are known to pass through or near the Plan Area, as indicated by published geologic maps.

According to the Soil Survey of Sacramento County, California (SSSCC), approximately 75 percent of the site is covered by soils classified as San Joaquin silt loam with slopes between 0 and 8 percent. Approximately 10 percent of the site is mapped as Red Bluff loam, possessing slopes between 0 and 2 percent. These soils are located in irregularly-shaped areas in the northern and eastern sections of the site. Two areas, covering approximately 10 percent of the site, are classified as Redding loam and Redding gravely loam, typified by slopes ranging from 0 to 8 percent. These soils are located in the south central portion of the site.

The remainder of the site is covered by four additional soil types. The first soil type is the San Joaquin-Durixeralfs complex, composed of 55 percent San Joaquin soil and 35 percent Durixeralfs soil. This soil type is located in two small areas near the center of the site. The second soil type is the San Joaquin-Galt complex composed of 45 percent San Joaquin soil and 40 percent Galt soil. This soil is located in one irregularly shaped area in the eastern portion of the site. The third soil type, located in the central portion of the site, is the San Joaquin-Xerarents complex with 45 percent San Joaquin soil and 40 percent Xerarents soil. The fourth soil type listed by the SSSCC is Hedge loam between 0 and 2 percent slopes. This soil has been mapped as a small area in the south-central portion of the site.

The SSSCC rates some of the soils with high clay content to possess moderate to high shrink-swell characteristics. The shallow depth to cemented soil strata result in poor permeability properties. These conditions result in the soils having possible limitations with respect to site development. Undisturbed natural soils at shallow depths are capable of supporting anticipated residential and commercial structural loads.

According to the Map of Ground Water Elevations, Spring 1995, for Sacramento County (Water Resources Division), ground water elevations beneath the Plan area are between 75 and 130 feet below ground surface. However, temporary "perched" high ground water conditions may exist shortly after intense rains and during or following the winter months

due to the presence of relatively shallow and fairly impermeable cemented soils that underlie the site.

Surface Hydrology.

Elder Creek and Gerber Creek flow through the Plan Area. Elder Creek forms the northwestern boundary of the Plan Area and has a watershed of approximately 5,000 acres at its confluence with Gerber Creek at the western boundary of the Plan area. Approximately 500 acres of that shed are within the boundary of the Plan area. Gerber Creek has a drainage area of approximately 3,100 acres, approximately 960 acres of which are within the Plan Area. The creek crosses Gerber Road several times, flowing in and out of the Plan Area before draining into Elder Creek at the western boundary of the Plan area.

Some reaches (or segments) of each of these creeks have been modified or relocated along property lines, possibly in connection with agricultural practices. The two creeks are generally shallow and broad. Significant rainfall results in widespread, but generally shallow, flooding. Floodplain depths range from one-half foot to one and one-half feet. This local flooding is attributed to a number of factors, including 1) inadequate channel capacity, 2) inadequate capacity of roadway culverts, and 3) the presence of numerous private roadway/driveway crossings of the channels with inadequate culvert capacities. An additional flooding factor is the Laguna Creek shed jump, which occurs during high flow events in that creek. In such events, approximately 580 cubic feet per second jumps from Laguna Creek at the Central Traction Railroad and travels north along the railroad to Gerber Creek.

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map for the County of Sacramento, several large areas surrounding the two creeks on the site are listed as "Special Flood Hazard Areas inundated by 100-Year Flood." These areas include the major portion of the site west of the railroad tracks crossing the site and an area approximately 500 feet to the east of the railroad tracks. A flood area approximately 500 feet wide follows Elder Creek across the site and exits across the western boundary of the site.

Wetlands and Other Waters.

There are five categories of wetlands and waters of the United States within the Plan Area, including vernal pool, seasonal wetland, freshwater marsh, drainage swale, and perennial creek, totaling approximately 51 acres. Stock ponds also occur in several locations within the Plan area. Following are descriptions of the wetland resources found in the Plan Area.

Vernal pools are depressions within the grassland landscape which pond during the wet winter months and dry out during spring. They are generally small, but can exist in a wide range of depths (several inches to several feet) and sizes (several square feet to several

thousand square feet). Vernal pools can occur as isolated basins or as depressions within swales. Maturation of various plant species is from late winter to late spring. These wetlands occur throughout the grassland areas, but are most abundant in the eastern half of the Plan Area.

Approximately 18 acres of vernal pools have been identified within the Plan area. Vernal pools support a specialized plant community. Vegetation is dominated by native non-grass species.

Seasonal wetlands are typically shallow and do not pond as deep as vernal pools, although their effective saturation period is about the same. Approximately 18 acres of seasonal wetlands have been identified within the Plan area. Seasonal wetlands are generally more variable than vernal pools with regard to hydrology in that they can occur in basins or on slopes. Vegetation is typically non-native grasses and forbs.

Freshwater marsh is typically deeper than seasonal wetlands and vernal pools. Freshwater marsh occurs on approximately seven acres and is characterized as having a longer wet period (usually well into the summer).

Two *intermittent creeks* occur within the Plan Area and cover approximately six acres. Elder Creek crosses the northwestern corner, and Gerber Creek is located along the southern boundary, near Gerber Road. Elder Creek is the larger of the two, both in size and flow. Both creeks are relatively low volume and would be seasonal in flow duration if not for irrigation and urban water runoff. Supplemental water has extended the flows of these creeks (particularly Elder Creek, which is intermittently wet throughout the year) into the dry season. Within each channel, isolated pools persist throughout the year.

Several *man-made ponds* (stock ponds) occur in the plan area. These features occur in several forms including impoundments of drainage swales, excavations within drainages, or excavation on uplands. Water level in the stock ponds fluctuates widely through the year, typically filling in winter and drying out or declining to lowest levels in fall. Vegetation within these ponds also varies widely depending on water regime and level of disturbance.

Drainage swales are sloped seasonal wetlands, that is, water conveyance systems for local watersheds. They are saturated for slightly lesser periods of time than seasonal wetlands but tend to support a similar flora. Drainage swales, which constitute approximately two acres of the total wetland area, are similar to seasonal wetlands except they convey water on a shallow gradient. The Plan Area supports few of these features because of its overall flat topography.

Wetland resource distribution for the Plan Area is depicted on Plates PD-P.

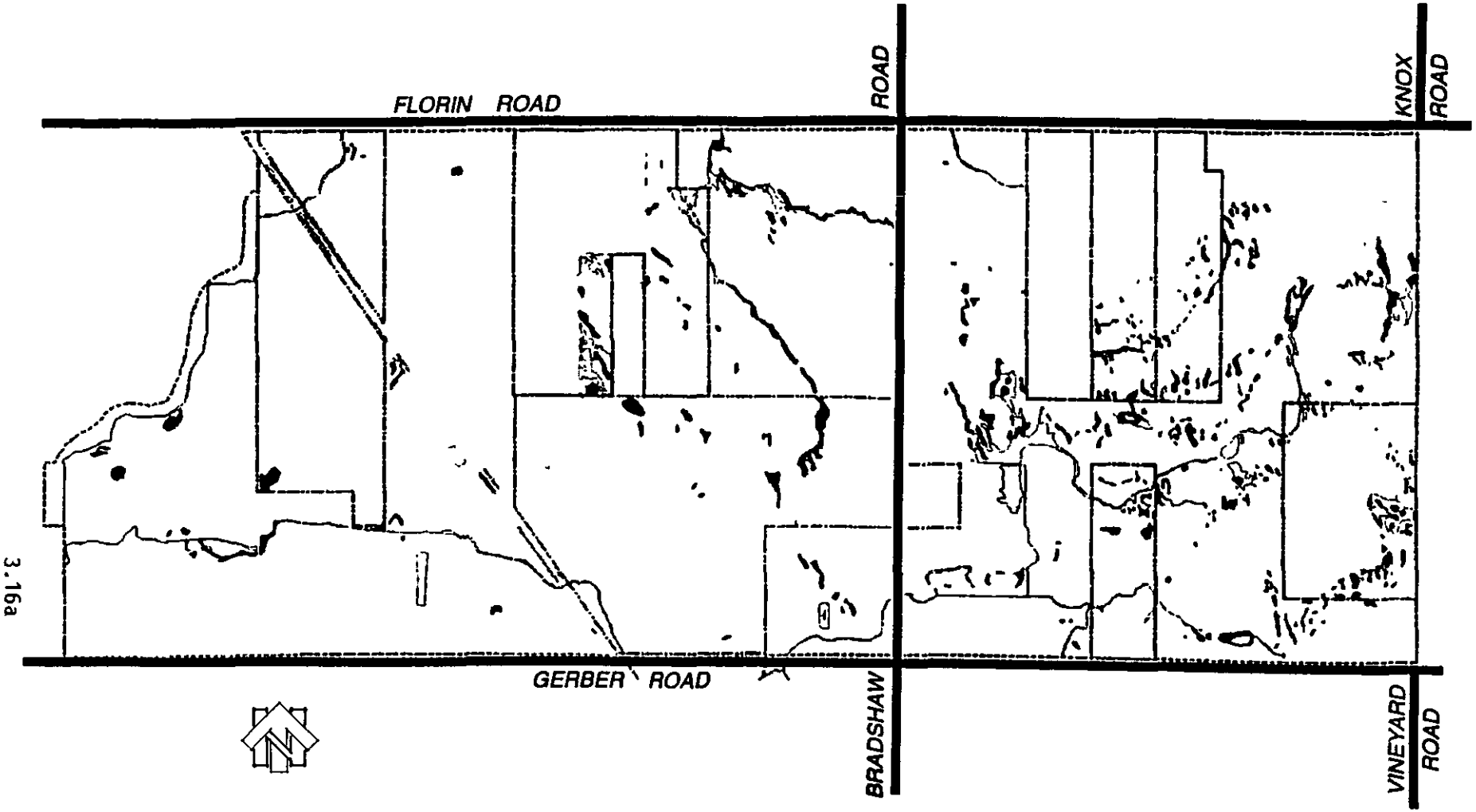


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Plate PD-P
Plan Area Wetland Resources
NVSSP _ (93-0238)

Vegetation.

The Plan Area vegetation is characterized primarily by annual grasses and forbs. Very few native woody plant species occur, except for where water is at or near the surface. Following are descriptions of the principal terrestrial habitats within the Plan area:

The dominant habitat type in the Plan Area is non-native annual grassland. These areas are typically not irrigated and occur in several forms including historically disturbed fallow ground, dry pasture (primarily used for cattle and horses), and "buffer" areas along roads and near houses. Flood irrigation of pastures occurs during the dry months in many parts of the Plan area. Plant species (forage) consists of a mixture of typical dryland species, as well as many species that occupy the margins of wetlands.

Numerous trees are scattered throughout the Plan area, typically associated with homesites or situated along fence lines. A tree survey of the **original** participating properties was conducted by Tree Care Inc. While the survey did not address all parcels within the Plan area (participating parcels account for 36.4 percent of the total area), it accurately characterizes the general nature of the tree cover of the entire Plan area. The survey included native oaks 4-inch diameter at breast height (DBH) and non oak trees of 18-inch DBH. The survey revealed a total of 48 trees with a combined diameter of 1,470 inches. Predominant species were eucalyptus (814 inches total combined diameter), black walnut (121 inches), and fruitless mulberry (168 total inches). Other species include Italian stone pine, catalpa, Modesto ash, box elder, Japanese black pine, silver maple, London plane, weeping willow, and Monterey pine. All trees surveyed were in fair to poor condition. Most of the vegetation around the residences consists of ornamental species. These areas support most of the trees and shrubs.

Table PD-3 is a tree summary for all current participating property owners noted in the preface.

Wildlife.

Throughout the Plan area, wildlife use is associated with that of urban (developed areas) or cropland (pastures and fallow fields) habitats. Wildlife associated with urban habitat includes birds such as American crow, European starling, house finch, and house sparrow. Mammals typical of this habitat include raccoon, striped skunk, and Virginia opossum. Wildlife associated with cropland habitat include birds such as ring-necked pheasant, mourning dove, brewer's blackbird, and western meadowlark. Mammals typically associated

Table PD-3
Tree Summary for
Participating Property Owners (10/17/97)
NVSSP EIR(93-0238)

Includes native oaks 4" DBH and any significant non oak trees 18" DBH and larger.

Summary

Participating Property Owner	Number of Trees	Total Inches
US Home	7	143
Florin Investors	4	83
Winncrest	4	124
Courey	2	40
Total	17	390

Property	Tag	Species	Diameter	Cond	Recommendation
US Home APN 065-0052-02, 04 and 065-0080-079					
US Home	21	London Plane	22	Fair	Prune and deep root fertilize
US Home	22	Black Walnut	18	Fair	Prune
US Home	23	Black Walnut	28	Fair	Prune and remove deadwood
US Home	24	Black Walnut	18	Poor	Remove
US Home	25	Black Walnut	19	Poor	Remove
US Home	26	Black Walnut	20	Fair	Prune, install cable.
US Home	27	Black Walnut	18	Fair	Prune to thin
	Total Inches		143		
Florin Investors APN 66-100-03					
Florin Inv	1	Fruitless Mulberry	20	Fair	Clean out crown
Florin Inv	2	Fruitless Mulberry	22	Fair	None
Florin Inv	3	Fruitless Mulberry	20	Fair	Clean out crown
Florin Inv	4	Fruitless Mulberry	21	Fair	Clean out crown
	Total Inches		83		
Winncrest APN 66-080-04,06,13					
Winncrest	18	Weeping Willow	36	Fair	Clean out crown
Winncrest	19	Weeping Willow	30	Fair	Clean out crown/reduce weight
Winncrest	20	Eucalyptus	23	Poor	Remove
Winncrest	21	Eucalyptus	35	Fair	Clean out crown
	Total Inches		124		
Courey APN 066-0070-004, 05, 08, 19					
Courey 20	Monterey Pine	22	Fair	Reduce weight, fertilize	
Courey 21	Monterey Pine	18	Fair	Prune thin, reduce weight, fertilize	
	Total Inches		40		

with cropland habitats include black-tailed jackrabbit and California ground squirrel. Raptors such as red-tailed hawk and turkey vulture have been observed foraging over open cropland areas.

There are six special-status plant species that they potentially be found the Plan Area, all associated with wetland habitat. Five of these species are primarily found in vernal pools: Grenies legenere, Boggs Lake hedge hyssop, ahart's dwarf rush, Sacramento Orcutt grass and slender Orcutt grass. The sixth, Sanford's arrowhead, is associated with still or slow moving water that occurs in ponds and ditches from late spring through summer. Based on determinant surveys conducted on lands of Plan participants, no special-status species were observed.

Surveys conducted within the Plan Area participating properties revealed that there are three special-status invertebrate species that may occur within the Plan area. Among the participating properties, vernal pool fairy shrimp and vernal pool tadpole shrimp were observed. No elderberry shrubs, primary host plant of the Valley Elderberry Longhorn Beetle (federally "threatened"), have been observed within the Plan Area.

There are two special-status reptiles that may occur within the Plan area. Within the Plan area, habitat for northwestern pond turtle is restricted to Elder Creek and Gerber Creek, which flow through the western and southern portions, respectively. Habitat for giant garter snake does not exist in Elder Creek within the Plan area, but may exist along Gerber Creek. Surveys conducted for the northwestern pond turtle and giant garter snake revealed one northwestern pond turtle along the Elder Creek corridor.

Special-status birds that may occur within the Plan area can be grouped into three categories: potential nesting species, non-nesting species (no suitable nesting substrate is present), and potential winter residents (do not nest in this region but winter-over). On the basis of special-status bird surveys, there are four special-status species which may potentially nest or forage within the participating properties: northern barrier, Burrowing owl, loggerhead Strike, tricolored blackbird. Suitable nesting sites are present within the non-participant properties of the Plan area; however, no determinate surveys were conducted within those parcels. Burrowing owls and foraging tricolored blackbirds have been actually observed in the Plan area.

The presence of special-status mammals species within the Plan Area is highly unlikely due to current and historic land-use practices (i.e., agricultural, rural residential, etc.),

Cultural Resources.

The Eastern Miwok and the Plains Miwok occupied the lower reaches of the Mokelumne, Cosumnes and Sacramento rivers, including the area of south Sacramento County surrounding the Plan area, for a considerable period of time. A study of known village sites in the region indicates that small villages away from the major rivers appear to concentrate on the collection of fish species that inhabited slow-moving waters. There are no known villages in the immediate vicinity of the Plan area, and no prehistoric artifacts or evidence of prehistoric use of the Plan area was found. It is possible that Native American people may have utilized the Plan Area for seasonal resource collection, but did not inhabit it on a permanent basis.

There is no indication that any important events or activities occurred in the Plan area in the early history of the region. The primary historical use of the area has been for agriculture, beginning after the gold rush in the early 1850s. The first lands to be farmed were the rich bottom lands along the major watercourses. By the mid-1860s, the prime farm land had been claimed, leaving lands with poorer soils and less available water, such as the Plan area. With irrigation, the soils in the area were found to be suitable primarily for the raising fruits such as strawberries, grapes, peaches, and apples. The service center for the farmers of the area was the town of Florin, which formed in 1875 about three miles from the northwest quarter of the Plan area along the Central Pacific railroad. Florin served as the shipping point for the farm products of the region.

The Central California Traction Railroad (CCT) was organized in 1905. The 53-mile CCT main line connected Sacramento with Stockton, with a branch from the main line to Lodi. The section from Sheldon to Sacramento through the Plan area was completed in 1910. Passenger service was eliminated in 1933, and in 1946 the use of electricity was discontinued in favor of diesel service. One historic period archeological site was discovered near the railroad tracks in the northwest portion of the Plan area. It consists of a small scatter of 1930s/40s era refuse that was primarily domestic in nature. No existing structures, or structures shown on historic period maps or other documentary sources, were located anywhere near this refuse deposit.

None of the surviving structures within the Plan Area represent the early years of pioneer settlement in this area. The earliest structures date to about the turn of the century. There are several structures dating within the 1900-1920 era, representing small rural residence types and agricultural utility buildings common for this period. Examples range from well preserved to poorly maintained to remodeled beyond recognition. None of the extant buildings are associated with important individuals or events.

Noise Environment.

The Sacramento County Noise Element establishes a land use compatibility criterion of 60 dB L_{dn} for exterior noise levels in outdoor residential activity areas affected by transportation-related noise sources. An exterior noise level of up to 65 dB L_{dn} is allowed only after a practical application of the best available noise-reduction technology is included in the design. In addition, an interior noise level criterion of 45 dB L_{dn} is applied to residential land uses with windows and doors closed.

The existing ambient, or background, noise environment in the Plan Area is defined primarily by traffic on local roadways, railroad operations, and occasional aircraft overflights. The contributions from each of these noise sources to the overall ambient noise environment is described below.

During two 24-hour monitoring periods, three train operations occurred during each 24-hour period, resulting in L_{dn} noise measurements of 61.2 dB and 61.1 dB. If the noise levels due to the train events for these two days are subtracted from the hourly average noise levels during which the train operations occurred, the resulting ambient noise (L_{dn}) values for the two days are 53.3 dB and 54.3 dB.

Noise level measurements were conducted along the Central California Traction Railroad at a distance of approximately 50 feet from the railroad tracks. The noise level measurements indicated that between two and three operations occur per day along the tracks. Currently up to four train operations may occur during a 24-hour period, resulting in 60 dB and 65 dB L_{dn} railroad noise contours at distances of 78 feet and 36 feet respectively from the tracks. According to railroad staff, historically up to eight train operations occurred during a 24-hour period, and in the past five years traffic has doubled along the railroad line. There were no estimates of future operations.

During the field review in the summer of 1995, no aircraft operations were noted as flying directly over the Plan area. The new guiding document for determining potential future noise impacts associated with the Mather Airport is entitled *Mather Airport Comprehensive Land Use Plan Update, May 1996, Draft*. Based upon this document, the Plan area is located outside the 60 dB CNEL contour and thus, is not substantially affected by aircraft overflight noise.

Hazardous Materials.

No obvious evidence of significant hazardous materials contamination was observed during preliminary field reconnaissances of the Plan area. Some observed evidence and/or features indicate that some sites have the potential for hazardous materials contamination; however,

no obvious evidence of contamination was observed.

No potential or confirmed state or federal "Superfund" sites are known to exist within the Plan area. However, the B & E Market, located at the northwest corner of Bradshaw and Gerber roads, is listed as a site where an unauthorized hazardous materials release is known to have occurred.

The Plan area has consisted of fallow land or has supported dry farming, natural grass grazing, and irrigated pasture land uses since the 1940s. These agricultural uses typically require little to no applications of environmentally persistent pesticides. Prior to the 1940s, the area was used for row crops and vineyards. While higher value row crops and vineyards have a somewhat increased potential for the past application of persistent pesticides, the vast length of time (more than 50 years) between the former vineyard and row crop cultivation negates potential concern for any significant levels of persistent pesticide residuals in existing surficial soils of the Plan Area. Therefore, the potential for residual agricultural chemical concentrations in existing surficial soils of the Plan Area is low.

Current strawberry cultivation within the Plan area is not anticipated to involve the use of environmentally persistent pesticides. Nearly all of the persistent agricultural chemicals of the organochlorine pesticide variety have been banned since the time of their prevalence in the 1950s, 1960s, and early 1970s.

Numerous pole-mounted electrical transformers exist within the Plan area. No obvious evidence of transformer leakage was observed on accessible sites. Sites within the Plan area that developed in the early 1980s and later are unlikely to contain PCB-containing transformers. However, many transformers within the Plan area most likely predate 1979 and are not tagged with respect to PCB content. These transformers are therefore of unknown PCB content.

Because the federal government banned nearly all uses of friable asbestos in building materials by 1978/79, existing structures within the Plan area built subsequent to 1979 are not likely to contain asbestos in their building materials. However, most of the existing structures within the Plan area predate 1979 and potentially contain asbestos in their building materials.

Numerous water supply wells are located within the Plan area, some of which are currently in an improperly abandoned condition. However, since there are no large quantity agricultural wastewater producers, industrial facilities, or commercial facilities that discharge wastewater to land within the Plan area and the existing dairy within the Plan area is a relatively small-scale operation, groundwater contamination potential is considered low.

Several stored and abandoned vehicles and other materials and debris are located behind the structures of the Rose Nursery. In 1993, underground gasoline tanks were removed from the B & E Market site, located on the northwest corner of Bradshaw and Gerber roads. Although petroleum residues were detected in subsurface soils, the potential for groundwater contamination is low. This facility is also discussed in the Superfund Sites section, since it is an agency-listed facility.

As previously noted, a buried liquid petroleum pipeline, owned, operated and maintained by Santa Fe Pacific Pipeline Partners, L.P., lies beneath the western edge of the Bradshaw Road right-of-way. No leaks, ruptures or problems are known to have occurred along the pipeline course adjacent to or in the vicinity of the Plan area. The section of pipeline within the Plan area does not appear on the regulatory agency databases as an identified contamination or spill site.

Project Objectives

The overall goal of the North Vineyard Station Specific Plan is to provide for the orderly and systematic development of the planning area through the establishment of a comprehensive planning program that is consistent with the Sacramento County General Plan and to respond to opportunities and constraints in the local community area. The North Vineyard Station Land Use Plan has been developed in accordance to this objective and compliance with adopted goals, policies and diagrams of the Sacramento County General Plan, as adopted December 15, 1993. Staff from the Planning Department assisted the North Vineyard Station Citizens Advisory Committee (CAC) in the formation of a development strategy to characterize the type and form of development within the study area. This development strategy was articulated in the form of guiding principles. These principles were developed to ensure that a high quality land use plan would be developed to provide for the orderly and systematic development of the planning area that meets the objectives of the General Plan. These guiding principles are as follows:

1. Plan, develop and maintain a comprehensive, balanced, integrated, safe and efficient transportation system to ensure mobility for all residents.

2. Promote efficient traffic patterns and effective levels of transit service, which connects the project area to surrounding neighborhoods and provide access to larger market areas throughout the County while minimizing congestion on residential streets.

3. Prepare a Comprehensive Drainage Master Plan to mitigate the threat of flooding within the project area.

4. Provide and maintain an adequate level of public services to the project area including water, sewer, parks, schools, police, fire and library services

5. Promote the location of desirable land uses to minimize land use compatible conflicts

6. Locate desirable future land uses to maximize the opportunity to create an overall pattern of planned orderly development containing a system of land use adequately and sufficiently served by a balanced system of transportation and community services and facilities.

7. The project area should have a center focus that combines commercial, civic, cultural and recreational uses.

8. As many activities as possible should be located within easy walking distance of transit stops or within core area.

9. All planning should be in the form of complete and integrated communities containing housing, shops, work places, parks and civic facilities essential to the daily life of the residents.

10. Provide a diversity of housing types to enable citizens from a wide range of economic levels and age groups to live within the area.

11. Encourage a housing production mix the sizes, types and price range of units and allow for innovative housing construction technologies to provide amenities requested by area residents, including large garages and larger homes.

12. Provide a well defined edge, such as agricultural green belts or wetland corridors, and avoid urban encroachment to such areas

13. Allow for agricultural residential use as a buffer between urban areas and agricultural or constrained areas such as floodplain and wetland resource areas

14. The area should contain an ample supply of specialized open space in the form of squares, greens and parks whose frequent use in encouraged through placement and design.

15. Provide opportunities for open space, recreation and visual relief by planning for parks, trails and parkways. Establish a loop trail that encircles the area and promote open space and recreation use of the areas creeks and sloughs.

16. Whenever possible, the natural terrain, drainage & vegetation of the area should be utilized in conjunction with parks, greenbelt & open space.

17. Counter increasing crime/perception of crime through design improvements and crime prevention activities to increase the safety of residents, business, employees and customers and to maintain and promote neighborhood patronage.

18. Incorporate crime prevention techniques in the urban design of all new developing area within the community. Development plans shall address crime prevention measures including increased visibility and interaction between uses.

19. Encourage the concentration of employment and activity centers, particularly in relation and proximity with higher density residential areas, in order to facilitate shorter travel distances and the use of non-auto modes of travels.

20. Streets, pedestrian paths and bike paths should contribute to a system of fully connected routes to all destinations. Their design should encourage pedestrian and bicycle use by being small and spatially defined by buildings, trees and lighting.

21. Establish development standards that foster compatible design solutions and are aimed at improving how new development projects will fit into the area with the overall intent of defining the area's character.

22. Ensure that a Public Infrastructure Plan and an Infrastructure Financing Plan is adopted, as a component of the Specific Planning program, prior to the occurrence of any new urban development within the area.

23. Public facilities constructed and completed timely with the construction of new residential projects.

24. Improve the quality of life for current and future residents of the project area by ensuring that adequate level of public services are provided.

EIR Alternatives

According to the CEQA Guidelines, an EIR must describe a reasonable range of alternatives to the project, or to the location of the project, which would feasibly attain the basic project objectives. The feasible alternatives to be considered must focus on alternatives that are capable of eliminating or substantially reducing significant adverse impacts caused by the proposed project. Alternatives to the "whole of the project" rather than the project's component parts should be presented in the EIR. The comparative merits of these alternatives must be described and evaluated. The CEQA Guidelines require that "no project alternative" be evaluated, and that an environmentally superior alternative be designated. If the alternative with the fewest or least severe environmental impacts it the "no project alternative", one of the other alternatives should be designated environmentally superior.

This Alternatives section describes the "No Project Alternative" along with a "Increased Density/TOD/Wetlands Preserve Alternative" to address the significant adverse impacts identified for the proposed project while still meeting the basic objectives of the proposed Plan (see Project Objectives section). A relocation or alternate site alternative is not being considered because the project site was deemed an Urban Development Area under the 1993 General Plan. Any alternate site considered would also have to be located within the Urban Development Area designation in order the accomplish the objectives of the project. Consideration of project sites outside of the designated Urban Development Area would likely result in worse impacts. The other project alternatives, 10% Residential Density Reduction Alternative, 15% Residential Density Reduction Alternative, and Modified Core Alternative, were given equal-level consideration throughout this document and were judged to have the same impacts as the Preferred Plan. In other words, these project alternatives do not substantially mitigate any of the impacts identified for the Preferred Plan.

The significant environmental impacts that the Alternatives will seek to eliminate or reduce are:

- Traffic congestion
- Air quality degradation
- Lost opportunities for high level transit service
- Special status species losses
- Loss of opportunity for housing diversity
- Loss of affordable housing opportunities
- Costly infrastructure expansion
- Potential loss of more open space and agricultural lands
- Noise impacts existing receptors
- Loss of important cultural and historic resources

Plate PD-EE
Increased Density/TOD/Wetland Preserve Alternative Conceptual Diagram

Increased Density/TOD

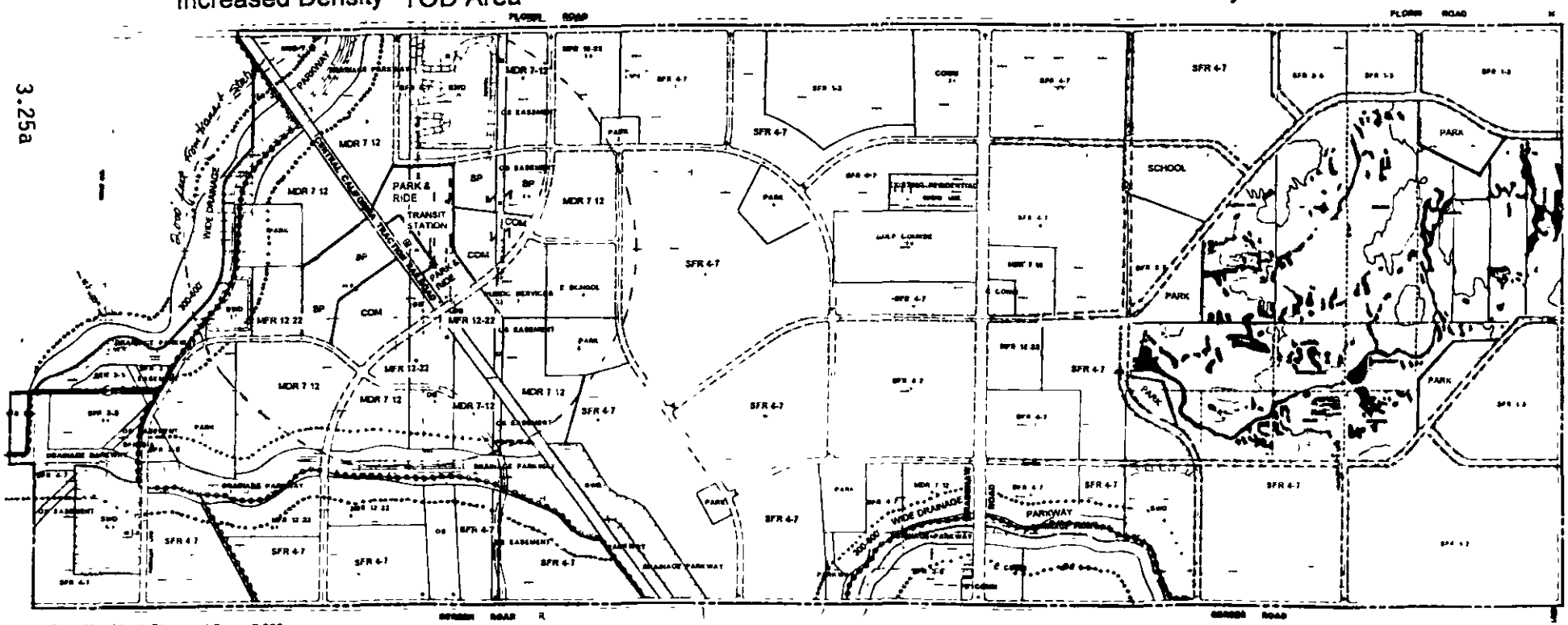
- Transit Station: N/W of Waterman Rd. extension
- Park & Ride area adjacent to transit station
- Commercial Core: more BP & Commercial uses
- MDR 7-12 & MFR 12-22 density in urban core
- SFR 4-7 density increased W/of Bradshaw Rd.

Increased Density/Wetland Preserve

- 200+ acres Wetland Preserve E/of Bradshaw
- Suggested road pattern reconfiguration
- Suggested park sites E/of Bradshaw Rd..
- Suggested school site E/of Bradshaw
- SFR 4-7 density increased E/of Bradshaw Rd.

Increased Density- TOD Area

Increased Density- Wetland Preserve Area



Base Map Used Dispersed Core - 8,339
by Donn C Reiners Inc

No Project Alternative.

The No Project Alternative would keep the existing zoning of the Plan Area in place. The area could then be built to the maximum densities allowed in the AR-2, AR-10, and AG-20 zones (plus a very small parcel of GC zoned land). The existing development entitlements would limit the area to staying very rural in character. Much of the project site could be retained in its present condition and the adverse impacts associated with the Preferred Plan and Proposed Alternatives would be avoided.

From the stand point of avoiding direct physical impacts to the environment, the No Project Alternative appears to be the environmentally superior alternative. However, the No Project Alternative does not meet General Plan goals, objectives and policies in that the North Vineyard Station Specific Plan Area was designated an Urban Development Area for the expressed purpose of accommodating, in part, the growth projected for the County during the 20- year planning horizon. By not accommodating projected growth at this site, the growth needs are likely to be displaced elsewhere to another location that may not be as appropriately situated. The environmental implications of displacing growth may be greater than those impacts associated with the subject project. This would be particularly true if the displaced development was to occur outside of the Urban Policy Area or, worse yet, outside the Urban Services Boundary where no development is envisioned during the next 20 years. Furthermore, the No Project Alternative does not meet the project objectives which, in sum, are intended to guide the formulation of a comprehensive land use plan for an intended growth area. For these reasons, the No Project Alternative is <u>not</u> the environmentally superior alternative.

Increased Density/TOD/Wetlands Preserve Alternative.

This alternative attempts to reduce the numerous significant impacts of the proposed project **(see Plate PD-EE).** It is primarily shaped by compliance with General Plan policies, particularly those in the Land Use Element, Housing Element, and Conservation Element. The Land Use section of this document identifies several inconsistencies the project has with adopted General Plan policies. The Biological Resources section of this document points out the project's inconsistencies with the Conservation Element policies (as well as US Fish and Wildlife Service guidelines) for failure to consider avoidance of wetlands, that is, on-site preservation, as its first priority for mitigation of impacts to wetlands and special status species. The project alternative described in this section will provide remedies for seemingly dissimilar impacts of the project.

Many of the project inconsistencies with the Land Use Element and Housing Element stem from the fact that the Specific Plan densities are overall low compared to densities estimated as appropriate during update of the General Plan in 1993, and do not promote the efficient use of land to sustain a compact urban area that is readily serviceable fully by public transit. The overall growth strategies outlined during the last General Plan Update process seek to:

> ...address the county's most pressing problems: urban sprawl, escalating traffic congestion, non-attainment of regional air quality standards, and growing demand for housing opportunities which meet the needs of an increasingly diverse population. These growth strategies also recognize that reliance upon typical patterns of low density urban development will not address these problems, and new forms of urban development are needed during the county's next twenty years of growth. Consistent with these concerns, the Land Use Element has established the following guiding principles:
>
> - Maximize the use of existing urbanized areas.
> - Reduce consumption of non-urban areas.
> - Link land use with transit
> - Reduce the number of auto trips and regional Vehicle Miles Traveled (VMT).
> - Reduce air pollutant emissions
> - Provide a diversity of housing types.
> - Design the urban area efficiently
>
> (TOD Design Guidelines, Calthorpe Associates, September 1990)

The Transit Oriented Development (TOD) concept was embraced during the General Plan Update process as the key growth strategy to implement the guiding principles of the Land Use Element. Under the TOD concept, new medium and high density housing, public uses, and a majority of neighborhood commercial uses are intended to be concentrated in mixed-use developments located at strategic points along the regional transit system. The Vineyard Area Conceptual Plan (Plate LU-F) of the County General Plan shows plausible TOD sites for the project area. The TOD Design Guidelines state:

> This linkage between land use and transit is designed to result in an efficient pattern of development that supports a regional transit system and makes significant progress in reducing traffic congestion and air pollutants. The TOD's mixed-use clustering of land uses within a pedestrian-friendly area connected to transit provides for growth with minimum environmental and social costs.

The implementation TOD design concept would also bring the project into compliance with the Regional Transit (RT) Master Plan. RT's concerns about the lack of transit opportunities in the Plan Area are disclosed at length in the Land Use section of this document.

Increasing residential densities throughout the plan area to implement the TOD design concept will have a corresponding beneficial effect on mitigating the identified adverse impacts of the project on existing wetlands and special status species. The Biological Resources section of this document suggests an on-site wetland preserve plus avoidance measures as an option to the proposed 100% off-site mitigation plan. While total preservation or avoidance of wetlands in an area designated for urban growth is not practical, a 200-acre preserve (the minimum size considered to be viable per *Sacramento County Vernal Pools* report) could be accommodated. Under this preserve/avoidance scenario, consideration can be given to a wider drainage corridor alternative (discussed in the Hydrology and Flooding section of this report) suggested by NOP reviewers along with accompanying drainage corridor policies for Elder and Gerber Creeks. Although the wider drainage corridors are not needed to sustain a functional drainage system, the wider corridors would increase open space to help avoid wetland impacts.

The increased acreage devoted to open space in the plan area could be offset by increasing average residential densities in the developable portions , thereby resulting in no net loss in the holding capacity of the Plan Area. The logical location for a 200-acre wetland preserve is east of Bradshaw Road where venal pool concentrations are the highest. The Specific Plan Land Use Diagram indicates that the area that may be displaced by a wetlands preserve is primarily designated for Single Family Residential 1-3 and 3-5 units per acre (SFR 1-3 and SFR 3-5). Since these are the two lowest density residential categories proposed in the Specific Plan, the displaced housing units could be recouped by proportionately increasing residential densities in the other residential categories.

Pursuant to the CEQA Guidelines, the "Increased Density/TOD/Wetlands Preserve Alternative" is deemed the environmentally superior alternative because it could reduce many of the adverse impacts caused by the proposed project.

Traffic and Circulation Impacts of Commercial Core Alternatives

Two additional land use plan alternatives were developed during the public hearings at the Policy Planning Commission. These two alternatives primarily involved relocating and dispersing the commercial core area away from existing residential development along Gerber Road. These two new alternatives are known as the Alternative Core Alternative ("Alternative Core") and the Dispersed Core Alternative ("Dispersed Core").

The Alternative Core includes the relocation of most of the commercial and business-professional uses, and approximately 300 multi-family dwelling units to Florin Road and Bradshaw (see Plate TR-N). The Dispersed Core involves relocation of approximately 13 acres of retail commercial uses to the Bradshaw Road/Florin road intersection (see Plate TR-O). During the public hearings the Planning Commission added a 10% density reduction to both alternatives (see Planning Commission Exhibits AA Dispersed Core and Exhibits BB Alternative Core). Due to the overlay of a 10% density reduction and the loss of 11.5 acres resulting from realigning the western edge of the plan area to be coterminous with existing Elder Creek, the holding capacity of the Alternative Core fell from 6,339 dwelling units (DUs) to 5,768 DUs, and the Dispersed Core fell to 5,667 DUs.

The original (October 1996) transportation analysis prepared by Fehr and Peers Associates could not be used to fully disclose the traffic impacts associated with the two new alternatives. In order to evaluate the worst case traffic impacts of the Alternative Core and Dispersed Core Alternatives, a supplemental traffic analysis was conducted by applying the maximum holding capacity of the Preferred Plan of 6,339 DUs. A Supplemental Transportation Analysis was conducted by Fehr & Peers and completed February 6, 1998. The supplemental analysis and the original traffic analysis are included in the Final Technical Appendices Volume III. The findings of the supplemental analysis are discussed below.

Impacts.

The supplemental traffic analysis determined that the Alternative Core and Dispersed Core will generate total numbers of daily and peak hour external vehicle trips that are within three percent of the number of trips generated by the Preferred Plan. Slight variations in trip generation result from differences in the size of commercial and business-professional parcels and differences in dwelling unit intensity. In particular, the Alternative Core includes only half as much acreage designated for business-professional uses as compared to the Dispersed Core and the Preferred Plan (7.1 acres vs. 14.5 acres

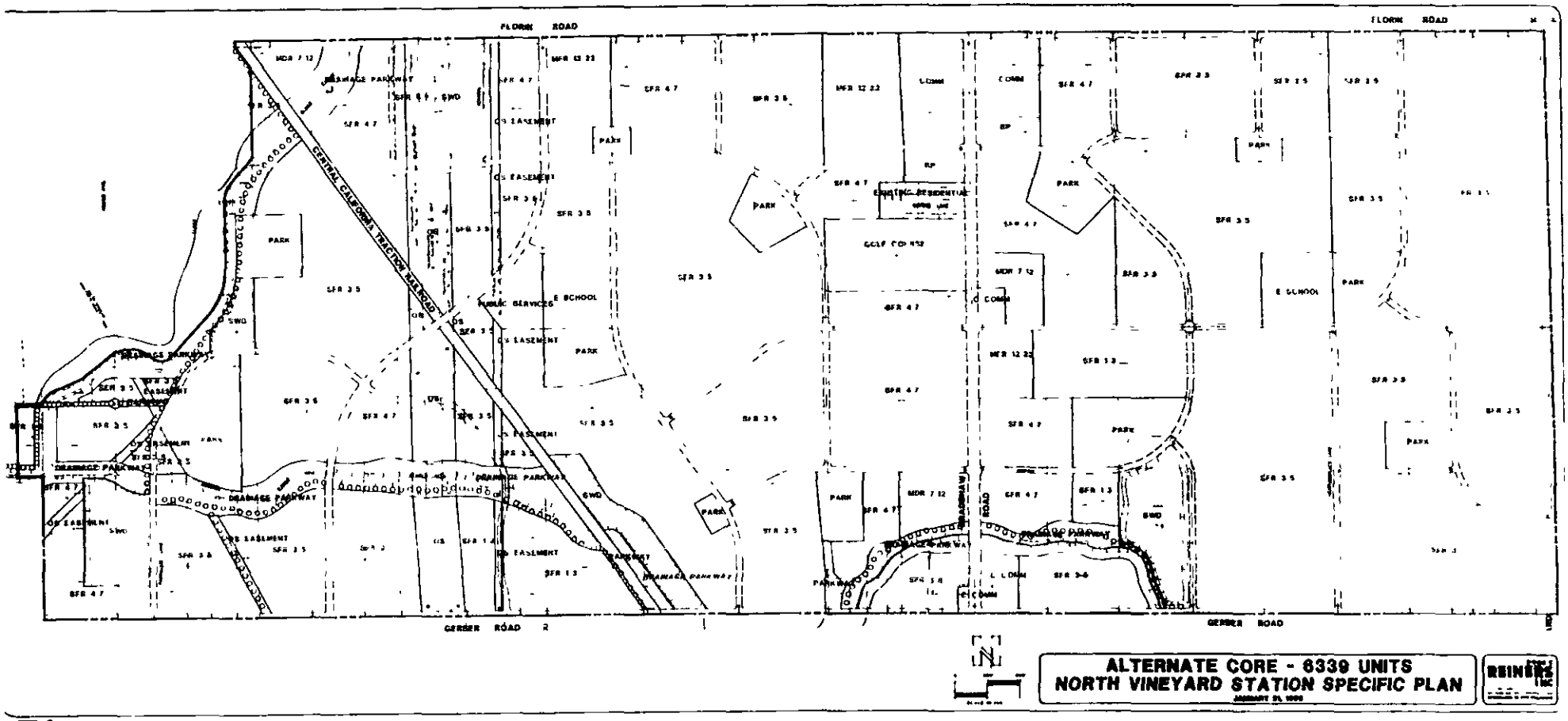


Plate TR-N

<u>Alternative Core (6,339 DUs)</u>

NVSSP EIR(93-0238)

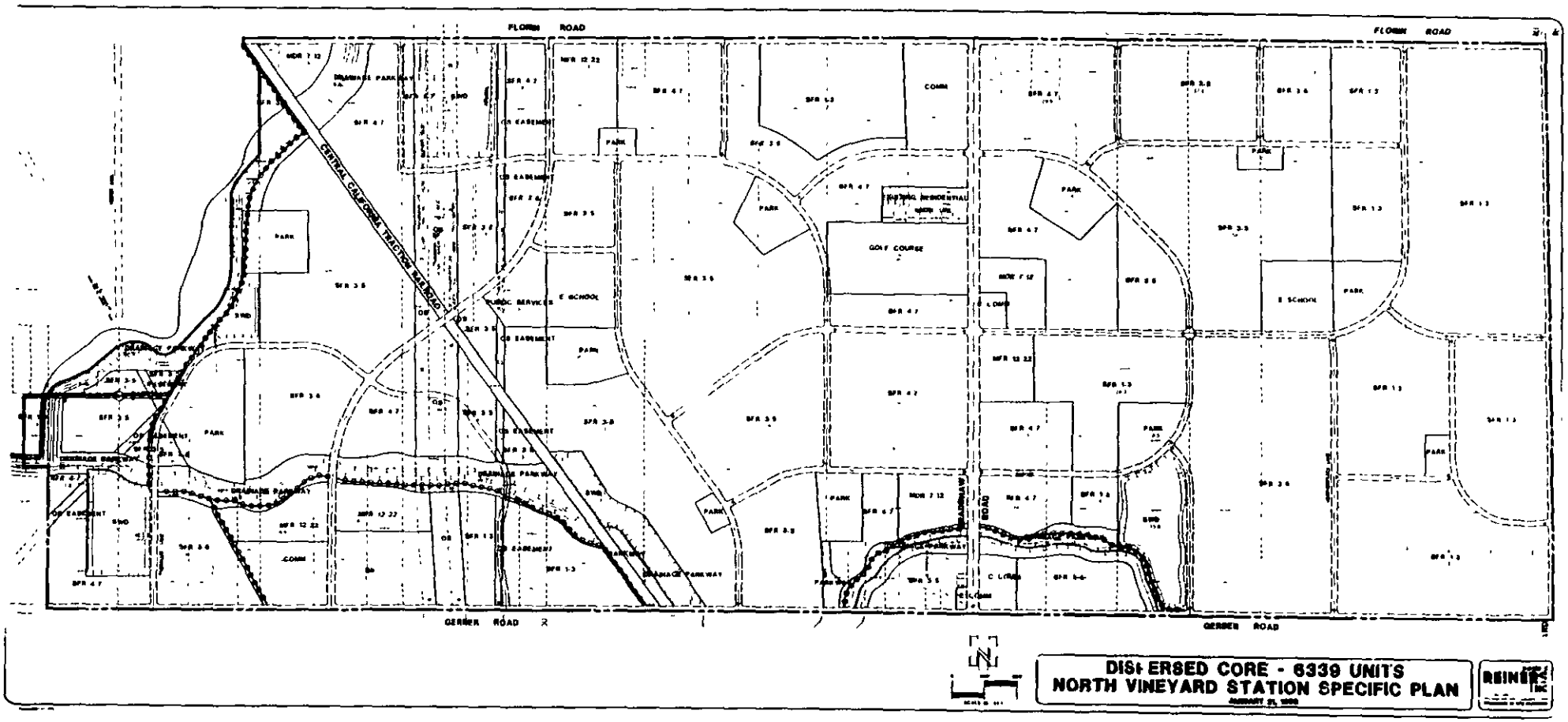


Plate TR-O
Dispersed Core (6,339 DUs)
NVSSP EIR(93-0238)

and 10.1 acres, respectively).

Existing Conditions

The analysis of the proposed alternatives under existing conditions shows that each alternative will result in the same impacts and mitigation measures as the Preferred Plan except for the following:

Alternative Core

1) Impact EP-4 would not occur and Mitigation Measure TR-4 (widening of Gerber Road between Elk Grove-Florin Road and Bradshaw Road) would not be required;

2) Mitigation Measure TR-15 would have to be modified to include three southbound lanes on Bradshaw Road instead of two (referred to as Mitigation Measure TR-15A); and

3) A new impact at the Florin Road/Waterman Road intersection would occur (Impact EP-20A) and would require two though lanes on the eastbound and westbound approaches (referred to as Mitigation Measure RT-20A). This is consistent with Mitigation Measure TR-3 which widens Florin Road between Elk Grove-Florin Road and Bradshaw Road from two to four lanes.

Dispersed Core

1) Mitigation Measure TR-15 would have to be modified to include three southbound lanes at the Bradshaw Road/Florin Road intersection instead of two (referred to as Mitigation Measure TR-15D); and

2) Mitigation Measure TR-16 would have to be modified to include dual right-turn lanes on the eastbound approach of the Elk Grove-Florin Road/Gerber road intersection (referred to as Mitigation Measure TR-16D).

Cumulative Conditions

The analysis shows that implementation of the either the Alternative Core or Dispersed Core alternatives under cumulative conditions will result in exactly the same roadway segment and intersection impacts as the Preferred Plan. Therefore, no changes to the mitigation measures presented in the October 1996 transportation analysis would be required for either alternative under cumulative conditions.

The projected traffic volumes on roadways within the plan area will vary less than 3,000 vehicles per day in the vicinity of the relocated land uses. Except for major arterials, the east-west collector street crossing Bradshaw Road south of Florin road would experience the highest increases in traffic since the relocated retail commercial and business-professional uses will likely include driveways on this roadway. No additional special street treatments (i.e., landscape and access restrictions) or additional collector streets will be required to adequately serve traffic within the plan area.

Mitigation Measures.

Alternative Core

Mitigation Measures TR-1 through TR-3, TR-5 through TR-14, and TR-16 through TR-19 (identified for the Preferred Plan) would all be required for the Alternative Core. Mitigation Measure TR-15A would replace TR-15, and TR-20A is a new required Mitigation Measure.

TR-15A: Modify the Bradshaw Road/Florin Road intersection to include the following lane configurations:

- Dual left turn lanes, two through lanes, and a separate right-turn lane on the northbound approach;
- Dual left turn lanes, *three* through lanes, and a separate right-turn lane on the southbound approach; and
- One left turn lane, two through lanes, and a separate right-turn lane on the eastbound and westbound approaches.

The provisions of southbound dual left turn lanes will require widening of the eastbound departure legs on Florin Road to two lanes before merging to a single travel lane. The length and merging distance for these lanes will be approved by Sacramento County Transportation Division staff. The westbound departure leg will be widened as part of Mitigation Measure TR-3.

Provisions of three southbound lanes will require widening of Bradshaw Road to its ultimate width immediately south of Florin Road. The third southbound lane could be converted to an exclusive right-turn lane at the next downstream intersection or it could be designed to merge into the second through lane. The final configuration will be approved by Sacramento County Transportation Division staff.

These improvements would improve operations at this intersection to LOS C and LOS E in the a.m. and p.m. peak hours, respectively. Improvements should be implemented when the intersection operates unacceptably based on Sacramento County standards.

TR-20A: Modify the Florin Road/Waterman Road intersection to include the following lane configurations:

- Two through lanes and a separate right-turn lane on the eastbound approach; and
- Two through lanes and a separate left-turn lane on the westbound approach.

The provision of two through lanes in the east-west direction is consistent with Measure TR-3 (widening of Florin Road between Elk Grove-Florin Road and Bradshaw Road from two to four lanes).

These Mitigation Measure improvements would improve operations at this intersection to LOS A and LOS B in the a.m. and p.m. peak hours, respectively. Improvements should be implemented when the intersection operates unacceptably based on Sacramento County standards.

Dispersed Core

Mitigation Measures TR-1 through TR-14, and TR-17 through TR-19 (identified for the preferred project) would all be required for the Dispersed Core. Mitigation Measures TR-15D and TR-16D would replace TR-15 and TR-16, respectively.

TR-15D: Modify the Bradshaw Road/Florin Road intersection to include the following lane configurations:

- Dual left turn lanes, two through lanes, and a separate right-turn lane on the northbound approach;
- Dual left turn lanes, *three* through lanes, and a separate right-turn lane on the southbound approach; and
- One left turn lane, two through lanes, and a separate right-turn lane on the eastbound and westbound approaches.

The provisions of southbound dual left turn lanes will require widening of the eastbound departure legs on Florin Road to two lanes before merging to a single travel lane. The length and merging distance for these lanes will be approved by Sacramento County Transportation Division staff. The westbound departure

leg will be widened as part of Mitigation Measure TR-3.

Provision of three southbound lanes will require widening of Bradshaw Road to its ultimate width immediately south of Florin Road. The third southbound lane could be converted to an exclusive right-turn lane at the next downstream intersection or it could be designed to merge into the second through lane. The final configuration will be approved by Sacramento County Transportation Division staff. (This is the same as Mitigation Measure TR-15A).

These modifications would improve operations at this intersection to LOS C and LOS D in the a.m. and p.m. peak hours, respectively. Improvements should be implemented when the intersection operates unacceptably based on Sacramento County standards.

TR-16D: Modify the Elk Grove-Florin Road/Gerber Road intersection to include the following lane configurations.

- dual left turn lanes, two through lanes, and a separate right-turn lane on the northbound and southbound approaches;
- One left turn lane, one through lane, and *dual right-turn lanes* on the eastbound approach; and
- One left turn lane, one through lane, and a shared through/right-turn lane on the westbound approach.

The provision of northbound dual left turn lanes and two westbound through lanes will require widening of the westbound departure leg on Gerber Road to two lanes before merging to a single travel lane in each direction. The length and merging distance for these lanes will be approved by Sacramento County Transportation Division staff.

These Mitigation Measure improvements would improve operations at this intersection to LOS D in both the a.m. and p.m. peak hours. Traffic Mitigation Measures should be implemented when the intersection operates unacceptably based on Sacramento County standards.

Public Facilities Financing

A land use plan has been prepared to accommodate future development in the North Vineyard Station urban growth area while corresponding public facility master plans have been prepared to identify the major facilities required for the Plan Area to develop. This chapter discusses the recently completed NVSSP Financing Strategy which identifies the major infrastructure improvements necessary to support the proposed level of development, analyzes phasing constraints, provides the costs per acre for infrastructure categories, and identifies existing and potential funding sources. The February 17, 1998 draft NVSSP Financing Strategy (Volumes I and II) are provided as Attachment 3 of this document. Volume I is the Financing Strategy draft report. Volume II is the February 11, 1998 draft NVSSP Capital Improvement Programs, or CIP.

State Planning and Zoning Laws (California Government Code) require specific plans to identify in detail the essential infrastructure and services needed to support the land uses described in the plan, as well as a program of implementation and financing measures necessary to carry out those improvements (Section 65451).

The project site is not included in any existing Public Facilities Financing Plan area and will therefore require a financing plan and associated implementation to fund public facilities needed to serve new development in the Plan Area. The requirement to prepare a financing plan new development in urban growth areas is established by Policy LU-8 of the County General Plan, which states:

> *Policy LU-8. Infrastructure financing plans which specify the extent, timing, and estimated cost of all necessary infrastructure shall be approved by the Board of Supervisors, together with the approval of zoning for any urban uses in urban growth areas. The resulting financing mechanisms shall be implemented prior to the approval of all entitlements in urban growth areas.*

It is important to note that at this stage of the project, only a "financing strategy" outlining options for financing facilities has been prepared as a prelude to the actual "financing plan" to follow. A complete financing plan detailing methods for implementing financing mechanisms will be required prior to approval of any rezones pursuant to Policy LU-8. Because the NVSSP does not include any rezoning requests, a financing plan is not required to be part of the project at this stage.

Toward fulfilling the requirement to establish a funding mechanism for public facilities within the Plan Area, the proposed Specific Plan includes a financing strategy that establishes a policy framework for the funding of public improvements and infrastructure required to serve new development in the Plan Area. The purpose of the proposed financing strategy is

to lay the ground work for the NVSSP Public Facilities Financing Plan (PFFP), and to give the Board of Supervisors sufficient information to make the General Plan/Community Plan amendment decision. The financing plan to follow will expand upon the financing strategy and provide greater detail on the phasing of improvements and analyze recommended financing mechanisms.

The Public Infrastructure Planning and Financing Section (PIPFS) has provided input during the formulation of the Financing Strategy. After subsequent cooperative review by the Department of Planning & Community Development and Public Works Agency, the Financing Strategy began its public hearing process as a component of the Specific Plan project during the 1997 Policy Planning Commission hearings on the NVSSP proposal..

Financing Strategy.

Specific Plan Document (5/27/97 Public Review Draft)

The February 17, 1998 draft Financing Strategy (Attachment 3), is a stand-alone document and will be considered by the Board of Supervisors along with the Specific Plan. The analysis and conclusions presented in the Financing Strategy will be summarized in Chapter 10 of the Specific Plan document. As outlined in the Specific Plan document (p. 10-2), the purpose of the Financing Strategy is to:

a) establish a policy framework for financing the required major public infrastructure;

b) identify the major roadway, storm drainage, sanitary sewer, water supply, park improvement, fire protection, library, school, and transit facilities required for the specific plan area to develop;

c) estimate the costs for the identified required major facilities;

d) present the cost per acre and the cost per dwelling unit equivalent for each facility category;

e) identify phasing constraints of the required major facilities;

f) identify existing funding sources to finance the required major infrastructure and identify the infrastructure components that currently do not have a funding source;

g) identify a range of potential strategies to fund the unfunded major

required public facilities.

As further discussed in the Specific Plan (pp. 10-2 & 10-3) the major components of the Financing Strategy are as follows:

Capital Improvement Programs (CIP) - The draft Financing Strategy includes a draft CIP which is separated into major public facilities categories (see Attachment 3). The portion of the CIP for each public facilities category lists the major public facilities necessary for development of the Specific Plan area and the associated costs. The individual CIPs also include exhibits showing the location of projects listed in the CIPs. The CIP projects are derived from the detailed technical studies that were prepared for the Specific Plan.

Phasing - The approach that the PFFP will take in examining the phasing of facilities is described in the draft Financing Strategy. The Financing Strategy discusses phasing issues for each facility category and how they may affect the financing decision. Critical phasing constraints that limit possible funding strategies have been identified.

Costs - The Financing Strategy summarizes the Specific Plan land uses in terms of the total acres and potential development base per land use category. The cost per acre and the cost per dwelling unit equivalent for each facility category will be presented.

Public Facilities Financing Plan Matrix - The Financing Strategy includes the Public Facilities Financing Plan Matrix which is an overall summary of the financing plan that shows the major facility categories, the costs for each major facility category, and existing and proposed funding sources.

Analysis of Proposed Financing Mechanisms - The Financing Strategy identifies a range of potential funding sources for facility components for which there is no identified funding sources. The Financing Strategy also discuss potential solutions for any identified constraints to facilities to be funded by existing programs. Potential funding sources that described in the Financing Strategy include, but are not limited to, development fee programs, a Mello-Roos Community Facilities District, an Assessment District, and participation in other funding sources including local, state, and federal programs.

<u>Financing Strategy (2/17/98 Public Review Draft)</u>

The underlying premise of the recommended financing strategy is that backbone

infrastructure should be funded through impact and connection fees unless timing considerations and cost require the sale of municipal bonds in order to provide the required infrastructure. The following summarizes the recommended NVSSP financing strategy:

- Establish NVSSP project-specific fees to fund all of the major backbone facilities not included in existing fee programs.

- Establish bond financing districts as necessary to provide up-front funding.

The Financing Strategy proposes the following Specific Plan Financing Strategy/CIP policies for the long-term implementation of the financing strategy:

- **Infrastructure should be funded on a pay-as-you-go basis.** To the extent possible, development of project-related facilities should be funded on a pay-as-you-go basis through the payment of development impact fees or private financing. Implementation of this policy will require development of detailed phasing plans for major public facilities.

- **The use of public bonding should be minimized.** The use of public financing districts—such as Mello-Roos CFD's or Assessment Districts (ADs)—should be utilized when pay-as-you-go fee funding is not sufficient to fund required public facilities.

- **Non-developing landowners will be excluded from any public financing districts.** While the development impact fee districts will include the entire Specific Plan area, public financing districts will exclude non-developing landowners. Properties receiving discretionary land use approvals subsequent to the formation of any financing districts should be required to annex into these districts if they benefit from district facilities. (Note: In addition, project-specific fees will only be levied when building permits are pulled; therefore, non-developing landowners who do not pull building permits will not be required to pay fees.)

The Financing Strategy was based on the Preferred Plan with a dwelling unit yield of 6,339 units. In addition to the Preferred Plan, the NVSSP project includes two lower density alternative land use plans (-10% and -15% Alternatives). Each of these plans would reduce the dwelling unit yield. Similarly, the Alternative Core and Dispersed Core alternatives could also result in lower dwelling unit yields if either is approved in combination with the -10% or -15% Alternatives. The overall financing strategy is not affected by these alternative land use plans; however, the lower-density land use alternatives could result in proportionately higher development impact fees per dwelling unit to the extent that Specific Plan facilities needs are not equally reduced. Any changes related to decreased density will

be addressed in the future Financing Plan.

Build out of the Specific Plan will require construction of additional major backbone infrastructure (e.g., roads, water, sewer, and drainage) and facilities to provide additional public services (e.g., fire, libraries, parks, and schools). The following is a list of the major facilities requirements for the Preferred Plan and the estimated facilities costs in 1997 dollars:

Major Public Infrastructure	1997 Dollars
Major Roadways	$28,005,000
Internal Roadways (along public lands)	$1,552,000
Sanitary Sewer	$5,212,000
Drainage	$33,182,000
Water	$29,184,000
Park and Recreation Facilities	$6,904,000
Fire Protection Equipment	$1,795,000
Library (contribution)	$896,000
Transit Facilities	$2,138,000
Public Schools	$67,712,000
TOTAL	**$176,580,000**

The Park and Recreation Facilities cost includes $792,000 for development of pedestrian/bike paths and landscaping within the linear parkway and the drainage parkway.

The Financing Strategy (2/17/98 Public Review Draft) presented in Attachment 3 of this document is substantially consistent with the framework discussed in the DEIR of the then being prepared Financing Strategy.

Future Financing Plan.

A financing plan will be required prior to the approval of any rezone within the NVSSP area. The Financing Plan will build upon the Financing Strategy and will include the following:

Phasing Analysis - Phasing requirements for the identified major public facilities will be addressed. The phasing analysis will identify the priority of CIP items in relation to each other and the level of development at which each CIP project is required. Critical facility requirements that are potential constraints to development will also be identified.

Land Use - The Financing Plan will also describe the Specific Plan land uses in terms of the total development base. A projected absorption schedule for each land use category will be included.

Analysis and Recommendation of Financing Mechanisms - Based upon the facilities costs identified, the nature of the facility, the land uses, projected absorption, and phasing requirements, the Financing Plan will recommend the implementation of one or several funding strategies.

Impacts.

The Specific Plan contains the following policy to address the issue of public services and infrastructure needs:

NVS-74. Provide and maintain an adequate level of public service, through the preparation of an Infrastructure Master Plan and a Capital Improvement Plan, to meet the needs of local residents.

The project includes three land use alternatives for the Specific Plan Area representing residential holding capacities of 6,339 dwelling units (Preferred Specific Plan), 5,759 units (-10% Alternative Plan), and 5,384 units (-15% Alternative Plan) as well as the Planning Commission alternatives known as the Disbursed Core alternative and the Alternative Core alternative. The Financing Strategy was prepared based on the Preferred Plan and the Preferred Drainage Master Plan (the Drainage Master Plan has facilities not consistent with the Preferred Land Use Plan) and not the alternatives, though much of the identified capital improvement requirements for the project will be required of the Preferred Plan or any of the alternatives. However, the Financing Strategy is not an infrastructure financing plan. As discussed in the Land Use section, an Infrastructure Financing Plan is required prior to the approval of zoning for the Plan Area. At a minimum, the NVSSP Financing Plan is expected to recommend its funding mechanisms for all development projects that will ultimately be approved within the Plan Area, whether for the Preferred Plan, the -10 % Alternative Plan, or the -15% Alternative Plan, or any of the core relocation alternatives.

The Financing Plan is tangible to the environmental impacts identified in the EIR in that it provides the mechanism to ensure that needed improvements to mitigate traffic, drainage, water supply and other infrastructure/service impacts can be implemented in a timely manner.

To insure that no rezones are approved prior to the approval of a Public Facilities Financing

Plan for the North Vineyard Station Specific Plan area (in addition to General Plan Policy LU-8), the Public Infrastructure Planning and Financing Section is recommending the following mitigation:

> No rezone shall be approved until a Public Facilities Financing Plan for the North Vineyard Station Specific Plan area has been approved by the Board of Supervisors and no final map shall be recorded until the financing mechanisms identified in the Public Facilities Financing Plan have been implemented.

Mitigation Measures.

The following policy mitigation measures shall be incorporated into the text of the Specific Plan document and/or the related NVSSP Policy Plan to ensure that public facilities and financing impacts for the Plan Area are minimized and addressed at the earliest stages of proposed development:

PFF-1 **No rezone shall be approved until a Public Facilities Financing Plan for the North Vineyard Station Specific Plan area has been approved by the Board of Supervisors and no final map shall be recorded until the financing mechanisms identified in the Public Facilities Financing Plan have been implemented.**

NOTE: This recommended mitigation measure must be accomplished as direct change to the proposed Specific Plan document.

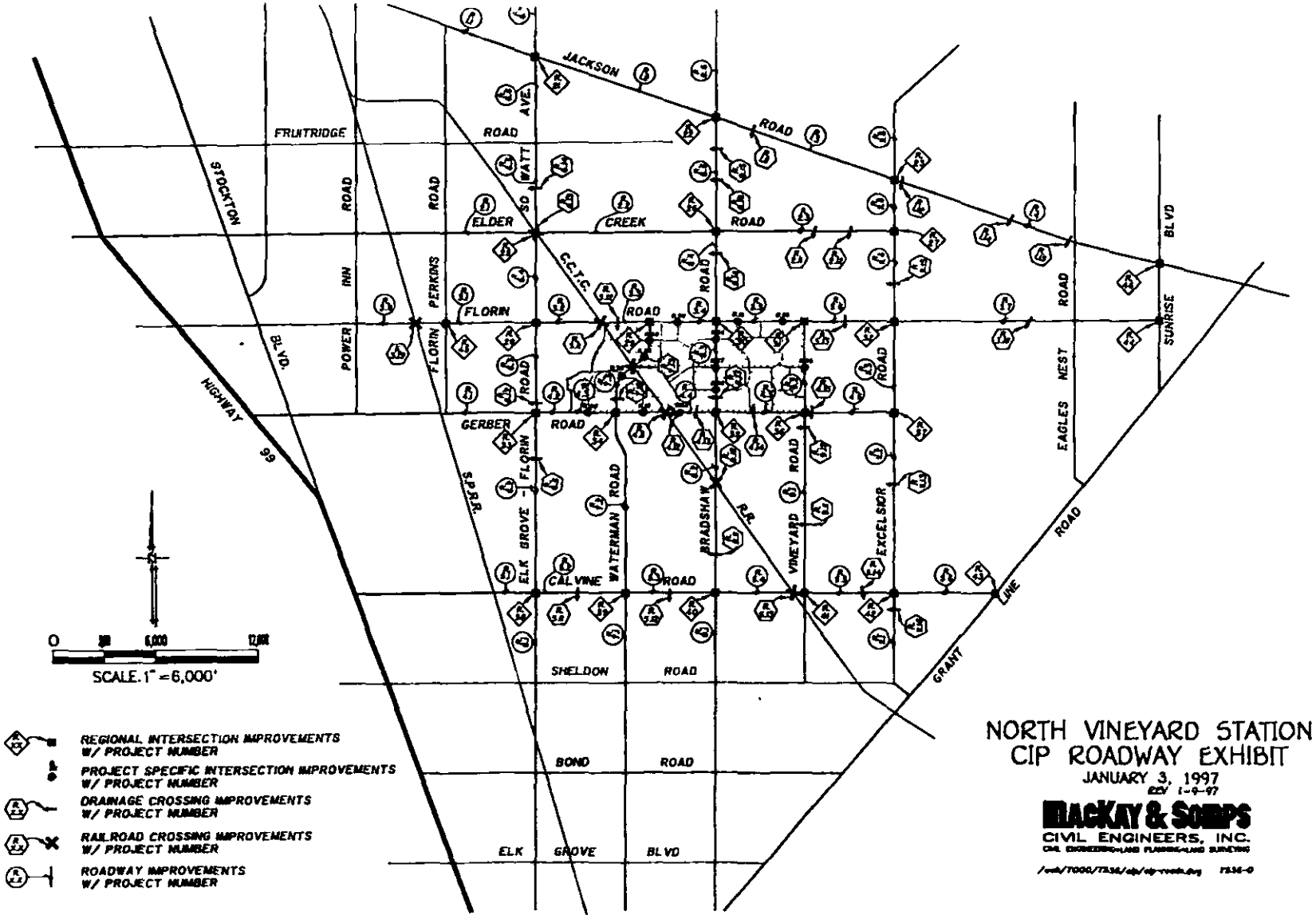


Plate PF-A (rev)

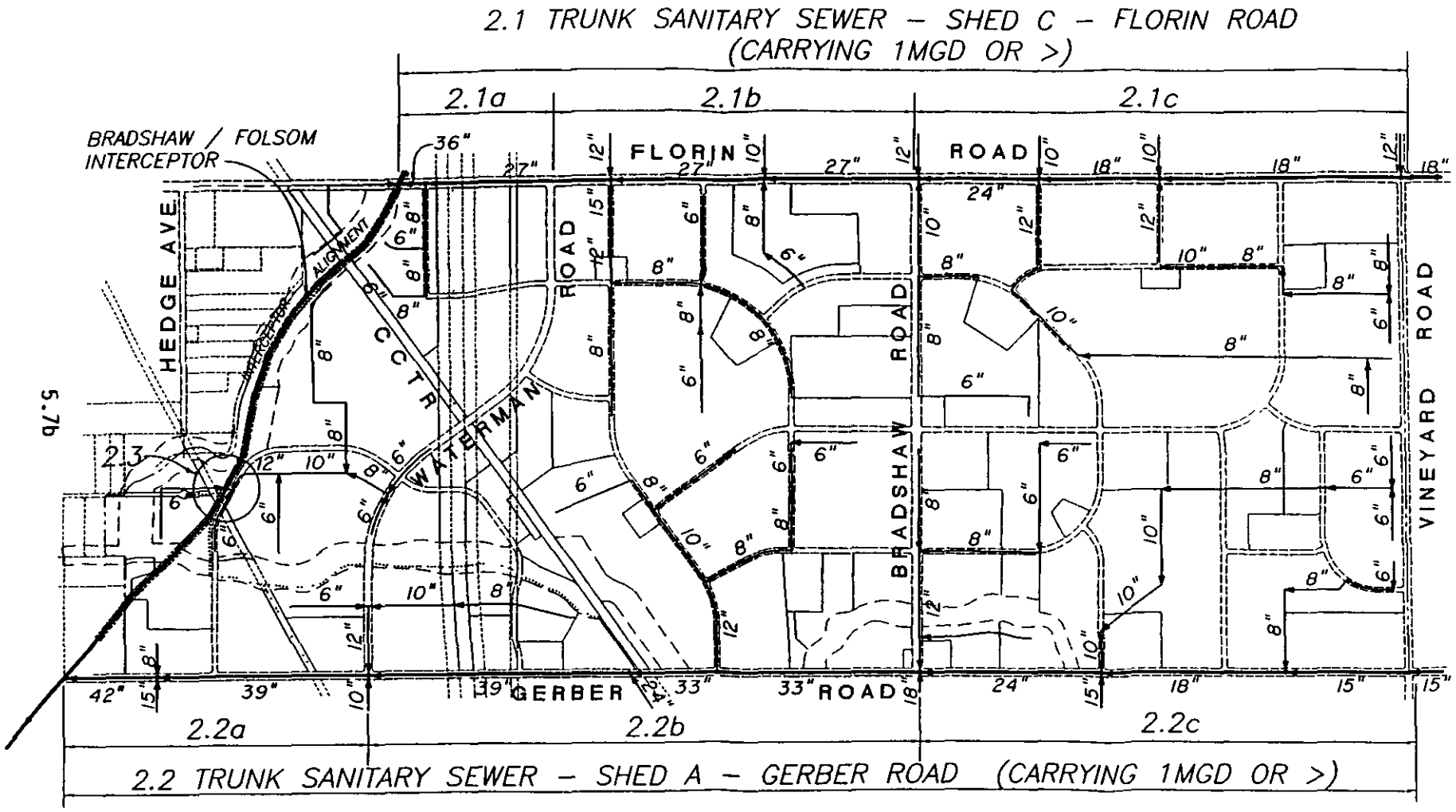
CIP Roadway Exhibit

NVSSP EIR(93-0238)

Plate PF-B (rev)

CIP Sewer facilities Exhibit

NVSSP EIR(93-0238)



LEGEND

SANITARY SEWER PIPE & DIRECTION OF FLOW

0 500 1000 2000
SCALE 1"=1000'

North Vineyard Station
Capital Improvement Program
SEWER FACILITIES

Sacramento, California January, 1997

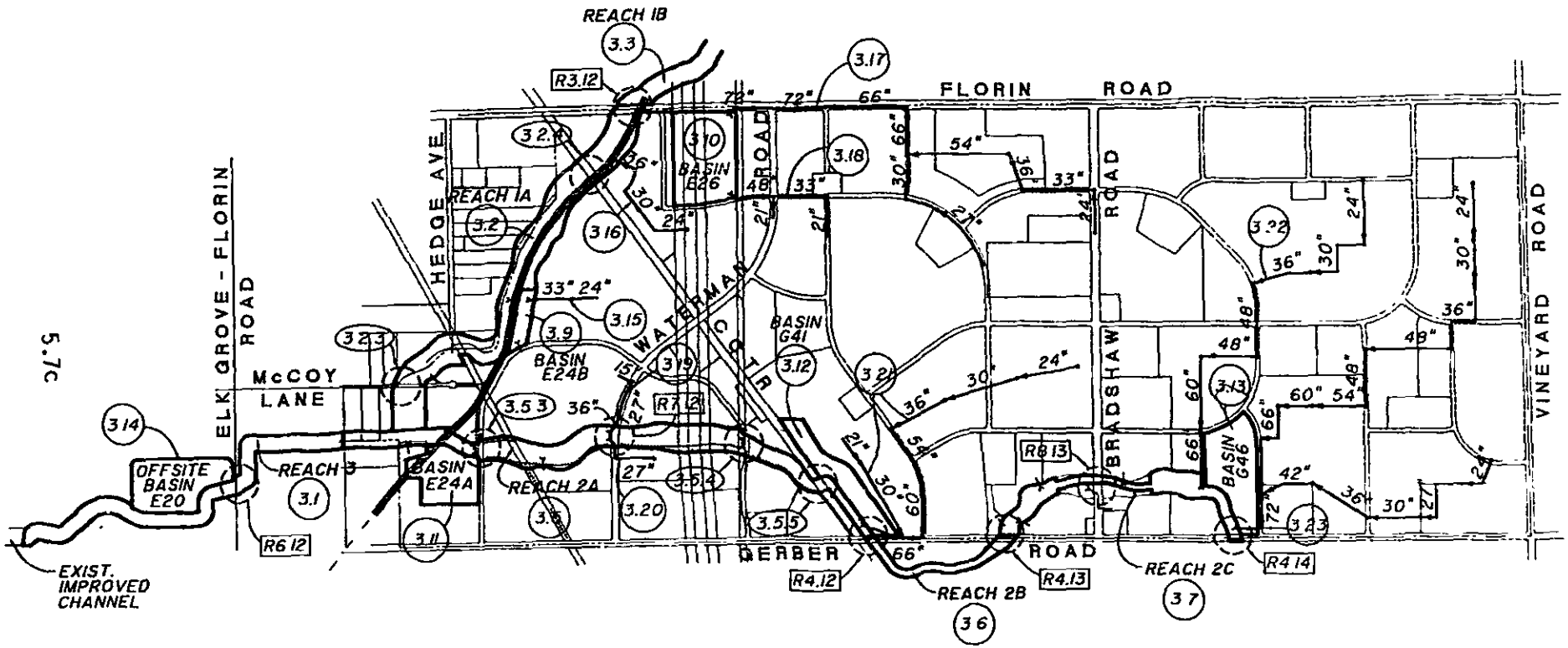
MacKay & Somps
CIVIL ENGINEERS, INC.

5.7b

Plate PF-C (rev)

CIP Drainage Facilities Exhibit

NVSSP EIR(93-0238)



0 600 1200 2400

SCALE: 1" = 1200'

LEGEND

STORM DRAIN PIPE & DIRECTION OF FLOW

R4.12 ROADWAY FACILITY IMPROVEMENTS W/ PROJECT NUMBER & DRAINAGE CROSSINGS

X.X.X DRAINAGE CROSSING IMPROVEMENTS W/ PROJECT NUMBER

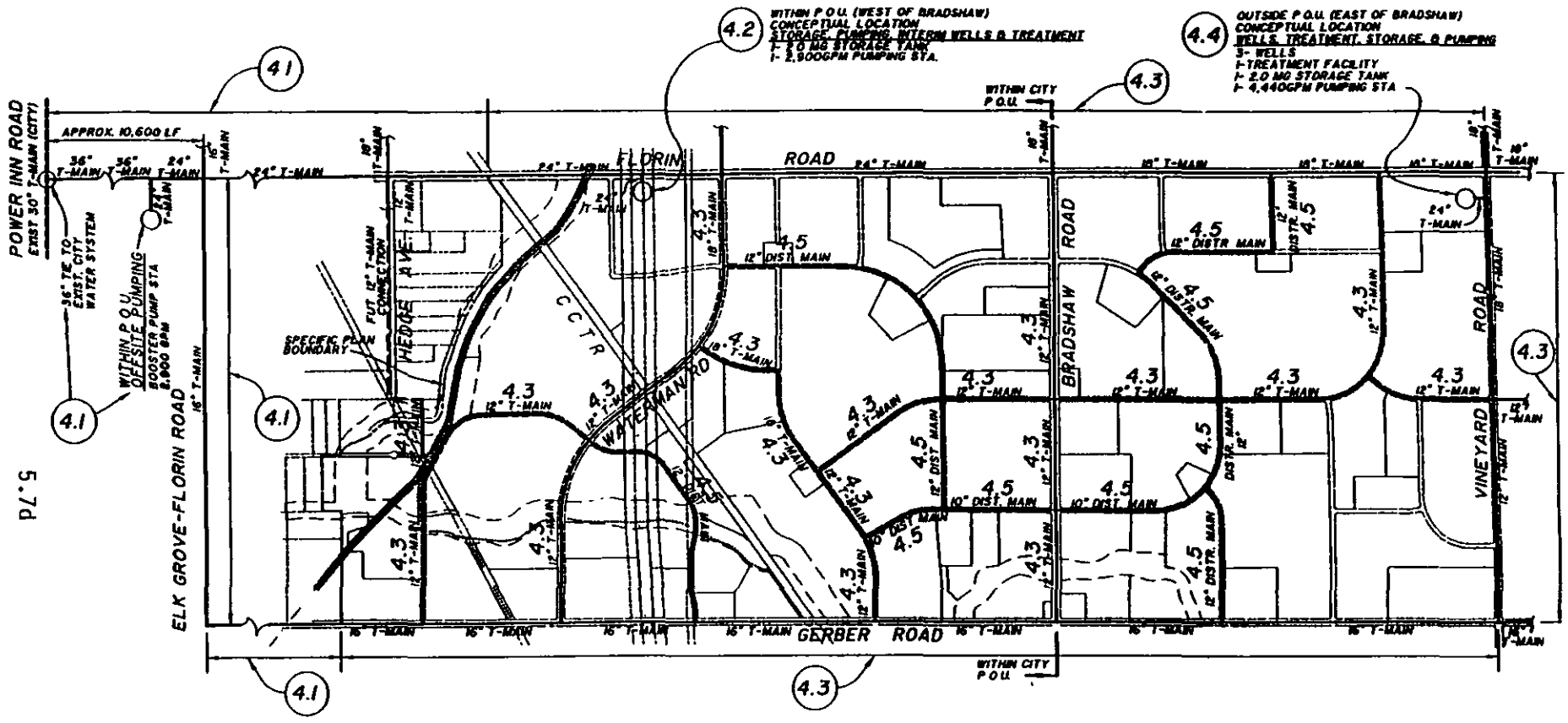
3.X DRAINAGE FACILITY IMPROVEMENTS W/ PROJECT NUMBER

North Vineyard Station
Capital Improvement Program
DRAINAGE FACILITIES

Sacramento, California January 3 1997

MACKAY & SOMPS
CIVIL ENGINEERS, INC.

/vab/7000/7556/cip/cip-storm.dwg 7556-0



5.7d

0 600 1200 2400

SCALE: 1" = 1200'

LEGEND

——— PROP. WATER MAIN

– – – FUTURE WATER MAIN

4X C.I.P. PROJECT NUMBER

WATER MASTER PLAN NOTES:

1. T-MAINS AS SHOWN ON THIS PLAN ARE PER ALTERNATIVE 2, THE PREFERRED ALTERNATIVE
2. ONLY 12" & LARGER WATER MAIN FACILITIES HAVE BEEN SHOWN, EXCEPT WHERE 10" MAIN IS NEEDED TO COMPLETE 12" LOOPS FOR PRESENTATION

North Vineyard Station
Capital Improvement Program
WATER FACILITIES

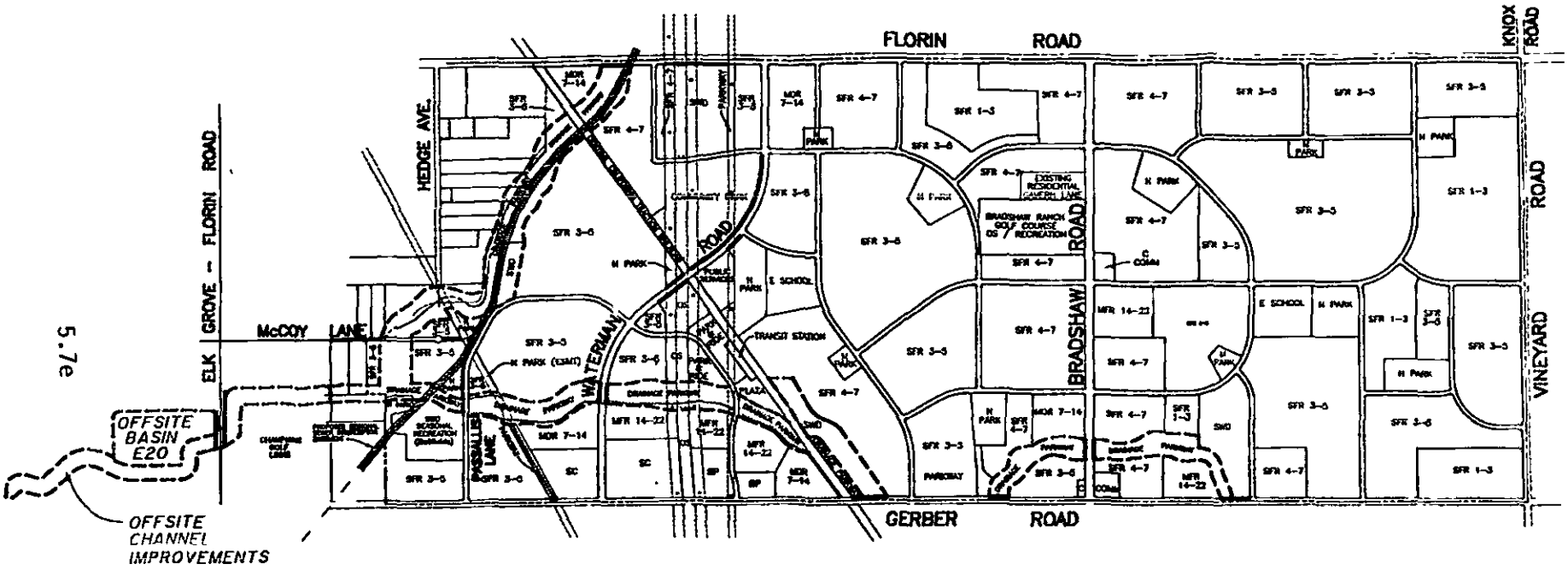
Sacramento, California *MAY 1997*

Plate PF-D (rev)

CIP Water Facilities Exhibit

NVSSP EIR(93-0238)

Plate PF-E
CIP Park/Open Space/Drainage Facility/ Parkway/Frontage @ Arterials Exhibit
NVSSP EIR(93-0238)



LEGEND

PARK/OPEN SPACE/DRAINAGE FACILITY/ PARKWAY FRONTAGE IMPROVEMENTS FUNDED BY ROADWAY FEE

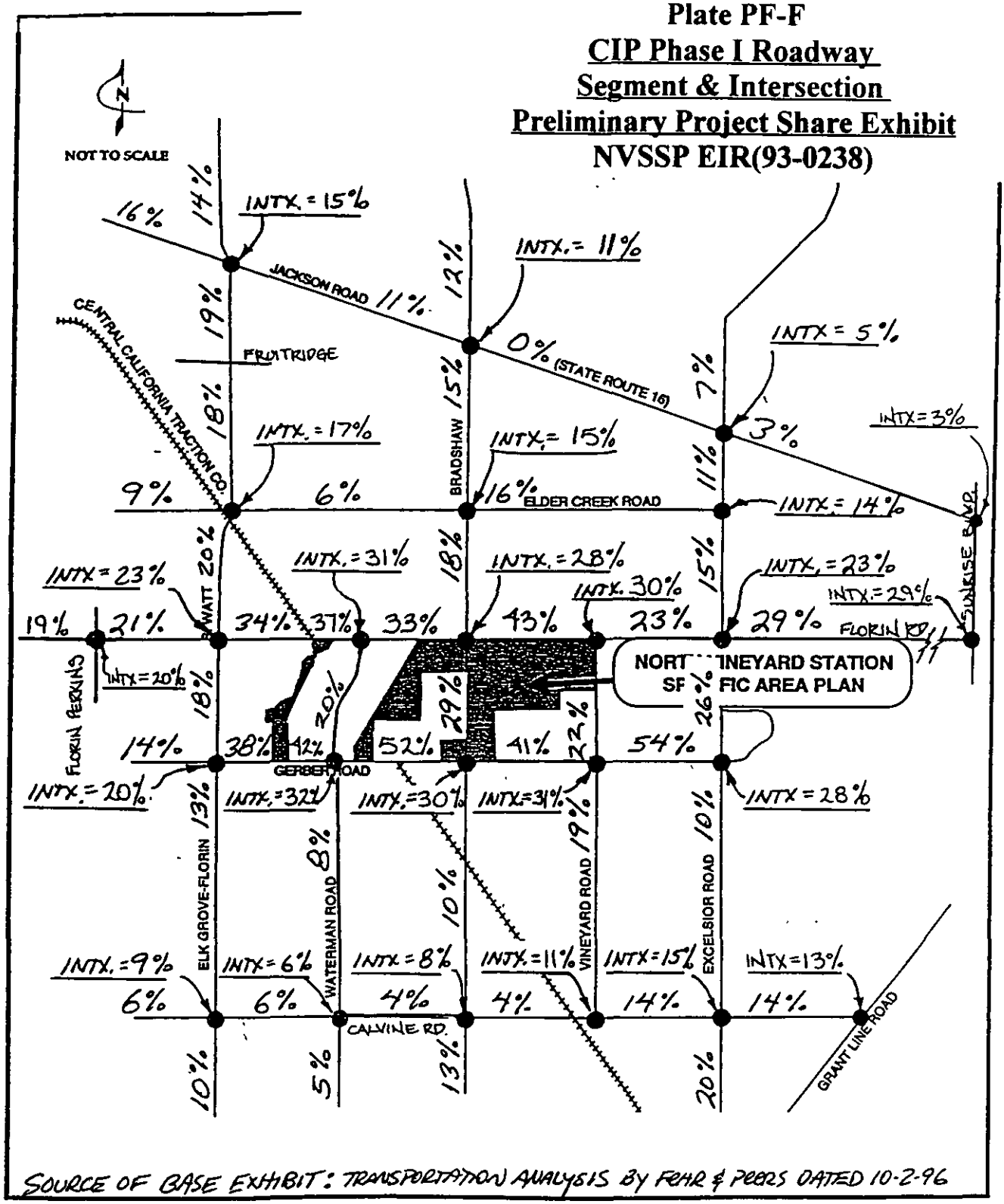
NOTE: SEE LAND USE PLAN FOR LAND USE LEGEND

North Vineyard Station
Capital Improvement Program
PARK/ OPEN SPACE/ DRAINAGE FACILITY/ PARKWAY FRONTAGE AT ARTELIAL ROADWAYS

Sacramento, California *January,1998*

MACKAY & SOMPS CIVIL ENGINEERS, INC.

Plate PF-F
CIP Phase I Roadway Segment & Intersection Preliminary Project Share Exhibit
NVSSP EIR(93-0238)



SOURCE OF BASE EXHIBIT: TRANSPORTATION ANALYSIS BY FEHR & PEERS DATED 10-2-96

FIGURE 1	PROJECT LOCATION MAP	Fehr & Peers Associates, Inc. Transportation Consultants

5.7f

FOR BASIS OF % PROJECT SHARE, SEE PROJECT SHARE CALCULATION SPREADSHEET DATED 1-8-97

MACKAY & SOMPS
CIVIL ENGINEERING • LAND PLANNING • LAND SURVEYING
SACRAMENTO CA

Mackay Somps
Job No: 7536-0

NORTH VINEYARD STATION SPECIFIC PLAN
CIP
ROADWAY
SUMMARY

MITIGATION MEASURE	Project Number	Roadway Segment/ Item	Project Description	On-site or Off-site	Detail Sheet Linked	Quantity	Unit	Unit Price	Total Estimated Cost	% Funded by Other Sources	Other Funding Sources	Reimb. Available	Cummulative Total Estimated Net Cost
TR-3	R3.3	Florin Road- CCTC RR (Project Boundary) to Waterman	6 Lane 108' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg.)	On	No	2,350	l.f.	$370	$870,000	0 00%		$0	$870,000
TR-3	R3.11	Florin Road- CCTC RR Crossing	Reconstruct at-grade RR crossing (108' R/W)	On	No	1	l.s.	$225,000	$225,000	0 00%		$0	$1,095,000
TR-3	R3.12	Florin Road Crossing at Elder Creek	New Bridge Construction (108' R/W)	On	Yes	1	l s	$858,000	$858,000	0 00%		$0	$1,953,000
	R29	Florin Rd. at Waterman Rd.	6 X 4 Intersection Widening & Signalization, 3-way (incl 450' intx. leg imps)	On	No	1	l s	$589,000	$589,000	0 00%		$0	$2,542,000
	R6.12	Elk Grove-Florin Road- Elder Creek Crossing	New Bridge Construction (108' R/W)	Off	Yes	1	l.s	$801,000	$801,000	0 00%		$0	$3,343,000
TR-4	R4.3	Gerber Road- Project Boundary to Waterman	4 Lane 84' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg)	On	No	2,150	l f	$265	$570,000	0 00%	50% Reimb from Vineyard Springs	$285,000	$3,628,000
	R34	Gerber Rd. at Waterman Rd.	4 X 4 Intersection Widening & Signalization, 4-way (incl. 450' intx leg imps)	On	No	1	l s.	$680,000	$680,000	0 00%	50% Reimb from Vineyard Springs	$340,000	$3,968,000
	R60	Gerber Rd. at Collector	4 X 2 Intersection Signalization, 3-way	On	No	1	Each	$140,000	$140,000	0 00%		$0	$4,108,000
	R4.3.1	Park Frontage Imps.-Gerber Road- (Project Bndry to Waterman)	11' Pavement, 3' C&G, 6' Sidewalk = 20'	On	Yes	100	L.F	$91	$9,000	0 00%		$0	$4,117,000
	R4.3.2	Ex. Resid. Frtg. Imps.-Gerber Rd.-(Proj. Bndry to Waterman, No. Side Only)	11' Pavement, 3' C&G, 6' Sidewalk = 20', Soundwall	On	Yes	350	L.F	$150	$53,000	0 00%		$0	$4,170,000
	R7.3	Waterman Road- Gerber (Project Bndry) to Florin (Project Bndry)	4 Lane 84' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg)	On	No	5,200	l f.	$265	$1,378,000	0 00%		$0	$5,548,000
	R7.12	Waterman Road- Gerber Creek Crossing	2-8' X 6' Box Culverts With Headwalls (84' R/W)	On	Yes	1	l s	$159,000	$159,000	0 00%		$0	$5,707,000
	R7.13	Waterman Road- CCTC RR Crossing	Const. new at-grade RR crossing (84' R/W)	On	No	1	l.s	$200,000	$200,000	0.00%		$0	$5,907,000
	R7.3.1	Drain Parkway Frontage Imps.-Waterman Road- (Gerber to Florin)	11' Pavement, 3' C&G, 6' Sidewalk = 20'	On	Yes	500	L.F	$91	$46,000	0 00%		$0	$5,953,000
	R7.3.2	Open Space Frontage Imps.-Waterman Road- (Gerber to Florin)	11' Pavement, 3' C&G, 6' Sidewalk = 20'	On	Yes	450	L.F.	$91	$41,000	0 00%		$0	$5,994,000
	R7.3.3	Park Frontage Imps.-Waterman Road- (Gerber to Florin)	11' Pavement, 3' C&G, 6' Sidewalk = 20'	On	Yes	2,250	L.F	$91	$205,000	0 00%		$0	$6,199,000
	R53	Waterman Rd. at Collector	4 X 2 Intersection Signalization, 4-way	On	No	1	Each	$140,000	$140,000	0 00%		$0	$6,339,000
	R54	Waterman Rd. at Collector	4 X 2 Intersection Signalization, 3-way	On	No	1	Each	$140,000	$140,000	0 00%		$0	$6,479,000
	R55	Waterman Rd. at Collector	4 X 2 Intersection Signalization, 4-way	On	No	1	Each	$140,000	$140,000	0 00%		$0	$6,619,000
TR-2	R8.3	Bradshaw Road- Gerber (Project Bndry) to Florin (Project Bndry)	6 Lane 108' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg.)	On	No	4,400	l.f	$370	$1,628,000	100.00%	Meas. A, Dev Fees, Fair Share Assess Dist.	$0	$6,619,000
TR-17	R35	Gerber Rd. at Bradshaw Rd.	4 X 6 Intersection Widening & Signalization, 4-way (incl. 450' intx. leg imps)	On	No	1	l.s	$785,000	$785,000	60 00%	60% see above 20% Reimb Vineyard Springs	$157,000	$6,776,000
	R8.13	Bradshaw Road- Gerber Creek Crossing	2-8' X 5' Box Culverts With Headwalls (108' R/W)	On	Yes	1	l s	$192,000	$192,000	0 00%		$0	$6,968,000
	R8.3.1	Drain Parkway Frontage Imps.-Bradshaw Road- (Gerber to Florin)	11' Pavement, 3' C&G, 6' Sidewalk = 20'	On	Yes	320	L.F.	$91	$29,000	0 00%		$0	$6,997,000
	R8.3.2	Ex. Resid. Frontage Imps.-Bradshaw Road-(Gerber to Florin)	11' Pavement, 3' C&G, 6' Sidewalk = 20', Soundwall	On	Yes	1,100	L.F.	$150	$165,000	0 00%		$0	$7,162,000
	R8.3.3	Ex. Comm. Frontage Imps.-Bradshaw Road-(Gerber to Florin)	11' Pavement, 3' C&G, 6' Sidewalk = 20'	On	Yes	1,100	L.F.	$91	$100,000	0 00%		$0	$7,262,000
	R56	Bradshaw Rd. at Collector	6 X 2 Intersection Signalization, 4-way	On	No	1	Each	$140,000	$140,000	0 00%		$0	$7,402,000
	R57	Bradshaw Rd. at Collector	6 X 2 Intersection Signalization, 4-way	On	No	1	Each	$140,000	$140,000	0 00%		$0	$7,542,000
	R58	Bradshaw Rd. at Collector	6 X 2 Intersection Signalization, 4-way	On	No	1	Each	$140,000	$140,000	0 00%		$0	$7,682,000
TR-1	R6.8	South Watt- Fruitridge to Jackson	6 Lane 108' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg)	Off	No	4,650	l.f	$370	$1,721,000	80 00%	Co. Dev Fees, City?	$0	$8,026,200
TR-12	R21	Jackson Rd. at South Watt Ave.	4 X 4 Intersection Widening, 4-way (incl. 450' intx. leg imps.)	Off	No	1	l.s	$800,000	$800,000	100 00%	Unidentified	$0	$8,026,200
TR-2	R8.5A	Bradshaw Road- Elder Creek to s/o Morrison Creek Crossing	6 Lane 108' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg)	Off	No	4,200	l.f	$370	$1,554,000	100 00%	Meas. A, Dev Fees	$0	$8,308,200
TR-14	R26	Elder Creek Rd. at Bradshaw Rd.	4 X 6 Intersection Widening, 4-way (incl. 450' intx. leg imps.)	Off	No	1	l.s	$705,000	$705,000	60.00%	Meas. A, Dev Fees	$0	$8,308,200
TR-2	R8.16	Bradshaw Road- Tributary to Elder Creek Crossing	Bridge/Culvert Improvements	Off	No	1	l.s	$190,000	$190,000	100 00%	Meas. A, Dev Fees	$0	$8,308,200
TR-2	R8.5B	Bradshaw Road- s/o Morrison Creek Crossing to Jackson	6 Lane 108' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg.)	Off	No	1,500	l.f.	$370	$555,000	0 00%		$0	$8,863,200
TR-2	R8.15	Bradshaw Road- Morrison Creek Crossing	Bridge/Culvert Improvements	Off	No	1	l.s.	$1,012,000	$1,012,000	100 00%	Road Fund, I.S.T.E.A.	$0	$8,863,200
TR-13, TR-24	R22	Jackson Rd. at Bradshaw	Upgrade signalized 4 X 4 to 6 X 6 Intx., 4-way (incl. 450' intx. leg imps)	Off	No	1	l s	$350,000	$350,000	100 00%	Unidentified	$0	$8,863,200
TR-1	R6.5	South Watt- Elder Creek to Fruitridge	6 Lane 108' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg.)	Off	No	4,850	l f	$370	$1,795,000	80 00%	Co. Dev Fees, City?	$0	$9,222,200
TR-1	R6.4	South Watt- Florin to Elder Creek	6 Lane 108' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg.)	Off	No	4,400	l.f.	$370	$1,628,000	80 00%	Co. Dev Fees, City?	$0	$9,547,800
TR-19	R28	Florin Rd. at Elk Grove-Florin Rd	6 X 6 Intersection Widening & Signalization, 4-way (incl. 450' intx. leg imps)	Off	No	1	l.s.	$1,059,000	$1,059,000	80 00%	Meas. A, Other Sales Tax, Co Rd Dev Fees	$0	$9,759,800
TR-18	R25	Elder Creek Rd. at South Watt Ave.	4 X 6 Intersection Widening & Signalization, 4-way (incl. 450' intx. leg imps.)	Off	No	1	l s.	$785,000	$785,000	80 00%	Co. Roadway Dev Fees	$0	$9,916,800
TR-2	R8.4	Bradshaw Road- Florin (Project Bndry) to Elder Creek	6 Lane 108' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg)	Off	No	4,400	l f	$370	$1,628,000	100 00%	Meas. A, Dev Fees	$0	$9,916,800
TR-2	R8.14	Bradshaw Road- Elder Creek Crossing	Bridge/Culvert Improvements	Off	No	1	l s	$259,200	$259,000	0 00%		$0	$10,175,800
TR-3	R3.4	Florin Road- Waterman to Bradshaw	6 Lane 108' R/W; 4 Lanes & center sect. w/ med (excludes outside lanes & ftg.)	On	No	3,100	l.f	$370	$1,147,000	0 00%		$0	$11,322,800
TR-15	R30	Florin Rd. at Bradshaw Rd.	6 X 6 Intersection Widening & Signalization, 4-way (incl. 450' intx leg imps)	On	No	1	l s.	$1,059,000	$1,059,000	50 00%	Meas. A, Dev Fees	$0	$11,852,100
	R50	Florin Rd. at Collector	6 X 2 Intersection Signalization, 4-way	On	No	1	Each	$140,000	$140,000	0 00%		$0	$11,992,100
TR-4	R4.4	Gerber Road- Waterman to Bradshaw	4 Lane 84' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg)	On	No	5,000	l.f.	$265	$1,325 000	0 00%	50% Reimb from Vineyard Springs	$662,500	$12,654,600
TR-4	R4.11	Gerber Road- CCTC RR Crossing	Reconstruct at-grade RR crossing (84' R/W)	On	No	1	l.s	$200,000	$200,000	0 00%	50% Reimb from Vineyard Springs	$100,000	$12,754,600
TR-4	R4 12	Gerber Road- Gerber Creek Crossing No. 4	2-8' X 6' Box Culverts With Headwalls (84' R/W)	On	Yes	1	l s	$202,000	$202,000	0 00%	50% Reimb from Vineyard Springs	$101,000	$12,855,600
TR-4	R4.13	Gerber Road- Gerber Creek Crossing No. 3	2-8' X 6' Box Culverts With Headwalls (84' R/W)	On	Yes	1	l.s	$185,000	$185,000	0 00%	50% Reimb from Vineyard Springs	$92,500	$12,948,100
	R61	Gerber Rd. at Collector	4 X 2 Intersection Signalization, 3-way	On	No	1	Each	$140,000	$140,000	0 00%		$0	$13,088,100
	R62	Gerber Rd. at Collector	4 X 2 Intersection Signalization, 3-way	On	No	1	Each	$140,000	$140,000	0 00%		$0	$13,228,100
	R4 4.1	Open Space Frontage Imps.-Gerber Road- (Waterman to Bradshaw)	11' Pavement, 3' C&G, 6' Sidewalk = 20'	On	Yes	150	L.F	$91	$14,000	0 00%		$0	$13,242,100
	R4 4.2	Drain Parkway Frontage Imps.-Gerber Road- (Waterman to Bradshaw)	11' Pavement, 3' C&G, 6' Sidewalk = 20'	On	Yes	380	L.F	$91	$35,000	0 00%		$0	$13,277,100
	R4.4.3	Detention Basin Frontage Imps-Gerber Road- (Waterman to Bradshaw)	11' Pavement, 3' C&G, 6' Sidewalk = 20'	On	Yes	300	L.F	$91	$27,000	0 00%		$0	$13,304,100
	R4 4 4	Ex. Resid. Frtg. Imps.-Gerber Rd.-(Waterman to Bradshaw, No Side Only)	11' Pavement, 3' C&G, 6' Sidewalk = 20', Soundwall	On	Yes	1,850	L.F	$150	$278 000	0 00%		$0	$13,582,100
	R4.3F	Gerber Road/Exist. Resid. Front.-(Proj Bndry to Waterman, So side only)	Outside Travel Lane, 11' pavement width with 6' shoulder, at Existing Residential	Off	No	1,350	l f	$59	$80,000	0 00%	100% Reimb. from Vineyard Springs/ EGWV	$80 000	$13,582,100
TR-3	R3.2	Florin Road- Elk Grove Florin to CCTC RR (Project Boundary)	6 Lane 108' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg)	Off	No	3 450	l f	$370	$1,277,000	0 00%		$0	$14,859,100
	R4 12F	Drainage Frontage Imps -Gerber Road Crossing #4 (So Side Only)	11' Pavement, 3' C&G, 6' Sidewalk = 20'	Off	Yes	150	L.F	$91	$14,000	0 00%	100% Reimb. from Vineyard Springs/ EGWV	$14 000	$14,859,100
	R4 13F	Drainage Frontage Imps -Gerber Road Crossing #3 (So Side Only)	11' Pavement, 3' C&G, 6' Sidewalk = 20'	Off	Yes	150	L.F	$91	$14 000	0 00%	100% Reimb. from Vineyard Springs/ EGWV	$14,000	$14,859,100

Mackay Somps
Job No: 7536-0

NORTH VINEYARD STATION SPECIFIC PLAN
CIP
ROADWAY
SUMMARY

MITIGATION MEASURE	Project Number	Roadway Segment/ Item	Project Description	On-site or Off-site	Detail Sheet Linked	Quantity	Unit	Unit Price	Total Estimated Cost	% Funded by Other Sources	Other Funding Sources	Reimb. Available	Cummulative Total Estimated Net Cost
	R4.4F	Gerber Road-Exist. Resid. Front.-(Waterman to Bradshaw, South side only)	Outside Travel Lane, 11' pavement width with 6' shoulder, at Existing Residential	Off	No	1,100	l.f.	$59	$65,000	0.00%	100% Reimb. from Vineyard Spngs/ EGWV	$65,000	$14,859,100
TR-1	R6.3	Elk Grove-Florin Road- Gerber to Florin	6 Lane 108' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg.)	Off	No	4,400	l.f.	$370	$1,628,000	80 00%	Sac. Co. Roadway Dev Fee	$0	$15,184,700
TR-4	R4.2	Gerber Road- Elk-Grove Florin to Project Bndry	4 Lane 84' R/W center sect. (excludes outside 11' pvmt. & ftg.)	Off	No	1,650	l.f.	$265	$437,000	0.00%	50% Reimb from Vineyard Springs	$218,500	$15,403,200
TR-16	R33	Gerber Rd. at Elk Grove-Florin Rd.	4 X 6 Intersection Widening, 4-way (incl. 450' intx. leg imps.)	Off	No	1	l.s.	$705,000	$705,000	100.00%	Mess. A, Dev Fees, O.S.T, Fair Share, SLTPP	$0	$15,403,200
	R4.2F	Gerber Road-Exist. Residential Frontages -(E.G.Florin to Proj Bndry)	Outside Travel Lane, 11' pavement width with 6' shoulder, at Existing Residential	Off	Yes	450	l.f.	$59	$27,000	0 00%	50% Reimb from Vineyard Springs	$13,500	$15,416,700
	R9.2	Vineyard Road- Gerber (Project Bndry) to Florin (Project Bndry)	4 Lane 84' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg)	On	No	4,400	l.f.	$265	$1,166,000	0.00%		$0	$16,582,700
	R36	Gerber Rd. at Vineyard Rd.	4 X 4 Intersection Widening & Signalization, 4-way (incl. 450' intx. leg imps.)	On	No	1	l.s.	$680,000	$680,000	0.00%	50% Reimb from Vineyard Springs	$340,000	$16,922,700
	R31	Florin Rd. at Vineyard Rd.	6 X 4 Intersection Widening & Signalization, 3-way (incl. 450' intx. leg imps.)	On	No	1	l.s.	$589,000	$589,000	0 00%		$0	$17,511,700
	R59	Vineyard Rd. at Collector	4 X 2 Intersection Signalization, 3-way	On	No	1	Each	$140,000	$140,000	0.00%		$0	$17,651,700
TR-8	R3.5	Florin Road- Bradshaw to Vineyard (Project Bndry)	6 Lane 108' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg)	On	No	4,400	l.f	$370	$1,628,000	0 00%		$0	$19,279,700
	R51	Florin Rd. at Collector	6 X 2 Intersection Signalization, 3-way	On	No	1	Each	$140,000	$140,000	0.00%		$0	$19,419,700
	R52	Florin Rd. at Collector	6 X 2 Intersection Signalization, 3-way	On	No	1	Each	$140,000	$140,000	0.00%		$0	$19,559,700
	R4.5	Gerber Road- Bradshaw to Vineyard (Project Bndry)	4 Lane 84' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg)	On	No	4,400	l.f	$265	$1,166,000	0 00%	50% Reimb. from Vineyard Springs	$583,000	$20,142,700
	R4.14	Gerber Road- Gerber Creek Crossing No. 2	2-6' X 5' Box Culverts With Headwalls (84' R/W)	On	Yes	1	l.s	$179,000	$179,000	23 00%	23% Drain.Fee Reimb.50%Reimb.Vinyrd Spngs	$68,915	$20,211,615
TR-5	R1.2	Jackson Road- South Watt to Bradshaw	6 Lane 108' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg)	Off	No	10,400	l f	$370	$3,848,000	100.00%	Unidentified	$0	$20,211,615
	R4.5 1	Drain Parkway Frontage Imps.-Gerber Road- (Bradshaw to Vineyard)	11' Pavement, 3' C&G, 6' Sidewalk = 20'	On	Yes	160	L.F	$91	$15,000	0 00%		$0	$20,226,615
	R4.5.2	Detention Basin Frontage Imps-Gerber Road- (Bradshaw to Vineyard)	11' Pavement, 3' C&G, 6' Sidewalk = 20'	On	Yes	220	L.F.	$91	$20,000	0.00%		$0	$20,246,615
	R3.3.1	Drain Parkway Frontage Imps-Florin Road- (CCTC RR to Waterman)	11' Pavement, 3' C&G, 6' Sidewalk = 20'	On	Yes	370	L.F.	$91	$34,000	0.00%		$0	$20,280,615
	R3.3.2	Detention Basin Frontage Imps-Florin Road- (CCTC RR to Waterman)	11' Pavement, 3' C&G, 6' Sidewalk = 20'	On	Yes	865	L.F.	$91	$79,000	0.00%		$0	$20,359,615
TR-25	R23	Jackson Rd. at Excelsior	6 X 4 Intersection Widening, no. & so. bound only (incl. 450' intx. leg imps)	Off	No	1	l.s.	$353,000	$353,000	100 00%	Unidentified	$0	$20,359,615
TR-23	R4.6	Gerber Road- Vineyard (Project Boundary) to Excelsior	Widen shoulders to provide minimum pavement width	Off	Yes	4,850	l.f.	$100	$485,000	0.00%	50% Reimb. from Vineyard Springs	$242,500	$20,602,115
	R4.15	Gerber Road- Gerber Creek Crossing No. 1	Bridge/Culvert improvements	Off	No	1	l.s	$461,000	$461,000	0.00%	50% Reimb.Vineyard Springs	$230,500	$20,832,615
TR-7, TR-22	R11.3	Excelsior Road- Gerber to Florin	Widen shoulders to provide minimum pavement width	Off	Yes	4,850	l.f.	$100	$485,000	0 00%		$0	$21,317,615
TR-8	R3.6	Florin Road- Vineyard (project Boundary) to Excelsior	Widen shoulders to provide minimum pavement width	Off	Yes	4,400	l.f.	$100	$440,000	0.00%		$0	$21,757,615
	R3.13	Florin Road- Tributary No. 1 to Gerber Creek Crossing	Bridge/Culvert improvements	Off	No	1	l.s.	$86,000	$86,000	0.00%		$0	$21,843,615
TR-10	R9.1	Vineyard Road- Calvine to Gerber (Project Boundary)	Widen shoulders to provide minimum pavement width	Off	No	9,700	l.f.	$100	$970,000	0.00%	100% Reimb. from Vineyard Spngs/ EGWV	$970,000	$21,843,615
TR-6, TR-21	R2.3	Elder Creek Road- Bradshaw to Excelsior	Widen shoulders to provide minimum pavement width	Off	No	10,150	l.f.	$100	$1,015,000	0.00%		$0	$22,858,615
TR-7, TR-22	R11.4	Excelsior Road- Florin to Elder Creek	Widen shoulders to provide minimum pavement width	Off	Yes	4,850	l f.	$100	$485,000	0 00%		$0	$23,343,615
	R11.15	Excelsior Road- Tributary to Elder Creek Crossing	Bridge/Culvert improvements	Off	No	1	l.s.	$86,000	$86,000	0.00%		$0	$23,429,615
TR-11	R5.5	Calvine Road- Vineyard to Excelsior	Widen shoulders to provide minimum pavement width	Off	No	4,400	l.f.	$100	$440,000	0 00%	100% Reimb. from Vineyard Spngs/ EGWV	$440,000	$23,429,615
TR-7, TR-22	R11.5	Excelsior Road- Elder Creek to Jackson	Widen shoulders to provide minimum pavement width	Off	Yes	2,450	l.f.	$100	$245,000	0.00%		$0	$23,674,615
TR-7, TR-22	R11.2	Excelsior Road- Calvine to Gerber	Widen shoulders to provide minimum pavement width	Off	No	10,150	l.f	$100	$1,015,000	0.00%	100% Reimb. from Vineyard Spngs/ EGWV	$1,015,000	$23,674,615
TR-6, TR-21	R2.2	Elder Creek Road- South Watt to Bradshaw	Widen shoulders to provide minimum pavement width	Off	No	9,700	l.f.	$100	$970,000	0.00%		$0	$24,644,615
TR-11	R5.3	Calvine Road- 1300' East of Waterman to Bradshaw	Widen shoulders to provide minimum pavement width	Off	No	3,100	l f.	$100	$310,000	0 00%	100% Reimb. from Vineyard Spngs/ EGWV	$310,000	$24,644,615
TR-11	R5.4	Calvine Road- Bradshaw to Vineyard	Widen shoulders to provide minimum pavement width	Off	No	4,400	l.f	$100	$440,000	0.00%	100% Reimb. from Vineyard Spngs/ EGWV	$440,000	$24,644,615
	R44A	Florin Rd. at Sunrise Blvd.	Interim Intersection Improvements, 3-way(inc. 450' intx. leg imp.s)	Off	No	1	l.s.	$307,000	$307,000	75.00%	Sac. Aggregates/Sunrise/Douglas C P/S	$0	$24,721,615
	R44B	Florin Rd. at Sunrise Blvd.	Ultimate Intersection Improvements, 3-way(incl. 450' intx. Leg imp.s)	Off	No	1	l.s.	$668,000	$668,000	66 70%	Sunrise/Douglas Com Plan/Spec. Plan	$0	$24,943,615
	R12	Offsite Arterial Frontage Improvements	Class "A" Frontage Improvements	Off	No	1	Lump Sum	$624,000	$624,000	0.00%		$0	$25,345,615
	R101	Right of Way Acquisition for Onsite Arterials	ROW land acquisition	On	Yes	1	Lump Sum	$1,558,000	$1,558,000	0 00%		$0	$26,903,615
	R100	Right of Way Acquisition for Offsite Arterial	ROW land acquisition	Off	Yes	1	Lump Sum	$1,101,000	$1,101,000	0 00%		$0	$28,004,615
	Preparation of P.F.F.P. and Technical Studies				No	1	Lump Sum	$0	$0	0 00%		$0	$28,004,615
		Grand Total Roadway							$55,911,000			$6,782,915	$28,005,000

Note Roadway segment lengths exclude 450' intersection leg widening included in CIP Regional identified intersections. (except where intersection projects have not made the cut off (above the thick line)

5.7h

NORTH VINEYARD STATION SPECIFIC PLAN
PRELIMINARY CAPITAL IMPROVEMENT ITEMS LISTING
Internal Roadway Improvements Listing & Cost Estimate

Project Number	Item	Project Description	On-site or Off-site	Detail Sheet Linked?	Quantity	Unit	Unit Price	Total Estimated Cost
Internal Collector Frontage Improvements at Parks, Open Space, Drainage Parkway & Facilities								
IR1	Park 1/2 Street Ftg. Imps -Onsite Collector Roads-86' R/W	Complete Half Section - 21' Pavement, 3' C&G, 6' Sidewalk = 30'	On	Yes	6,780	L.F.	$110	$745,800
IR2	Park 1/2 Street Ftg. Imps.-Onsite Collector Roads-60' R/W	Complete Half Section - 18' Pavement, 3' C&G, 6' Sidewalk = 27'	On	Yes	2,100	L.F.	$103	$216,300
IR3	Drain Parkway/Det. Basin 1/2 Street Ftg Imps.-Onsite Collector Roads-86' R/W	Complete Half Section - 21' Pavement, 3' C&G, 6' Sidewalk = 30'	On	Yes	4,000	L.F.	$110	$440,000
IR4	Drain Parkway/Det. Basin 1/2 Street Ftg Imps -Onsite Collector Roads-60' R/W	Complete Half Section - 18' Pavement, 3' C&G, 6' Sidewalk = 27'	On	Yes	865	L.F.	$103	$89,100
IR5	Open Space Parkway 1/2 Street Ftg. Imps.-Onsite Collector Roads-86' R/W	Complete Half Section - 21' Pavement, 3' C&G, 6' Sidewalk = 30'	On	Yes	550	L.F.	$110	$60,500
IR6	Right of Way Acquisition for Collector Frontage Improvements		On	No	0	Acres	$70,000	$0
	Total for Internal Collector Frontage Improvements				14,295	L.F.		$1,552,000
Total Internal Roadway Facilities								$1,552,000

Table PF-1.3 (rev)
CIP Roadway (Internal) Summary
NVSSP EIR(93-0238)

NORTH VINEYARD STATION SPECIFIC PLAN
CIP
SEWER SUMMARY

Project Number	Project Name	On-site or Off-site	Project Description	Detail Sheet Linked	Total
NORTH VINEYARD STATION SPECIFIC PLAN					
PRELIMINARY SEWER CAPITAL IMPROVEMENT ITEMS LISTING					
SANITARY SEWER IMPROVEMENTS					
Trunk Systems Carrying 1 MGD or Greater					
2.1	TRUNK SANITARY SEWER - FLORIN ROAD, SHED C				
2 1a	TRUNK SS - FLORIN ROAD (INTERCEPTOR TO WATERMAN)	On	36"/27" TRUNK SAN SEWER CONST.	Yes	$256,000
2 1b	TRUNK SS - FLORIN ROAD (WATERMAN TO BRADSHAW)	On	27" TRUNK SAN SEWER CONST.	Yes	$750,000
2 1c	TRUNK SS - FLORIN ROAD (BRADSHAW TO VINYARD)	On	24"/18" TRUNK SAN. SEWER CONST.	Yes	$820,000
2.2	TRUNK SANITARY SEWER - GERBER ROAD, SHED A				
2 2a	TRUNK SS - GERBER ROAD (INTERCEPTOR TO WATERMAN)	On	42"/39" TRUNK SAN. SEWER CONST.	Yes	$905,000
2.2b	TRUNK SS - GERBER ROAD (WATERMAN TO BRADSHAW)	On	39"/33" TRUNK SAN SEWER CONST..	Yes	$1,482,000
2.2c	TRUNK SS - GERBER ROAD (BRADSHAW TO VINYARD)	On	24" TO 15" TRUNK SAN SEWER CONST.	Yes	$974,000
Sub total Trunk Systems Carrying 1 MGD or Greater					$5,187,000
Lateral Sewer Systems Carrying Less Than 1 MGD					
2 3	LATERAL SS - PASSILIS LANE (AT INTERCEPTOR)	On	LATERAL SAN. SEWER CONST. (INTERCEPTOR CONNECT.)	Yes	$25,000
Subtotal Lateral Systems Carrying Less Than 1 MGD					$25,000
Total Sanitary Sewer Costs					$5,212,000

Table PF-2.1 SEWER (rev)
CIP Sewer, Water, Drainage Summary
NVSSP EIR(93-0238)

NORTH VINEYARD STATION SPECIFIC PLAN
CIP
WATER SUMMARY

NORTH VINEYARD STATION SPECIFIC PLAN					
PRELIMINARY WATER CAPITAL IMPROVEMENT ITEMS LISTING					
Project Number	Project Name	On-site or Off-site	Project Description	Detail Sheet Linked	Total
WATER SYSTEM IMPROVEMENTS					
4.1	OFF-SITE ZONE 40 FACILITIES	Off	T-MAIN FAC. (POWER INN RD. TO W. BNDRY)	Yes	$6,985,000
4 2	ZONE 40 FACILITIES (WITHIN P.O.U.)	On or Off	STORAGE, PUMPING, INTERIM WELLS & TREATMENT	Yes	$7,771,000
4 3	ON-SITE ZONE 40 FACILITIES (SPECIFIC PLAN AREA)	On	T-MAIN FACILITIES	Yes	$5,077,000
4 4	ZONE 40 FACILITIES (OUTSIDE P O U)	On or Off	WELLS, TREATMENT, STORAGE & PUMPING	Yes	$8,406,000
4 5	ON-SITE FACILITIES (SPECIFIC PLAN AREA)	On	DISTR. FAC. REQ'D TO COMPLETE TRANSMISSION GRID	Yes	$945,000
Total Water Costs					$29,184,000

5.7k

Table PF-2.2 WATER (rev)
CIP Sewer, Water, Drainage Summary
NVSSP EIR(93-0238)

NORTH VINEYARD STATION SPECIFIC PLAN
CIP
DRAINAGE
SUMMARY

NORTH VINEYARD STATION SPECIFIC PLAN
DRAINAGE CAPITAL IMPROVEMENT ITEMS SUMMARY

Project Number	Project Name	On-site or Off-site	Project Description	Detail Sheet Linked	Total
DRAINAGE IMPROVEMENTS					
	(See also Roadway Section for Additional Bridges/Culverts)				
	Channel Related Items				
3.1	**Elder Creek Reach 3 (Improved Channel to W. Bndry)**				
3.1.1 A	ELDER CREEK REACH 3A - OFF-SITE CHANNEL IMPS	Off	OFF-SITE CHANNEL CONSTR. (APPROX. 1,830 L.F.)	Yes	$947,000
3.1.1 B	ELDER CREEK REACH 3B - OFF-SITE CHANNEL IMPS.	Off	OFF-SITE CHANNEL CONSTR. (APPROX. 3,020 L.F.)	Yes	$1,572,000
3.2	**Elder Creek Reach 1A (W. Bndry to Florin Rd.)**				
3.2.1 A	ELDER CREEK REACH 1A (a) - CHANNEL IMPROV'S.	On	CHANNEL CONSTR. (APPROX. 2,850 L.F.)	Yes	$1,183,000
3.2.1 B	ELDER CREEK REACH 1A (b) - CHANNEL IMPROV'S	On	CHANNEL CONSTR. (APPROX. 2,910 L.F.)	Yes	$1,300,000
3.2.2	ELDER CREEK REACH 1A - DRAINAGE PARKWAY	On	CHANNEL PARKWAY CONSTR. (APPROX. 5,560 L.F.)	Yes	$132,000
3.2.3	ELDER CREEK REACH 1A (a) - McCOY LANE CROSSING	On	(3) 8'x6' BOX CULVERT CONSTR. w/ HEADWALLS (+/- 40' R/W)	Yes	$152,000
3.2.4	ELDER CREEK REACH 1A (b) - CCTC RR BRIDGE CROSSING	On	CONST. NEW BRIDGE @ ELDER CREEK & CCT RxR CROSSING	Yes	$367,000
3.3	**Elder Creek Reach 1B (Upstream of Florin Rd.)**				
3.3.1	ELDER CREEK REACH 1B - OFF-SITE CHANNEL IMPROV'S.	Off	CHANNEL CONSTR. (APPOX. 1,400 L.F.)	Yes	$758,000
3.4	Left Blank For Additions	—	—	—	—
3.5	**Gerber Creek Reach 2A (W. Bndry to Gerber Rd. Crossing No. 4)**				
3.5.1 A	GERBER CREEK REACH 2A (a) - CHANNEL IMPROV'S.	On	CHANNEL CONSTR.(APPROX. 3,350 L.F.)	Yes	$1,599,000
3.5.1 B	GERBER CREEK REACH 2A (b) - CHANNEL IMPROV'S.	On	CHANNEL CONSTR (APPROX. 3,750 L.F.)	Yes	$1,869,000
3.5.2	GERBER CREEK REACH 2A - DRAINAGE PARKWAY	On	CHANNEL PARKWAY CORR CONSTR. (APPROX. 7,100 L.F.)	Yes	$168,000
3.5.3	GERBER CREEK REACH 2A (a) -PASSALIS LN. CROSSING (WEST)	On	(3) 8'x6' BOX CULVERT CONST. w/ HEADWALLS (56' R/W)	Yes	$167,000
3.5.4	GERBER CREEK REACH 2A (b) -PASSALIS LN CROSSING (EAST)	On	(3) 8'x6' BOX CULVERT CONSTR. w/ HEADWALLS (56' R/W)	Yes	$167,000
3.5.5	GERBER CREEK REACH 2A (b) - CCTC RR BRIDGE CROSSING	On	CONST NEW BRIDGE @ ELDER CREEK AND CCTC RxR	Yes	$294,000
3.6	**Gerber Creek Reach 2B (Gerber Rd.Crossing 4 to Crossing 3)**				
3.6.1	GERBER CREEK REACH 2B - OFF-SITE CHANNEL IMPS	Off	CHANNEL CONSTR. (APPROX. 2,030 L.F.)	Yes	$984,000
3.7	**Gerber Creek Reach 2C (Gerber Rd.Crossing 3 to Crossing 2)**				
3.7.1	GERBER CREEK REACH 2C CHANNEL IMPROVEMENTS	On	CHANNEL CONSTR. (APPROX. 3,680 L.F.)	Yes	$1,331,000
3.7.2	GERBER CREEK REACH 2C - DRAINAGE PARKWAY	On	DRAINAGE PARKWAY CORR CONST. (APPROX. 3,680 L.F.)	Yes	$87,000
3.8	**Arterial Roadway Drainage Crossings** (also identified in Roadway CIP)	Off	Portion of Arterial Roadway Drainage Crossings (Roadway Proj. No. 4.14)	No	$41,000
	Subtotal Channel Related Items				$12,818,000

Table PF-2.3 DRAINAGE (rev)

CIP Sewer, Water, Drainage Summary

NVSSP EIR(93-0238)

NORTH VINEYARD STATION SPECIFIC PLAN
CIP
DRAINAGE
SUMMARY

NORTH VINEYARD STATION SPECIFIC PLAN
DRAINAGE CAPITAL IMPROVEMENT ITEMS SUMMARY

Project Number	Project Name	On-site or Off-site	Project Description	Detail Sheet Linked	Total
Detention Basin Construction					
3 9	DETENTION BASIN E24B (ELDER CREEK REACH 1A (a))	On	3.7 AC. WATER QUALITY DETENTION BASIN CONST.	Yes	$545,000
3.10	DETENTION BASIN E26 (ELDER CREEK REACH 1A (b))	On	18.3 AC. FLOOD CONTROL/W Q. DET BASIN CONST.	Yes	$2,790,000
3.11	DETENTION BASIN E24A (GERBER CREEK REACH 2A (a))	On	12 AC FLOOD CONTROL/W Q. DET. BASIN CONST.	Yes	$1,918,000
3 12	DETENTION BASIN G41 (GERBER CREEK REACH 2A (b))	On	10.6 AC. FLOOD CONTROL/W Q. DET. BASIN CONST	Yes	$1,705,000
3 13	DETENTION BASIN G46 (GERBER CREEK REACH 2C)	On	18 AC. FLOOD CONTROL/W Q. DET. BASIN CONST.	Yes	$2,627,000
3 14	OFFSITE DETENTION BASIN E20 (ELDER CREEK REACH 3)	Off	16 AC. OFFSITE FLOOD CONTROL BASIN CONST	Yes	$2,456,000
Subtotal Detention Basin Construction					$12,041,000
Trunk Drainage Serving 30 Acres or More					
3 15	TRUNK DRAINGE, SHED L	On	TRUNK DRAIN FAC. (DISCHARGE TO BASIN E24B)	Yes	$55,000
3 16	TRUNK DRAINGE, SHED H	On	TRUNK DRAIN FAC. (DISCHARGE TO ELDER CREEK, REACH2B)	Yes	$93,000
3 17	TRUNK DRAINGE, SHEDS D & E	On	TRUNK DRAIN FAC. (DISCHARGE TO BASIN E26)	Yes	$739,000
3 18	TRUNK DRAINGE, SHED G	On	TRUNK DRAIN FAC. (DISCHARGE TO BASIN E26)	Yes	$135,000
3 19	TRUNK DRAINGE, SHED K	On	TRUNK DRAIN FAC. (DISCHARGE TO GERBER CREEK, REACH 2A)	Yes	$53,000
3 20	TRUNK DRAINGE, SHED J	On	TRUNK DRAIN FAC. (DISCHARGE TO GERBER CREEK, REACH 2A)	Yes	$44,000
3 21	TRUNK DRAINGE, SHED F	On	TRUNK DRAIN FAC. (DISCHARGE TO GERBER CREEK, REACH 2A)	Yes	$497,000
3.22	TRUNK DRAINGE, SHED C	On	TRUNK DRAIN FAC. (DISCHARGE TO BASIN G46)	Yes	$508,000
3 23	TRUNK DRAINGE, SHEDS A & B	On	TRUNK DRAIN FAC. (DISCHARGE TO BASIN G46)	Yes	$935,000
Subtotal Trunk Drainage Construction					$3,059,000
Wetland Mitigation					
3 100	WETLAND MITIGATION - ONSITE	On	Onsite Wetland Mitigation for Drainage Improvements	Yes	$2,735,000
3.101	WETLAND MITIGATION - OFFSITE	Off	Offsite Wetland Mitigation for Drainage Improvements	Yes	$2,431,000
Subtotal Wetland Mitigation					$5,166,000
Total Drainage Costs					$33,182,000

5.7m

Table PF-2.4 DRAINAGE (rev)
CIP Sewer, Water, Drainage Summary
NVSSP EIR(93-0238)

COMMENTS AND RESPONSES

The text that follows will introduce each Draft EIR reviewer and present their comments in either as stated or paraphrased form. Responses to those comments immediately follow. Written comments received in full letter format can be found in Attachment 1.

Draft EIR comments were received from the following individuals and/or agencies:

- **Public Agencies**

    1. Lou A. Norton, Land Agent, Pacific Gas & Electric, 343 Sacramento Street Auburn, CA (August 6, 1997)

    2. Claudia Gunter, Southgate Recreation & Park District, 6000 Orange Avenue, Sacramento CA (August 20, 1997)

    3. Phil Stafford, Sacramento Metropolitan Air Quality Management District, 8475 Jackson Rd., Suite 200, Sacramento CA (August 28, 1997).

    4. Jeffrey Pulverman, Chief, Office of Transportation, Planning-Metropolitan, CATRANS District 3, Sacramento Area Office MS 41, P.O. Box 94274, Sacramento CA (September 3, 1997).

    5. Terri Wegener, Water Resources Division, County Public Works Agency (September 5, 1997).

    6. Warren H. Harada, Agency Administrator, Sacramento County Public Works Agency (September 5, 1997).

    7. Tom Garcia, Water Resources Division: Storm Water Quality, County Public Works Agency (August 28, 1997)

    8. James J. Paluck, Water Resources Division (August 29, 1997).

    9. Stephen Kenning, Water Resources Division (August 29, 1997).

    10. Bob Lilly, Water Quality Division (September 4, 1997).

11. Robert Davison, Public Infrastructure and Financing Section, County Public Works Agency (September 8 & 17, 1997).

12. Antero A. Rivasplata, Chief, State Clearinghouse, Governor's Office of Planning and Research, 1400 Tenth Street, Sacramento CA (September 15, 1997).

- **Organizations & Neighbors**

13. David Edminson, 7651 Bar Du Lane, Sacramento California (August 21, 1997)

14. Clifford & Sue Daniel, 7622 Bar Du Lane, Sacramento CA (September 3, 1997)

15. Gail Peters, 7641 Bar Du Lane, Sacramento CA (September 4, 1997).

16. Alta Tura, Co-President, Urban Creeks Council, 4855 Hamilton Street, Sacramento, California (September 5, 1997).

17. Judith Wilson & Roy Pace, 9091 McCoy Avenue, Sacramento California (October 15, 1997).

18. Cathy Phillips, 9040 McCoy Road, Sacramento California (November 18, 1997).

19. Mr. & Mrs. Jim Jordan, 7471 Jordan Lane, Sacramento, California (December 4, 1997; November 25, 1997).

20. James B. Wiley, Taylor & Hooper Attorneys, 1435 River Park Drive, Suite 300, Sacramento CA (September 5, 1997).

- **Project Proponents**

21. George Phillips, Law Offices, 555 University Ave. Suite 200, Sacramento, CA (September 5, 1997)

LETTER 1.

Lou A. Norton, Land Agent, Pacific Gas & Electric, 343 Sacramento Street Auburn, CA, (August 6, 1997).

Comment 1.1:

PG&E's comments from the NOP have been included in the report on pages 4.12 and 6.2. As long as those comments are included in the final report, PG&E has nothing further to add and has no objection to the filing of the final report.

Response 1.1:

Comment noted.

LETTER 2.

Claudia Gunter, Southgate Recreation & Park District, 6000 Orange Avenue, Sacramento CA (August 20, 1997).

Comment 2.1: *(paraphrased)*

Enclosed please find Southgate Recreation and Park District Resolution #97-11 which was approved by our board of Directors at their meeting of August 19, 1997. This Resolution provides comments regarding the DEIR.

Response 2.1:

Comment noted.

Comment 2.2: *(paraphrased)*

LU-4 Mitigation Measures. In the Land Use Section of the "Executive Summary and Mitigation Measures" of the Draft EIR, Measure LU-4 does not accurately reflect the Southgate Board of Director's Position regarding the "Preferred" Land Use Plan. LU-4 should be revised to read:

> *The final General Plan Diagram will be modified in respect to some park locations, with the Southgate Park District determining exact park locations. The Community Park site will not be located under power lines and will be modified to create neighborhood park sites in areas of the plan which are deficient in park land. Southgate does not support the Preferred Land Use Plan, but supports the Alternate Land Use Plan dated November 1, 1996, which was developed in cooperation with County Planning and the North Vineyard land owners group.*

Response 2.2:

Based on the above comment Mitigation Measure LU-4 in the FEIR Executive Summary has been revised as follows:

> LU-4 **The General Plan Diagram will be modified in respect to some park locations, with the Southgate Park District determining exact park locations. The Community Park site shall not be located under power lines and shall be modified to create neighborhood park sites in areas of the plan which are deficient in park land in substantial compliance with**

the Alternate Land Use Plan dated November 1, 1996, which was developed in cooperation with County Planning and the North Vineyard land owners group.

Comment 2.3:

Joint Uses. The Southgate Recreation and Park District supports coordination with other agencies to accomplish join uses for park sites. This includes but is not limited to joint uses with schools, libraries, fire stations, detention basins, and drainage parkways.

Response 2.3:

Comment noted.

Comment 2.4:

Landscape Corridors Along Major Roadways. The Southgate Recreation and Park District supports the dedication and improvement of landscape corridors with pathways along major roadways to provide not only improved aesthetics between roadways and neighborhoods, but to also [to] provide off-street transportation corridors for pedestrians and bicyclists. The District supports the dedication of 30-foot wide landscape corridors with 10-foot bike lanes along Vineyard, Gerber, Florin, Waterman, and Bradshaw Roads. These will be constructed concurrently with development in the plan area, and then dedicated to the District for ongoing maintenance.

Response 2.4:

Comment noted.

Comment 2.5:

Drainage Parkways/Detention Basins. It is important to allow for bicycle and pedestrian trail systems within the drainage parkway areas as defined on the plan. These systems become amenities to the community by providing recreational opportunities and creating logical off-street circulation through the plan area. Additionally, detention basins offer opportunities for passive park uses. After improvement, these should be dedicated to the District for ongoing maintenance.

LETTER 3.

Phil Stafford, Sacramento Metropolitan Air Quality Management District, 8475 Jackson Road., Suite 200, Sacramento CA (August 28, 1997).

Comment 3.1:

The District is supportive of the construction and regional mitigation measures indicated in the Draft EIR, and recommends that they be included as conditions of approval for this project.

Response 3.1:

Comment noted.

Comment 3.2:

With regard to Construction Impact Mitigation Measures, we also recommend the use of reduced emission engines in heavy-duty on-road and off-road equipment.

Response 3.2:

Comment noted.

Comment 3.3:

Project proponents are advised that District Rule 403-FUGITIVE DUST will apply to this project during construction. The project proponents should contact the District at (916) 386-6650 for information regarding this Rule.

Response 3.3:

Comment noted.

LETTER 4.

Jeffrey Pulverman, Chief, Office of Transportation, Planning-Metropolitan, CALTRANS District 3, Sacramento Area Office MS 41, P.O. Box 94274, Sacramento CA (September 3, 1997).

Comment 4.1:

The Traffic Study only includes the segment of State Route 16 from South Watt Avenue to Excelsior Road. Traffic generated by the North Vineyard development could significantly impact other segments of State Route 16 (SR-16), especially the segment west of South Watt Avenue to the Howe Avenue Interchange. Furthermore, the cumulative impacts of this project and other proposed projects, along or in the vicinity of SR-16 rely on future highway improvements to SR-16, yet these improvements are not included in the Sacramento Area Council of Governments Metropolitan Transportation Plan.

Response 4.1 (by Transportation Division):

In response to this and other transportation comments County Transportation Division staff (J. Clark) has provided responses to this comment and comments 4.2 through 4.7 that follow.

The DEIR identified the only segment of State Route 16 where the projects share of future (year 2015) traffic exceeds 5 percent. Assuming the completion of the County of Sacramento Transportation Plan, none of the segments of State Route 16 will exceed County of Sacramento level of service criteria (worse than LOS E). For that reason there is no significant impact from the proposed project. The funding of improvements to State Route 16 will come from a variety of sources including developer fees (City and County), STIP funds and improvements as part of frontage improvements. Improvements to State Route 16 would have to be programmed into the Sacramento Area Council of Governments Metropolitan Transportation Plan.

Comment 4.2:

This project and other similar projects in the vicinity will also impact Highway 50 and State Route 99. Traffic from this project will impact the Bradshaw/50 interchange and the Florin Road/SR-99 interchange.

Response 4.2 (by Transportation Division):

The project will add to the traffic levels on all of the major transportation facilities in the Sacramento region including State Route 99 and U.S. Highway 50. However, the distance that these facilities are from the project area (approximately 4 miles) and the ability of the transportation model to accurately forecast project traffic at that distance limits the ability to determine the project impact to these facilities. The project will be required to pay county wide development fees that can and are used to cover impacts to growth on major transportation facilities.

Comment 4.3:

The traffic report needs to address these potentially significant impacts and describe appropriate mitigation measures. The County needs to aggressively support capacity and intersection improvements along the SR-16 corridor, Highway 50 corridor and SR-99 before the LOS of each of these roads and impacted interchanges deteriorates to an unacceptable level.

Response 4.3 (by Transportation Division):

Comment noted. The County is aggressively supporting capacity in both the U.S. Highway 50 and State Route 99 corridors via HOV lane projects and interchange improvement projects. Improvements to State Route 16, from Excelsior Road to Watt Avenue, have been identified and are included in the County Roadway and Transit Fee C.I.P. and the Mather Field Specific Plan Financing Plan.

Comment 4.4:

CP-5 South Watt Avenue/Jackson Road (SR-16) (page 8.23). The discussion is inconsistent with both the AM and PM peak hours without the project. How can you add vehicles to an already congested situation and not make the congestion worse? Therefore, the project would exacerbate LOS F operations especially during the PM peak hour by increasing the v/c by over 0.12.

Response 4.4 (by Transportation Division):

Comment noted. The project would have a significant impact to the Watt Avenue/Jackson Road intersection during the p.m. peak.

Response 4.4 (by DERA):

Please note that the statement in question on page 8.23 (of the DEIR) has been revised as follows:

> CP-5: Implementation of the project would ~~result in LOS F operations in the a.m. peak hour~~ **exacerbate LOS F operations** at the **South Watt Avenue/Jackson Road** intersection~~; however it does not worsen conditioning compared to operations under cumulative no project conditions~~.

Please see Attachment 2: Errata Pages at the back of this FEIR document for a copy of revised page 8.23.

Comment 4.5:

Improvements CP-5; South Watt Avenue/Jackson Road (SR-16). Alternatives which should be considered include either phasing or reducing the scale of development so that this intersection can operate at an acceptable LOS under cumulative conditions. The feasibility of widening the roadway at the intersection (4 through lanes in each direction to increase capacity and improve the LOS should also be considered.

Response 4.5 (by Transportation Division):

Land use reductions (beyond the -10% and -15% Alternatives, except for a no project alternative) were not considered in the traffic analysis as the document is intended to determine the impacts of the proposed project on the surrounding transportation system. The use of eight through lanes on arterials is not considered as an option until the Board of Supervisors changes the General Plan to include eight-lane facilities.

Comment 4.6:

Excelsior Road/Jackson Road (SR-16). The report should discuss the feasibility and benefits of widening Excelsior Road to a four lane facility (south of SR-16) and a six lane facility north of SR-16). With approximately 1350 cumulative AM peak hour trips (south of SR-16) expected, widening the roadway would improve traffic operations.

Another alternative which should be considered is adopting a land-use alternative consistent with the current road capacity under cumulative conditions.

Response 4.6 (by Transportation Division):

The feasibility of widening excelsior Road to a four-lane arterial was evaluated in the 1993 County of Sacramento Transportation Plan. The long-term plan is to widen the facility to four-lanes as properties fronting along Excelsior Road develop.

Comment 4.7:

Plate TR-L. The plate shows approximately 4100 peak hour AM trips northbound on South Watt Avenue just north of the Elder Creek Road/Elk Grove-Florin Road intersection. Yet only approximately 2300 peak hour trips are projected south of the Jackson Road (SR-16)/South Watt Avenue intersection. Please explain what happens to the approximately 1800 peak hour trips. Please review the intersection LOS calculations and update as needed.

Response 4.7 (by Transportation Consultant, Fehr & Peers):

Transportation consultant staff (Rashid) provided DERA with the following response:

Fruitridge road intersects South Watt Avenue between Elder Creek Road and Jackson Road (SR 16). In addition, the areas to the west of South Watt Avenue along this section are projected to include substantial levels of employment under cumulative conditions. A review of the traffic model that was used to develop the cumulative plus project forecasts shows that the 1,800 trips are destined for Fruitridge Road and the future employment growth areas. Thus, these trips are accounted for on the cumulative roadway network and not changes to intersection LOS calculations are required.

LETTER 5.

Terri Wegener, Water Resources Division, County Public Works Agency (September 5, 1997).

Comment 5.1: *(paraphrased)*

Mitigation Measure HY-3 (page 11.45) Revise the final sentence by inserting the following underlined wording : "Such analysis shall verify that the phased improvements will result in no substantial increase in peak 100-year flows on Elder Creek at the City/County boundary, and no significant increased 100-year out-of-bank flows in the existing improved channel downstream of the Specific Plan area. Any phasing must also provide the necessary system reliability and be approved by the Water Resources Division.

Response 5.1:

Mitigation Measure HY-3 has been revised as follows:

HY-3. Future development within the NVSSP area shall implement the proposed NVSSP Drainage Master Plan (DMP) improvements, including construction of Detention Basin E20 downstream of the Specific Plan area, and construction of a mitigating solution for the existing Gerber Creek overflow condition upstream of the Specific Plan area, as described in the Drainage Study for the North Vineyard Station Specific Plan (MacKay and Somps Engineers, February 1997) (see Plate HY-E of the DEIR). Detailed plans for the design and construction of all proposed drainage and water quality facilities, consistent with the NVSSP DMP, shall be submitted to the County Water Resources Division (WRD) for review and approval.

Construction of the NVSSP DMP improvements may be phased, subject to the approval of the County WRD, so long as the project proponent(s) provide hydrologic/hydraulic analyses which demonstrate that the phased improvements will provide adequate urban flood protection to the proposed on-site development, and will not increase flood risks in downstream areas. Such analyses shall verify that the phased improvements will result in no **substantial** increase in peak 100-year flows on Elder Creek at the City/County boundary, and no significant increased 100-year out-of-bank flows in the existing improved channel downstream of the Specific Plan area. **Any phasing must also provide the necessary system reliability and be approved by the Water Resources Division.**

Comment 5.2:

Mitigation Measure HY-6 (page 11.45) The items required in conditions HY-6 shall be approved by the Water Resources Division.

Response 5.2:

Mitigation Measure HY-6 has been revised as follows:

HY-6. Implementation of the proposed NVSSP Drainage Master Plan (DMP) improvements, including construction of Detention Basin E20 and construction of a mitigating solution for the existing Gerber Creek overflow condition upstream of the Specific Plan area, shall not occur until the following items have been submitted to the **Water Resources Division and the** Sacramento County Board of Supervisors for review and approval.

(a) A wetland delineation for the improvement area verified by the U.S. Army Corps of Engineers.

(b) A detailed mitigation plan for wetlands to be impacted by the proposed improvements which specifically describes the measures which will be implemented to achieve no net loss in wetland habitat acreage and values.

(c) Determinate surveys for the improvement area for potentially occurring special status species.

Comment 5.3:

Mitigation Measure BR-3 (page 11.37) The Wetland Mitigation plan for Elder and Gerber Creeks shall be submitted to the Water Resources Division for approval.

Response 5.3:

Mitigation Measure BR-3 has been revised as follows:

BR-3. A Wetland Mitigation Plan for Elder and Gerber Creeks shall be prepared and incorporated into the Specific Plan. This plan shall address phasing of channel modifications, establishment of wetlands (i.e., passive, active, combination),

species composition, maintenance and monitoring. The plan shall require channel bottom and bank materials to be substantially the same as comparable natural streams. Natural arrays of riffles, runs and pools shall be incorporated into the design of the creek channels. The required Plan shall be submitted to the Sacramento County Department of Environmental Review and Assessment, **County Water Resources Division,** U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service and California Department of Fish and Game for approval prior to its implementation.

Comment 5.4:

Mitigation Measure BR-6 (page 11.39) The Drainage Parkway Plan for Elder and Gerber Creeks shall be submitted to the Water Resources Division for approval.

Response 5.4:

Mitigation Measure BR-6 has been revised as follows:

BR-6. In conjunction within the required Wetland Mitigation Plan for the creeks, a Drainage Parkway Plan for Elder and Gerber Creeks shall be prepared. This plan shall provide the following information:

a. A map that depicts the configuration of the creek corridors, including overall width, low-flow channel width, bank slopes, and buffer widths;

b. The location of all trails, bikeways, maintenance roads and channel access points, street crossings, water quality basins and other structures within the corridors;

c. Designations of all lands uses, including recreation (passive or active), mitigation, natural area, water quality, storm water detention, etc.;

d. Policies addressing public access into the corridors, including limitations on use;

e. A policy statement requiring the use native plants within the corridor, including a planting palette of acceptable species;

f. Maintenance and monitoring requirements for the creek channels and mitigation areas;

g. An appropriate funding mechanism to establish, operate and maintain

the creek corridors, and;

h. All requirements of State and Federal regulatory agencies pertaining to the preservation and management of special status species.

If the proposed project is approved, the corridor width shall be in substantial compliance with that proposed in the Specific Plan (150 to 240 feet). Adoption of the Alternative Drainage Corridor Policies would increase the corridor width to 600 feet. Widths of this alternative may be reduced based on unavoidable physical constraints, however, the minimum width shall be 150 feet on each side of the drainage channel bottom. These alternatives are not intended to preclude other alternatives for the drainage parkway corridors. Such changes may involve combinations of different channel widths, corridor configurations and policies. The Drainage Parkway Plan shall be submitted to the **County Water Resources Division and the** Sacramento County Board of Supervisors for approval, prior to approval of development of the Specific Plan area.

LETTER 7.

Tom Garcia, Water Resources Division: Storm Water Quality, County Public Works Agency (August 28, 1997).

Comment 7.1:

The Storm Water Quality Section has reviewed the above referenced submittal, and has determined that the language in the document is sufficient. There are no additional comments from this section.

Response 7.1:

Comment noted.

LETTER 8.

James J. Paluck, Water Resources Division (August 29, 1997).

Comment 8.1:

FEMA With construction of the proposed drainage improvements, the revised 100-year floodplain must be approved by the Federal Emergency Management Agency (FEMA) prior to issuance of any building permits. Since the construction of these drainage improvements is expected to occur as part of development projects, it will be required at that time to "petition FEMA for conditional letter of map revision pursuant to the Sacramento County Improvement Standards, prior to improvement plan approval." This condition of approval, among others, will be requested for each development project occurring within the Specific Plan area. Include language in the EIR regarding this subject if you fell it is required.

Response 8.1:

Comment noted.

Comment 8.2:

Financing of Drainage Facilities Nowhere in the Draft EIR is mentioned funding of drainage facilities identified within the Specific Plan area. This is a major concern for Water Resources Development Section. It has been identified that the overall "reimbursable" costs of the drainage facilities is approximately $20 million, while anticipated collection of drainage fees within the Specific Plan area is on the order of $10,000 million. With this $10 million shortfall, it must be determined how these drainage improvements will ultimately be funded, and a time line of this funding. This should be addressed in the EIR.

Response 8.2:

The Financing Strategy for the specific plan and ultimately the Financing Plan (to be approved prior to any rezones or subdivision maps) will address this issue.

LETTER 9.

Stephen Kenning, Water Resources Division (August 29, 1997).

Comment 9.1:

Page 2.28. The use of the term maximum day demand should be used when discussing facility sizing, not in describing the use of water supplies. Revise the last paragraph to read:

> *In Alternative 1, surface water would be supplied to the entire Study Area, including the North Vineyard Station Specific Plan Area. In Alternative 2, surface water would supply the Demand of the area within the City's POU, and ground water would supply the Demand of the area outside the POU.*

Response 9.1:

The subject paragraph has been revised as follows (see Errata section page 2.28):

> In Alternative 1, surface water would **be supplied to** ~~supply the Maximum Day Demand of~~ the entire Study Area, including the North Vineyard Station Specific Plan Area. In Alternative 2, surface water would supply the ~~Maximum Day~~ Demand of the area within the City's POU, and ground water would supply the ~~Maximum Day~~ Demand of the area outside the POU.

Comment 9.2:

Page 2.29. The discussion of water supply does not include facility sizing. Delete the begins "Demands in excess of the ... ".

Response 9.2:

The subject sentence has been stricken. (See Errata section page 2.29.)

> ~~Demands in excess of the Maximum Day Demand would be met from storage reservoirs in both alternatives~~.

Comment 9.3:

Page 2.30. Revise the last sentence by eliminating the redundancy of the reference to Water

Master Plan. The sentence should read:

> *However, the implementation of the NVSSP Water Master Plan is contingent on the implementation of the Areas Adjacent to the Zone 40 Water Supply Mater Plan Updates's Study Area, as well as fulfillment of the City of Sacramento American River Place of Use (POU).*

Response 9.3:

The subject sentence has been revised as follows (see Errata section page 2.30 and 2.31):

> However, the implementation of the NVSSP Water Master Plan is contingent on the implementation of the ~~Water Master Plan for~~ Areas Adjacent to the Zone 40 Water Supply Master Plan Update's Study Area, as well as fulfillment of the City of Sacramento American River Place of Use (POU).

Comment 9.4: *(paraphrased)*

Page 7.4d. Exhibit PF-D is an out dated exhibit showing CIP water facilities. Delete this exhibit in its entirety and replace or reference page 12.19a which is the latest version of this exhibit.

Response 9.4:

Exhibit PF-D has been replaced with the revised CIP Water Facilities exhibit from the January 1998 Draft CIP forwarded to DERA on January 27, 1998.

Comment 9.5: *(paraphrased)*

Page 7.4n. Incorporate the latest numbers from Table 10.5-1 of the Master Water Supply and Water Distribution System Report for North Vineyard Station Specific Plan, prepared by MacKay and Somps into table PF-2.4 of the Draft EIR for NVSSP. Modify the Project Name for Project Number 4.5 in table PF-4 to read:

> *ON-SITE FACILITIES (SPECIFIC PLAN AREA)*

Response 9.5:

Table PF-2.4 has been replaced with the revised CIP tables from the January 1998 Draft CIP

forwarded to DERA on January 27, 1998.

Comment 9.6:

Page 7.4d. Delete this exhibit in its entirety and replace with or reference to exhibit WS-B (page 12.19a).

Response 9.6:

See Response 9.4.

Comment 9.7:

Page 7.4n. Incorporate the latest numbers from Table 10.5-1 of the Master Water Supply and Water Distribution System Report for North Vineyard Station Specific Plan, prepared by MacKay and Somps into table PF-2.4 of the Draft EIR for NVSSP. Modify the Project Name for Project Number 4.5 in table PF-4 to read:

> *ON-SITE FACILITIES (SPECIFIC PLAN AREA)*

Response 9.7:

See Response 9.5.

Comment 9.8:

Page 12.8. The adjacent Area Water Master Plan being prepared by the Sacramento County Water Agency is not yet complete, therefore, the first sentence in paragraph one should be replaced with:

> *A draft of this document titled "Water Master Plan for Areas Adjacent to Zone 40 Water Master Plan Update's Study Area" (Adjacent Area Water Master Water Plan) dated September 1996 will be completed by SCWA. SCWA intends to finalize this document in 1998 (pers. Comm.)*

Response 9.8:

The first sentence in paragraph one on Page 12.8. has been replaced with:

A Final Draft of this document titled "Water Master Plan for Areas Adjacent to Zone 40 Water Supply Master Plan Update's Study Area" (Adjacent Area Water Master Plan) ~~was published in~~ **dated** September of 1996 **will be completed by SCWA. SCWA intends to finalize this document in 1998.**

Comment 9.9:

Page 12.10. For clarity, the second paragraph which starts "The determination of water..." needs the following heading:

Buildout Average Annual Demand

The fifth paragraph that starts "A list of conservation measures..." need the following sentence added to the end of the paragraph:

Demands in WS-2 are not adjusted to reflect conservation; demands in WS-3 are adjusted to reflect effects of conservation measures listed in WS-4.

Response 9.9:

The fifth paragraph of Page 12.10 has been revised as follows:

A list of conservation measures has been provided by MacKay and Somps (see Table WS-4). **Demands in WS-2 are not adjusted to reflect conservation; demands in WS-3 are adjusted to reflect effects of conservation measures listed in WS-4**

Comment 9.10:

Page 12.28. Delete the preliminary from the title of the Water Master Plan. The first sentence of the last paragraph should read:

MacKay and Somps Civil Engineers, Ind. have prepared The [~~Preliminary~~] Master Water Supply and Water Distribution System Report (May 1997) for the North Vineyard Station Specific Plan.

Response 9.10:

The first sentence of the last paragraph on page 12.28 has been revised to read:

> MacKay and Somps Civil Engineers, Inc. have prepared a **The** ~~*Preliminary*~~ *Master Water Supply and Water Distribution System Report* (May 1997) for the North Vineyard Station Specific Plan.

LETTER 10.

Bob Lilly, Water Quality Division (September 4, 1997).

Comment 10.1:

Water Quality Division staff has reviewed the subject document on behalf of Sacramento Regional County Sanitation District (SRCSD) and County Sanitation District No. 1 (CSD-1). Comments addressed to this project at the NOP are included in the draft and are adequate and appropriately discussed in the sewer section on page 13.1.

Response 10.1:

Comment noted.

Comment 10.2:

On page 2.31, the bottom paragraph reads: " There is an existing 108-inch sewer interceptor located in ... the Bradshaw Interceptor is planned for construction in 1997-1998."

This should be revised to say: "There is an existing 102-inch sever interceptor located in... the Bradshaw Interceptor is planned for construction in 1999-2000."

Response 10.2:

The subject paragraph has been revised to read as follows (see Errata section page 2.31):

> There is an existing ~~108~~ **102**-inch sewer interceptor located in Elk Grove-Florin Road, approximately ½ mile west of the Specific Plan area, but this facility is nearing capacity. However, the Bradshaw Interceptor is planned for construction in ~~1997-1998~~ **1999-2000** through the western portion of the Specific Plan area which will provide sufficient capacity to accommodate the proposed project's sewage flows.

In addition the first sentence of the third paragraph on page 13.1 has been revised (see Errata) to read:

> There is an existing ~~108~~ **102**-inch sewer interceptor located in Elk Grove-Florin Road, approximately ½ mile west of the Specific Plan area.

LETTER 11.

Robert Davison, Public Infrastructure and Financing Section, County Public Works Agency (September 8 & 17, 1997).

Comment 11.1:

Page 2.8. Second Paragraph In the Public Facilities Financing Section: Revise the first sentence to read as follows: "The project site is not included in any existing Public Facilities Financing Plan area and will therefore require a financing ***plan and associated implementation*** *to fund public facilities needed to serve new development in the Plan Area."*

Response 11.1:

The subject sentence has been revised to read as follows (see Errata section page 2.8):

> The project site is not included in any existing Public Facilities Financing Plan area and will therefore require a financing **plan and associated implementation** ~~strategy~~ to fund public facilities needed to serve new development in the Plan Area.

Comment 11.2:

Page 2.8. Third Paragraph In the Public Facilities Financing Section: Revise the first sentence to read as follows: "Because the NVSSP does not include any rezoning, a financing plan is not required to be part of the project ***at this stage****."*

Response 11.2:

The subject sentence has been revised to read as follows (see Errata section page 2.8):

> Because the NVSSP does not include any rezoning, a financing plan is not required to be part of the project **at this stage**.

Comment 11.2: *(paraphrased)*

To insure that no maps/rezones are approved prior to the approval of a Public Facilities Financing Plan for the North Vineyard Station Specific Plan area, the Public Infrastructure Planning and Financing Section is recommending the following mitigation:

> *No rezone shall be approved until a Public Facilities Financing Plan for the North*

Vineyard Station Specific Plan area has been approved by the Board of Supervisors and no final map shall be recorded until the financing mechanisms identified in the Public Facilities Financing Plan have been implemented.

Response 11.2:

The following Public Facilities Financing Mitigation Measure has been included in the Mitigation Measures section and the related Public Facilities Financing section of the FEIR:

> **No rezone shall be approved until a Public Facilities Financing Plan for the North Vineyard Station Specific Plan area has been approved by the Board of Supervisors and no final map shall be recorded until the financing mechanisms identified in the Public Facilities Financing Plan have been implemented.**

LETTER 12.

Antero A. Rivasplata, Chief, State Clearinghouse, Governor's Office of Planning and Research, 1400 Tenth Street, Sacramento CA (September 15, 1997).

Comment 12.1: (paraphrased)

The State Clearinghouse submitted the above named environmental document to selected state agencies for review. The review period is closed and none of the sate agencies have comments. This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act.

Response 12.1:

Comment noted.

LETTER 13.

David Edminson, 7651 Bar Du Lane, Sacramento California (August 21, 1997).

Comment 13.1:

The Planning and Development Department has prepared a North Vineyard Station Specific Plan, and has identified a "Preferred Plan". This Preferred Plan has features which are unacceptable to my wife and I as well as my neighbors on the north end of Bar Du Lane. It is my understanding that County policy states that future development should have minimal negative impact on current users of adjoining areas. The Preferred Plan does not meet that criteria for our neighborhood.

Response 13.1:

Comment noted. Comments contained in this letter are directed at the proposed project and not the environmental document. No response is required pursuant to CEQA.

Comment 13.2:

This area was developed approximately 30 years ago under A2 zoning. Several of us have lived on the street for nearly the entire 30 years. The area has been quiet, peaceful, semi-rural and relatively free from crime. That is exactly why each of us has chosen to live here. We believe we have the right to expect that the area remain as close as possible to that ideal.

Response 13.2:

Comment noted.

Comment 13.3:

The Preferred Plan includes a "core area" directly across Gerber Road from the north end of Bar Du Lane which provides for areas of commercial use and high density housing. Commercial activity is an exact opposite of the current usage of our neighborhood. High density housing and increased crime seem to go hand in hand in the Sacramento area. The impact of these tow incompatible activities would result in the destruction of our peaceful semi-rural way of life.

Response 13.3:

The Policy Planning Commission has recommended the Dispersed Core alternative which substantially reduces the concentration of commercial and multi-family uses in the vicinity of the Gerber/Waterman intersection. This alternative has been addressed in the EIR and is open for consideration by the Board of Supervisors.

Comment 13.4:

An alternate plan which would reposition the core area to the intersection of Bradshaw and Florin Road has also been prepared. We believe this to be a better location for the commercial and high density housing uses. It is at the intersection of two existing major streets while the Preferred Plan would create a new center of activity and a new busy intersection. Also, most of the area which would be impacted is vacant land or has current commercial usage.

Response 13.4:

The Florin/Bradshaw core relocation, also known as the "Alternative Core", has been considered in the EIR. The Board of Supervisors will decide the ultimate core location.

Comment 13.5:

We are also concerned about the increased traffic flow along Gerber Road that will result from development of the area. The plan estimates that traffic along Gerber Road that will result from development of the area. The plan estimates that traffic along Gerber will increase from 7,220 to 25,200 vehicles per day, and increase of 254%. Even now it is difficult and very dangerous to turn onto Gerber from Bar Du Lane at rush hour on a foggy winter morning. The plan would modify Gerber Road to four lanes to accommodate the increased traffic. However, unless some means of access at a signaled intersection is provided, it is certain there will be an increased number of serious, even fatal accidents at the corner of Bar Du Lane and Gerber Road.

Response 13.5:

Traffic signals will be installed as signal warrants are met at various intersections in the Plan area.

LETTER 14.

Clifford & Sue Daniel, 7622 Bar Du Lane, Sacramento CA (September 3, 1997).

Comment 14.1:(paraphrased)

Thank you for the opportunity to comment on the Draft EIR. As thirty-year property owners on Bar Du Lane, we are extremely concerned about the impact on the environment and the negative results that will drastically alter our lifestyle if this project is approved.

Response 14.1:

Comment noted.

Comment 14.2: *(paraphrased)*

The report clearly states that there will be significant and unavoidable effects that "CANNOT BE AVOIDED" if the plan is approved.

Response 14.2:

Comment noted. This is consistent with the EIR findings.

Comment 14.3:*(paraphrased)*

Although the report indicates that these significant impacts "CANNOT BE MITIGATED", if there is a decision to go ahead with the project in opposition to the County General Plan, we cannot support any of the proposed plans and alternative plans that do not move the Core Area to the corner of Bradshaw and Florin Roads. Gerber Road should be the last choice for business, commercial, or multi-family dwellings because:

1. *BRADSHAW ROAD: Proposed to be widened to SIX LANES, has DIRECT FREEWAY ACCESS TO HIGHWAY 50, will carry 48,600 cars per day, and has three vacant corners at the intersection with Florin Road. There are already NUMEROUS COMMERCIAL ENTERPRISES that face Bradshaw.*

2. *ELK GROVE-FLORIN ROAD: same as above with 53,000 cars per day.*

3. *FLORIN ROAD: same as above with 32,700 cars per day, access is to HIGHWAY 99.*

4. *GERBER ROAD: the ONLY road designated to be FOUR LANES, will carry only 25,200 cars per day, is land-locked with no direct freeway access - dead ends into Stockton Blvd. And Excelsior, has virtually no commercial enterprises along the road.*

Response 14.3:

Please see Responses 13.3 and 13.4 to Mr. David Edminson (Letter 13).

Comment 14.4: (paraphrased)

It is ILLOGICAL at best to place business, commercial and multi-family sections in the MIDDLE of the least-traveled and most narrow street that does not have any direct freeway access. Our rural way of life would be destroyed along with the habitat for much wildlife.

We strongly recommend that you do not approve the project based on the negative environmental report and the devastation that such a project would produce.

Response 14.4:

Comment noted. This comment is directed at the proposed project and does not question the adequacy of the EIR.

LETTER 15.

Gail Peters, 7641 Bar Du Lane, Sacramento CA (September 4, 1997).

Comment 15.1:

I am a resident of Bar Du Lane which is across the street from Gerber Road. Bar Du is a quiet country lane with well maintained homes. I have some concerns about the DEIR that I wish to address. The "Preferred" Plan (developer's plan) places a shopping center, business professional space, multi-family residential units and a Park and Ride directly across the street from our homes. While I am not against development in our area, I am very concerned about the impact of this "Preferred" Plan on the existing homes in my neighborhood. (Please see page 4.5b as it relates to Bar Du Lane.).

Response 15.1:

Please see Responses 13.3 and 13.4 to Mr. David Edminson (Letter 13).

Comment 15.2:

Under this section there is a discussion of a 15% Density Reduction Plan and a Modified Core Specific Plan (p. 4.3). I am in favor of a combination of these two plans. A 15% reduction plan would be the most consistent with the existing neighborhood surrounding the Plan area.

Response 15.2:

Comment noted.

Comment 15.3:

The report states (on page 4.3 that "the modified core alternative does not include any drainage parkway features or improvements adjacent to the urban core and focus area as does the Preferred Plan." I wasn't sure if this meant that drainage parkway features and improvements were not necessary with the modified plans or if it meant that the report simply did not include a diagram of these features.

Response 15.3:

The statement was simply meant to point out that the urban core location at Bradshaw and Florin Road does not offer the unique community design opportunities that exist along the proposed parkway. The drainage parkway features and improvement would still be necessary with the modified plans, there just would not be a higher density urban core adjacent to the parkway to enjoy it.

Comment 15.4:

In closing, I would like to thank you for taking the time to review my questions and concerns. I am not opposed to development. I am opposed to the "Preferred" Plan. I was designed without consideration of the existing residential communities closest to the Plan area. Bar Du is a peaceful and quiet country lane. I would like to keep it that way as much as possible. I am in favor of the 15% Reduction combined with moving the core to Florin road. I believe that this combined alternative is workable and I would like to see future studies focus more on these alternative than on the "Preferred" Plan.

Response 15.4:

Comment noted. This comment is directed at the proposed project and not the EIR.

LETTER 16.

Alta Tura, Co-President, Urban Creeks Council, 4855 Hamilton Street, Sacramento, California (September 5, 1997).

Comment 16.1:

Comments on the Process In the spring of '96, representatives of UCC along with Audubon Society, Native Plant Society, Environmental Council of Sacramento, and Sacramento Open Space were invited to participate with the County and developer representatives in formulating a drainage plan for Gerber and Elder Creeks in the North Vineyard Station Specific Plan area. We appreciate the opportunity that was given for our input, and feel we learned much about what the County is dealing with in the Specific Planning process. We attended several meetings, giving verbal and written input. Unfortunately, virtually none of our recommendations were integrated into the preferred plan. Some of our recommendations appear in the DEIR's Biological Resources section.

The streams running through the North Vineyard Station and other specific plan areas in the south county offer a new opportunity to capitalize on creeks as amenities to development as was done with development along Laguna Creek. The width of the Laguna Creek Parkway corridor is generally sufficient to accommodate wildlife, trails for transportation and recreation, parks and natural areas. In contrast, houses crowd Morrison Creek to the point that is just a drainage with almost no biological functions, and now flood walls are being proposed as the solution. Creeks in the north are a maintenance and flood control headache because development in most cases was allowed too close to the creeks. Instead of recognizing the many benefits that would result from a wider corridor, the preferred alternative for NVS relies of technical fixes and allows bare minimum corridor widths to free up more land for development.

Response 16.1:

Comment noted.

Comment 16.2:

Page 11.41 refers to the drainage parkway alternative proposed by the above-mentioned environmental groups. It states, "These recommended policies have been included in their entirety for the readers reference in the Biological Resources section of the EIR." A contradictory statement is made later in the DEIR on page 14.29. The DEIR states that the environmental community "formulated 16 alternative drainage corridor policies for Elder

and Gerber Creeks, 14, of those policies address biological resources and are discussed below." It appears only 14 of our 16 policies are to be shown in the DEIR. However only 10 or our proposed policies actually appear. Most of those missing are revisions we made to draft policies presented to us in the above-mentioned meetings.

Response 16.2:

The sentences in question on Page 14.29 (see errata section, Attachment 2) has been revised to read:

> During development of the Specific Plan, representatives of the environmental community Environmental Council of Sacramento (ECOS), Urban Creeks Council, Audubon Society, Sacramento Open Space and California Native Plant Society), formulated 16 alternative drainage corridor policies for Elder and Gerber creeks **as listed on the pages that follow. Of** ~~14 of~~ those policies **14** address biological resources and are discussed below. These proposed policies were developed during a series of meetings with the project applicants and County staff (Planning and Community Development Department and Water Resources Division).

In addition, the list of alternative drainage corridor polies listed on pages 14.31 through 14.16 have been revised to include all 16 policies in an alternative font (Arial) to distinguish the policies from the EIR text. The 6 alternative policies that did not appear in the DEIR are highlighted with **bold** type as follows:

1. Provide flood control along Elder and Gerber Creek to accommodate peak flow conditions and normal drainage requirements; giving consideration to the overall watershed requirements for any proposed flood control measures. A multi-objective approach to planning channel modifications for flood damage reduction will consider hydrologic, geomorphic, and biological factors that influence stream hydraulics.

2. Maintain streamside resource values along Elder and Gerber Creeks, considering resource protection, recreation, education, flood damage reduction requirements and public safety.

3. Carry out an integrated design that provides an open space corridor along Elder and Gerber Creeks of sufficient size to enhance biodiversity, accommodate wildlife movement, sustain healthy ecosystems, and provide mitigation for loss of habitat and open space. Urban runoff from residential/commercial

development has been shown to be toxic to aquatic organisms. State and federal water quality regulations increasingly require communities to prevent toxic urban runoff from impacting aquatic habitats at potentially tremendous public expense. Designing developments with pollution prevention in mind is the most economical and effective approach in urban creek settings. Wide vegetation buffers, an average of 600 feet, will increase the options available to water quality managers to remove harmful sediment, nutrients, pesticides, metals and other chemicals from non-point source runoff, before they reach the streams.

4. The drainage parkways of Elder and Gerber Creeks shall be designed and maintained as a natural appearing corridor, serving to enhance wetlands and riparian habitats, act as natural flood water detention areas, function as water quality enhancement features, and provide wildlife habitat and wildlife corridors. The channel design should take into account the benefits of more natural channel morphology. The parkway's channel and banks should be designed with appropriate roughness factors and width to permit mature growth of native riparian and native hydrophytic (wetland) vegetation yet still convey regular flood flows. The use of native plant species and locally native materials is encouraged both inside and in the corridor outside the channel.

5. To the maximum extent practical, retain and create topographic diversity and variation when channels are realigned or modified, including maintaining meandering characteristics, varied berm width, naturalized and varied side slopes (i.e., 3:1 to 5:1), and a varied channel bottom elevation. Channel width should be sufficient to provide room for natural stream movement over time. The materials comprising stream bottoms and banks shall be the same or similar to those found in comparable natural streams (particularly reference streams selected by the California Department of Fish and Game for the purposes of biological assessment). Likewise, a natural array of riffles, runs and pools shall be preserved or created to provide habitats which support a diverse aquatic community.

6. Avoid direct discharge of sediment laden storm runoff to stream waters. Excess sediment deposition in streams destroys the natural assemblage of aquatic organisms that would otherwise inhabit a healthy ecosystem. To avoid physical aquatic habitat degradation, sediment control shall be an element of stream corridor design standards and runoff management. Detention basins or other catchment systems which settle out sediment shall be accessible for routine sediment removal to ensure the long-term viability of these systems.

7. Provide for monitoring of the ecological health of the streams. Baseline water quality monitoring shall be conducted at least quarterly in the year prior to commencement of stream modifications, land grading or building construction. Biological assessment techniques shall be a component of this initial monitoring, as well as subsequent monitoring, to measure the suitability of water quality and habitat for benthic (bottom dwelling) invertebrates, algae and fish. Quarterly monitoring shall continue for a minimum of five years, or until 75% of the development in the watershed is completed, whichever is longer. Throughout this period, incidence of perturbations in stream quality shall be investigated using appropriate biological, chemical or toxicity testing to identify and remediate the source(s) of the problem(s).

8. **Long stretches of backup lots along parkways and open space corridors are discouraged. Effective patrolling requires the utmost visibility for foot and vehicular patrols. The use of front on streets is preferred, with side yard lotting patterns and open-ended cul-de-sacs being less appropriate. Backup lots, side yard lotting patterns, and open-ended cul-de-sacs will be restricted to 25% of the parkway length within the Specific Plan area. Through appropriate planning, a need for backup lots and side yard lotting patterns could be further reduced. An outreach program should educate the neighborhood about the benefits of the creeks and corridors and how to protect them, e.g. no dumping, no independent planting in the corridor, creek study, and other appropriate recreational activities.**

9. **Development located adjacent to the open space corridors of Elder and Gerber Creeks shall incorporate the corridor into the design of the project with attention given to minimizing the frontage that is blocked off from public view. Development proposals adjacent to the open space corridor shall have a public street paralleling at least one side of the corridor with vertical curbs, gutters, footpath, street lighting and post and cable barriers to prevent vehicular access. It may be appropriate to alternate the public street frontage from one side of the corridor to the other to maintain aesthetics for residential lots on the corridor, but resulting in not less than 75% of corridor having street frontage within the Specific Plan area.**

10. **Residential lots which back up or have a side yard orientation to the open space corridor shall employ the use of open fencing (e.g., wrought iron or decorative iron) to enhance surveillance of the corridor and provide a**

visual amenity. A 3-foot solid wall with 3 feet of open fencing on top is acceptable, while 6 feet of wrought iron is preferred for surveillance purposes. (Note: Chain link fencing is not an acceptable fencing material.)

11. Require that prior to the approval of any rezone or tentative map entitlement within or adjacent to the currently designated floodplain of Elder or Gerber Creek, or modified floodplain as recognized by FEMA, a comprehensive open space corridor management plan (including revegetation, vegetation maintenance, and 5-year monitoring plans) shall be prepared and approved by the Board of Supervisors for that portion of the Creek included in the planning proposal, and extending 100 feet both up/down stream. The management plan shall include:

a. A precise proposal encompassing the flood channel and open space corridor which adheres to the above stated policies and addresses the biological, aesthetic, and recreational qualities of the open space corridor;

b. An appropriate interface between the open space corridor and adjacent development with respect to aesthetics, access, maintenance and security;

c. An appropriate funding mechanism to establish, operate and maintain the open space corridor. A funding mechanism which is provided for a public entity should be given priority. As sections of the trail system are improved, they should be dedicated to Southgate Recreation and Park District for ongoing maintenance.

12. To the extent feasible, the storm water detention basins located within the North Vineyard Station Planning Area should be designed in a manner which allows the joint use of the facility for detention and recreation purposes. Guidelines should be followed as outlined in Volume 4 of the City/County Drainage Manual, and development plans should be coordinated with the Southgate Parks and Recreation District.

Elder and Gerber Creek Corridors

13. Establish a permanent open space corridor with a width of 600 feet along Elder

and Gerber Creek extending from the City Limits northeastward to the upstream watershed boundaries (if and when development occurs upstream). The width of the open space corridor may vary depending on:

a. unavoidable physical or man-made constraints occurring in the immediate area;

b. quality and quantity of existing and planned habitat;

c. presence of species, as well as their sensitivity to human interaction;

d. areas required for vegetation regeneration;

e. desire for community greenways;

f. nature of planned uses adjacent to corridor;

g. corridor for wildlife habitat linkage.

However, the absolute minimum width for the open space corridor shall be 150 feet on each side of the drainage canal outside of easements and detention basins and between detention basins and roads. The width of the open space corridor shall be made sufficient to accommodate broad and architecturally diverse native vegetation capable of: (1) trapping sediment and detoxifying pollutants from non-point sources such as neighboring yards; (2) providing habitat for native fauna; (3) competing against non-native invasive plant species; and (4) shading at least 75% of the surface at all times of the day, to maintain cooler water temperatures and associated, higher dissolved oxygen levels for aquatic organisms. To ensure adequate area for trails and other open space uses, the corridor widths and delineation will be determined after mitigation requirements from the various regulatory agencies (Army Corps of Engineers, Fish and Wildlife, Fish and Game) have been decided. If regulatory requirements take up the entire corridor, the width will need to be increased to allow for these planned open space uses.

14. **When detention basins (water quality and/or flood control) are adjacent to the drainage canal, the open space corridor shall begin at the outside edge of the detention basin. When detention basins are adjacent to roads, the open space/habitat corridor shall continue between the road and the basin in order to maintain the integrity of the corridor.**

Constraint - If no woody vegetation is permitted within the 50 foot interceptor easement, the corridor shall begin outside the interceptor easement.

15. The corridor shall have a meandering appearance, and shall offer a variety of environments including: natural areas, revegetated/woodland areas, open grass fields/glades and passive recreation park land (not part of Quimby requirement). The corridor shall also be designed to accommodate interpretive areas, bike/pedestrian pathways, an equestrian trail, walkways, and a natural habitat corridor. These improvements shall be paid by the developer. There is a need for separation of some uses to maintain the integrity of the uses, e.g. horse trail must be separate from pedestrian trail.

    The location of the drainage channel within the open space corridor may vary providing character and uniqueness as long as flood damage reduction measures are not negatively impacted.

16. Where the drainage canal flows under a road, that area should be of sufficient width and depth to include the trail, bike/maintenance trail, and habitat corridor. This allows for safe crossings (under as opposed to at road grade level). It also allows for better flood damage reduction. Where depth isn't sufficient for a bike trail, additional width for the habitat corridor should be included. Large floods can carry large amounts of debris such as uprooted vegetation and trees, fences, and parts of structures. This, combined with sediment, could impede or block the efficiency of medium sized culverts. Partial obstructions at bridges and culverts can cause significant increases in upstream flood elevations. If at-grade crossings are necessary, crossing lights, stop signs, and/or crosswalk markings shall be funded by the Specific Plan finance plan.

Comment 16.3:

Hydrology and Flooding. The County has not yet adopted a Drainage Master Plan (DMP) for the overall Elder/Gerber watershed per page 2.20 of the DEIR. It is our understanding that the General Plan calls for 600 foot wide corridors on creeks that do not have a DMP. A preferred alternative is not the same thing as an approved plan. Approval of the preferred drainage plan for the NVSSP (average corridor width less than half the 600 foot width) without an Elder/Gerber watershed DMP would be in violation of the County's General Plan.

Response 16.3 (by Water Resources Division):

The Sacramento County Water Resources Division ,WRD, staff (R. Hettick) has prepared the following reply to this *Hydrology and Flooding* comment as well as the related hydrology and flooding comments that follow.

The General Plan does not state that the Drainage Master Plan (DMP) must be watershed-wide in order to define the Open Space component. The NVSSP DMP is a stand-alone document that provides the NVSSP open space planning, independent of the Elder and Gerber Creeks Drainage Master Plan (EGDMP). The EGDMP and the NVSSP DMP are tied together by the common UNET Analysis that provides the technical background and channel continuity between the two studies (available for review in the *NVSSP FEIR Final Technical Appendices Volume II*). The NVSSP Drainage Master Plan has been carefully coordinated with the County's watershed-wide UNET Analysis, and will provide continuity in open space planning among the NVSSP developments.

Comment 16.4:

Hydrology and Flooding. Page 2.22 discloses an existing overflow flood condition along Gerber Creek east of the NVSSP area that "causes flood flows to spill overland into the NVSSP area, placing a broad swath of the southeast portion of the Specific Plan area within the 100-year floodplain. Development of the proposed NVSSP urban land uses cannot occur in this area until this floodplain area is reclaimed. Such reclamation could be provided by constructing ultimate off-site, upstream Gerber Creek channel improvements to a point approximately 1800 feet north of Gerber Road Crossing No. 1. Alternatively, a new channel (either interim or permanent) could be constructed across the southeast portion of the Specific Plan to confine the overflow from Gerber Road in a manner which reduces the extent of the 100-year floodplain over this portion of the site, allowing development of a portion of the proposed NVSSP land uses in the area to proceed."

The proposed solutions are discussed no more completely in the Hydrology section. There is no map. No detail, no discussion of impacts of these alternatives. The planned development might require substantial alteration if a new channel is created What route would the new channel follow?

Response 16.4 (by Water Resources Division):

The alternative channel would probably follow the overflow path. Chapter 6 of the UNET Analysis (Existing Conditions 100-year Event) provides a flow hydrograph of the overflow (Figure 6.4a) and shows a diagram of the overflow path (figure 6.4b). It is important to

understand that the Drainage Plan for this area outlines the planned *ultimate condition* of channels and detention basins, a condition that may not occur for many years. Although planned, the facilities will not be fully designed until adjacent and/or upstream development construction is eminent. At that time specific alignment details will be developed.

Comment 16.5:

Hydrology and Flooding. What would be the project and downstream impacts of this channel?

Response 16.5 (by Water Resources Division):

Temporary Channel The hydraulic effect of a temporary channel following the overflow route would probably not be significant. The temporary channel would emulate the existing condition, with flow split between the existing channel south of Gerber Road and the overflow path. The overflow channel would operate more efficiently that the current overflow path, conveying the flows more rapidly, but the effect would probably be of little significance outside of the plan area.

The channel would be temporary and would not require an amendment to the adopted land use plan, but could warrant a temporary change in the size, and configuration of Basin G46.

Ultimate Channel Creation of an ultimate channel following the overflow path would shorten the creek, resulting in more efficient flow. The small flow restriction associated with Gerber Road Crossings 1 and 2 would be eliminated (and possibly replaced with one or more bridges internal to the NVSSP area). The effect on drainage south of Gerber Road (between Crossings 1 and 2) would be small, with those lands continuing to drain north toward Crossing 2. The size of Crossing 2 could be reduced to carry local flow only, since Gerber Creek would be passing to the north in the new channel. It is possible that the planned improvement for Crossing 1 could be eliminated or greatly reduced in size.

In order to accommodate an ultimate channel that follows the overflow route, the adopted NVSSP land use plan must be amended. The configuration of Basin G46 and the identification of an open space corridor adjacent to the new creek alignment would also need to be revisited.

Comment 16.6:

Hydrology and Flooding. Plate HY-C seems to show that the detention basin, not a channel, is part of the preferred DMP for the Elder/Gerber DMP. Is this correct?

Response 16.6 (by Water Resources Division):

The preferred alternative for Gerber Creek is to follow the existing creek alignment south of Gerber Road between Gerber Road crossing No. 1 and No. 2, and incorporates detention Basin G46 at the site identified on plate HY-C. The overflow channel discussed is an alternative to the preferred alternative and is not shown on plate HY-C. As mentioned above, a channel using the overflow route would probably cause a reconfiguration of Basin G46.

Comment 16.7:

Hydrology and Flooding. It appears that the absence of a DMP for the Elder/Gerber Watershed leaves this issue up in the air.

Response 16.7 (by Water Resources Division):

The WRD preferred alternative for Gerber Creek is the existing alignment south through Gerber Road Crossing No. 1. The UNET Analysis and the NVSSP DMP clearly states this. The Elder Gerber DMP will have the same conclusion, since it is based on the UNET Analysis. Discussion of the three alternatives does not change the WRD position on the preferred alternative. A diagram showing the flow path and volumes is available in the UNET Analysis published in the *NVSSP FEIR Final Technical Appendices Volume II.*

Comment 16.8:

Density Reduction Alternatives. 10% and 15% Density Reduction Alternatives are discussed on pages 5.6 through 5.8. We suggest that a 600 foot wide creek corridor could be part of the density reduction. Proximity to the creek with a wider corridor than proposed would effectively lower the density for those parcels. All residents, including those living in higher density areas, could benefit from the amenity of open space. The corridor as currently planned will leave little room for open space with vegetation. What little space is allowed will be gobbled up by trails, firebreaks, easements and unplanned or unforeseen needs of the space. This has been the experience along most of Sacramento's urban creeks.

Response 16.8:

Comment noted.

Comment 16.9:

Vernal Pool and Seasonal Wetland Impacts. The proponents propose off-site mitigation to compensate for vernal pool impacts of the project. We support the preparation of an On-site Wetland Preservation Plan as described on page 14.17 of the DEIR. The DEIR discussion indicates that most of the vernal pools are located in the east portion of the plan area. An on-site preserve of sufficient size (at least 200 acres) and including the pools' watershed may be feasible and would be preferable to off-site vernal pool creation. We would add to the On-Site Wetland Preservation Plan a restoration component so that less off-site and creation mitigation would be required.

Response 16.9:

Comment noted.

Comment 16.10:

Vernal Pool and Seasonal Wetland Impacts. If off-site mitigation is to occur, we would urge the County to follow the California Native Plant Society guidelines. CNPS guidelines recommend off or on-site mitigation be not less than 2:1 in purchase of easement. If rare species are present the ration should be 3 or 4 to 1. Restoration or preservation of damaged vernal pools is preferred over creation. Vernal pool creation should be at more than 3:1.

Response 16.10:

Comment noted.

Comment 16.11:

Funding for Drainage Parkway Buffer Areas. Page 11.37 states, "the Specific Plan does not identify the funding source or mechanism for land acquisition and landscaping improvements within the buffer area portions of the drainage parkways." We agree with a later statement on the same page, "the Specific Plan should be revised to clearly specify the funding source or mechanism for acquisition of the buffer area lands...and to clearly specify the funding source or mechanism for construction of the buffer area landscaping improvements..."

Response 16.11:

Comment noted.

LETTER 17.

Judith Wilson & Roy Pace, 9091 McCoy Avenue, Sacramento California (October 15, 1997).

Comment 17.1: *(paraphrased)*

We own a one acre parcel of land within the North Vineyard Specific Plan. When we were first informed about this project our land had been designated entirely as a water retention basin. After attending almost all of the community meetings and voicing our concerns, the detention basin has been moved to a different location. However, we have repeatedly voiced our concern that the widening of the creek and the open space corridor still takes so much of our small parcel that the widening of the creek and the open space corridor still takes so much of our small parcel that the value of the property would be greatly reduced.

Response 17.1:

Comment noted. Comments contained in this letter are directed at the proposed project and not the adequacy of the environmental document. No response is required pursuant to CEQA.

Comment 17.2:

Unfortunately we were not able to attend the meeting that the Policy Planning Commission had on September 10th. During that meeting the Suggested Alignment A-2 to modify the alignment of Elder Creek was discussed. We do not understand why the creek cannot be moved a little further Northwest. The property behind ours is 9 acres and has nothing on it except a renter with his own trailer. Surinder Singh said at the meeting on October 24th that where ever possible the creek had been adjusted so as not to impact small parcels. The creek could be moved over a little further. (There is also a beautiful huge oak tree which will be right in the middle of the creek if the creek is not moved slightly.)

Response 17.2:

Please refer to Responses 19.6 and 19.8 to Mr. & Mrs. Jim Jordan (Letter 19).

Comment 17.3:

We were also very angry and distressed to learn that Planning Staff had several meetings with property owners who live along the creek corridors where Elder Creek and Gerber

Creek meet and that only those who attended the last meeting were invited. Mr. Singh said that only those who spoke at that meeting were asked to attend, but Kathy Phillips was told of the meeting and she did not speak at that meeting. We have voiced out concerns at every public meeting. We feel that we should have been informed of those additional meetings with planning staff and should have had the opportunity to attend. We also are distressed to learn that had we been at those meetings the creek probably would have been adjusted as we recommend because everyone else that attended were given concessions.

Response 17.3:

Comment noted. These meetings were not part of the EIR process.

Comment 17.4:

Regarding our suggested modification to the creek (Exhibit 3.4), our suggestion need not be quite as drastic as portrayed on the map. These suggestions were drawn in a crude map with a felt tip pen and we assumed that those of us who made recommendations would be contacted by planning and would be able to further refine our suggestions, (why else did they ask for our telephone number?) But no further opportunity was forthcoming. We did not even know that our suggestion was included in the DEIR.

Response 17.4:

Comment noted.

Comment 17.5:

This whole process with planning and the community meetings has been very frustrating. Every meeting we attended was nothing bu the same thing over and over. Planning told us about the project and what stage in the development the project was at and every time any of the property owners had questions staff couldn't answer them or the answers were unsatisfactory. We were given the opportunity only once to actually make recommendations when we drew our suggestions on the map and we thought that further follow up would be forthcoming but it was not. What were those meetings for if the opinions of the homeowners were not noted and responded to? We felt as if no one was listening to any of us.

Response 17.5:

Comment noted. These proceedings are outside the EIR process.

Comment 17.6: (paraphrased)

If we owned a larger parcel than the one acre we would not be as concerned about the reduction in our acreage due to open space. But when you only have one acre, every foot you lose affects the overall value. Please accept our recommendation that the creek be moved. County planning staff concluded that realignment of the drainage channel is not seen as a significant impact to the proposed drainage plan, but that the extra expense to realign the drainage channel is not warranted. There are far more drastic and costly realignments being done in other places on the channel. However, if it is really impossible to change the creek alignment slightly, could the open space corridor at least be reduced to a minimum at that corner of our acre. Thank you for your consideration of this matter.

Response 17.6:

Comment noted. The ultimate drainage alignment will be determined by the Board of Supervisors.

LETTER 18.

Cathy Phillips, 9040 McCoy Road, Sacramento California (November 18, 1997).

Comment 18.1: (paraphrased)

I can substantially support this proposal with a few modifications as presented. Also note that I believe my neighbor's Jim Jordan, proposal would be totally unfair to me, and would render my remaining property virtually useless.

I propose that the west forty feet of my easement reserved for the green belt be partially used for an access road along the west bank of the channel. To minimize my liability I propose that the County finance, erect, and maintain a six foot fence, adjacent, and to the west of my proposed channel access road. In regards to the channel on the south side of my property, I can support a similar arrangement wherein all improvements, including the future greenbelt, will be contained within this easement.

Response 18.1:

Comments contained in this letter are directed at the components of the project drainage master plan and open space plan, and not the environmental document. No response required pursuant to CEQA.

LETTER 19.

Mr. & Mrs. Jim Jordan, 7471 Jordan Lane, Sacramento, California (December 4, 1997; November 25, 1997).

Comment 19.1:

This letter concerns the encroachment of the proposed North Vineyard Sation Specific Plan creek alignments and open space on our home.

Our family has been in the South County since before California was a State. At present we are at eight generations. Our home is located at 7471 Jordan Lane. It's a 10 acre piece that was subdivided in March 1903. It is currently in agricultural use - dry farming: oats and animal husbandry. It has no easements and more importantly no creeks.

Back in the early 50's a diversion ditch was bootlegged on our neighbors property which handles the sporadic summer run off (refer to exhibit A, marked in blue). The ditch cuts thru high ground and in winter time has proven to ineffective. It does no work! At present, when we get the volume of water these new creeks are designed for, ti follows the creeks historical natural alignment (see exhibit A, marked in yellow, and exhibit B photographs).

The Boards instructions on the Specific Plan's boundaries were not followed. I'm referring to Phillips North and West property lines and the interfacing problems with the Champions Golf Course. Not enough of Elder Creek was included to comply with county policy It has made it next to impossible to come up with an equitable solution.

The County's preferred alternative is to place Elder Creek and Gerber Creek onto our property. We've been dealing with the County staff for over a year unsuccessfully with other alternatives. It wasn't until the first meeting with your board and you directed Staff to meet with us to try and work something out that we started to see progress. The result of that is the moving of the County's preferred alignment of Gerber Creek off our property, closer to it's natural alignment and the reduction of the open space corridor.

Response 19.1:

This comment has been noted. On December 10, 1997 County Planning and Community Development Department staff (S. Singh) prepared and forwarded a memorandum to the Policy Planning Commission to respond to the comments and inquires that were raised by Mr. & Mrs. Jim Jordan in a letter dated December 4, 1997 and also in a letter that was

provided during the Policy Planning Commission hearing that was conducted on November 25, 1997.

As noted in the December 10, 1997 memorandum the responses that follow have been prepared by staff from the Planning & Community Development Department, Water Resources Division of the Public Works Agency, Department of Environmental Review and Assessment and MacKay & Somps.

Comment 19.2:

Why weren't the Boards instructions followed concerning Specific Plan boundaries?

Response 19.2:

During a telephone conversation with Mr. Jordan on December 8, 1997, Planning Department staff (Singh) explained that a land use plan has been prepared in conformance with planning area boundaries that were approved by the Board of the Supervisors for the North Vineyard Station Specific Plan area. On April 19, 1993, the North Vineyard Station Property Owners Group filed a petition with Sacramento County to initiate the North Vineyard Station Specific Planning process. The petition proposed the planning boundaries and provided a justification statement for the initiation of the Specific Plan. Planning staff reviewed the Specific Plan proposal and found it to be consistent with the intent of General Plan policy. On January 19, 1994, the Board of Supervisors adopted Resolution No. 94-0062, initiating the North Vineyard Station Specific Plan for the following area and boundaries: Florin Road to the north, Gerber Road to the south, the extension of Vineyard Road to the east and the Elder Creek (west side, top of channel) roughly constitutes the west boundary.

Comment 19.3:

Every winter proves the ditch, marked in blue, does not work so why does the County want to put the creek there?

Response 19.3:

The existing ditch (Elder Creek) does not have the capacity to carry the volume of water generated by a significant storm. However, if this same size channel were placed in its historic path through the Phillip's property, the flood flows would still spill onto the adjacent lands. The floodplain in this area has historically been wide and shallow, with higher flows

traveling outside the channel banks. Construction of a deeper, wider channel will significantly increase the capacity of Elder Creek. It is the opinion of staff of the Water Resources Division that there is no significant difference in *flow efficiency* between an improved creek in the historic path or an improved creek along the preferred alignment.

Comment 19.4:

In Alternate A-1, why does it say it will "significantly affect parcels by severance, creating additional constraints" when this condition already exist.

Response 19.4:

Alternative A-1 would result in the establishment of a drainage and open space corridor with a minimum width of 150 feet on parcels APN# 065-0080-050, 066, 067 and 068. The drainage easement and open space area would bisect and sever properties APN# 065-0080-066 and 067 to a point where the remaining unconstrained land on both parcels may not be feasible for future urban development. This option creates an excessive burden for the impacted property owners since both parcels are only 3.18 acres in size individually. Impacted parcels are too small to accommodate such facilities and a significant portion of the properties may be utilized to accommodate creek/open space. This option is not likely to be supported by impacted owners.

Comment 19.5:

Alternative B-4 says a 90 degree confluence is not hydraulically favorable, possibly increasing cost with channel lining and energy dissipation, so why does Staff's preferred alternative include a 90 degree bend when it's not necessary?

Response 19.5:

The velocity of the flow is the main factor that controls the significance of a bend. In cases where the velocity is high, bends create impedance to the flow (through turbulence) and can damage the channel by scouring the outer edge of the turn. It is possible that this effect would be greater in a 90-degree confluence than in a 90-degree bend because two previously separate hydraulic channels would come together. However, it is important to note the Alignment Alternatives Report said bends "may cause" an effect, not that they will cause an effect. If studied, it is the opinion of staff that the velocities would prove to be low enough that the bend at the south end of the Jordan's property would not cause a consequential constraint to the flow of water. A 90-degree confluence could also be possible without cost prohibitive channel lining or energy dissipation, if the flow velocities are low.

The discussion of the channel bends needs to recognize the difference between hydraulic constraints and other criteria, namely the General Plan policies. A previous owner of the Phillips property, who aligned the channel along a property line, has removed the natural meander of the creek. The Conservation Element encourages natural, meandering channels (CO-107) and restoration of channels to their natural alignments (CO-112) but also directs designers to closely follow existing channel alignments (CO-106). Elder Creek has followed its current alignment for a significant length of time, creating questions of interpretation for CO-106. Returning the channel to its historic (pre-1930's) alignment will severe parcels creating access and "developability" problems which also conflicts with policies in the General Plan.

Comment 19.6:

The Staff' preferred alignment and alignments A1, A2, B1, B2, B3, B4 ... all have some pros and cons. Why was staff unable to recommend at least one of the other alternatives? Example A2.

Response 19.6:

The Drainage Master Plan prepared for the North Vineyard Station Specific Plan area identifies a preferred alignment for Elder and Gerber creeks. This information was provided to local resident during a series of public meetings that were conducted by County staff in August and September 1996. During the meetings, several residents had voiced their concerns regarding components of the Drainage Master Plan, particularly the preferred alignment for Elder Creek. Several alternative alignments for Elder and Gerber creeks were suggested by local residents during the meetings. All comments and suggestions were recorded by County staff. Suggestions regarding alignment for Elder and Gerber Creek were addressed as alternatives for the purposes of CEQA analysis. Staff also reviewed all alternative alignment and prepared a report that qualitatively evaluated the alternative alignments. Planning staff recognized that the Elder Creek alignment, as identified in the North Vineyard Station Drainage Master Plan, is the preferred alignment; while alignment suggestions received from local residents were all recognized as alternatives.

Comment 19.7:

According to the Staff preferred alternative, the West bank of the diversion ditch cannot be preserved because the ditch has to be filled in to create the designed flood plain--Yes or No?

Response 19.7:

The 100-year water surface elevation in Elder Creek adjacent to Ms. Phillips and Mr. & Mrs. Jordan's property is approximately 41.9 feet. The minimum bank elevation will be about 1' above this elevation to provide sufficient freeboard. Therefore, the proposed minimum bank elevation will be around 43.0 feet. This elevation appears to be below the existing ground elevation on both properties. Therefore, no fill would be required along the channel banks. The western bank of the proposed channel could match the existing western bank of the existing low flow channel.

Comment 19.8:

Why do they want to preserve the West boundary of the diversion ditch which is basically a hard pan surface, with a few almond suckers when the east bank has a nice big oak tree on it? See exhibit C. Why isn't all the existing 75' drainage easement on the East side of the Phillips property being used? The Staff's preferred alternative uses only 30' of easement and kills the oak tree.

Response 19.8:

The proposed channel alignment attempts to comply with as many General Plan policies as feasibly possible. The alignment follows the existing channel when possible and avoids existing structures, trees, and unnecessary bends when possible. The alignment also attempts to provide a plan that results in parcels of size and shape to allow for future development. Due to the many property owners, constraints and conflicting general plan policies, 100% compliance is not possible. The preferred alignment of Elder Creek adjacent to Mr. & Mrs. Jordan's property and Ms. Phillips' property attempts to comply with the majority of General Plan policies and achieve a feasible plan for future development while reducing impacts to existing property owners. The alignment is located so that the existing 75' drainage easement on Ms. Phillips' property is utilized for 30 feet of channel and 40 feet of open space. The alignment follows the alignment of the existing low flow channel and could potentially preserve the western top of the bank. In this location, the alignment was chosen to avoid Ms. Phillips' home and result in a usable remaining parcel. Because Ms. Phillips' parcel is small in size and has a long and narrow shape, the channel alignment was chosen to reduce impacts to her parcel. If the proposed channel's western bank is moved 25' to the west (putting it 15' from the existing easement line to allow for a possible maintenance road), as previously suggested by the Jordan's, the channel would be 25' from Ms. Phillips' out structure and 60' from her home. The size and shape of the remaining parcel could make it difficult to develop this property. The oak tree on the eastern bank identified in Mr. Jordan's letter still would not be saved.

Comment 19.9:

Is the floor level of detention ponds above or below the flow of the Creek? Why?

Response 19.9:

The *flood control* detention basins are designed for gravity outflow. The floor of the basin is slightly higher than the flow line of the improved channel, allowing the basin to drain to the creek through a pipe. Please see MacKay & Somps or the WRD Storm Water Quality Section for design details of the water quality ponds.

For Flood Control Basins:
The water surface elevation of the creek depends on the flow in the creek at a certain time. During a significant storm event, the basin floor will be lower than the water surface in the creek. During dry times and small storms, the basin floor could be higher than the creek water surface. The basin drains at a rate primarily dependent on the *difference* in water surface between the basin and the creek. If the basin water surface is high (full basin) and the creek water surface is low - the basin drains faster. If the creek water surface is high – the basin drains slower. In general, the flood control detention basins are designed to drain one or two days after a major storm.

Comment 19.10:

What is the proposed flood plain elevation and the flow line of the proposed creek 300' downstream from the bridge on McCoy Ave.?

Response 19.10:

Approximately 300 feet downstream from the McCoy Avenue crossing the proposed 100-year floodplain (water surface) is 41.9 feet. This value was calculated with the UNET hydraulic model. The proposed flow line elevation at this location (near cross section 5.914 on Upper Elder Creek) is 35.1 feet. The existing condition elevations are listed below.

	Existing	Proposed
Channel flow line elevation:	42.0 feet	35.1 feet
100-year water surface elevation:	46.0 feet	41.9 feet

Comment 19.11:

It's been established that the subdivision runoff is toxic and the detention ponds are designed

to solve this problem. Where does the toxic silt go that is harvested from these ponds?

What happens in wintertime when floodwater flushes the system, ponds silt and toxins directly from subdivision into the creeks?

How are these toxins going to be kept out of ground water when the flow line of the creek will be 4' into extensive pervious material? Notice aggregate profile in well log, exhibit D?

Response 19.11:

The water quality detention facilities are designed to capture the "first flush" of a storm meaning the first amount of runoff containing the largest amount of urban runoff constituents that have collected on the ground since the last rain. The levels of the pollutants in urban storm water runoff are very low.

The water quality detention facilities are designed to detain the volume of storm water generated from the majority of the storms based on historical data. As the storm water sits in the detention facilities, the sediment and some particulate pollutants settle to the bottom of the basin, and the treated storm water slowly returns to the channel and flows downstream. It is our understanding that the WRD maintenance division monitors the silt levels in the ponds and removes silt and any accumulated pollutants contained within it in accordance with state standards. Please see Sacramento County WRD Maintenance Division for more information.

Some storm water may percolate into the ground. The percolation of storm water into the ground is another means of treating (filtering) the water before it reaches the ground water table. As previously described, the levels of urban constituents within storm water are very low. In fact, the levels of pollutants are much lower than those found in typical septic systems in the area, which currently use percolation as treatment.

In very large storm events, the water quality detention volumes will be exceeded. However, in such large events, the concentrations of urban runoff constituents are diluted to levels not requiring treatment by detention. Due to the configuration and location of the water quality basins, re-suspension of solids during a large storm event is unlikely. To the extent possible, the design of the basins will be such that the velocities of flood flows in the vicinity of the water quality portion will be low, reducing the likelihood of re-suspension of sediments.

Comment 19.12:

Why does the Staff's preferred alternative impact us (one property owner) so severely with

open space and two creeks when compared to the rest of the plan area?

Response 19.12:

The Jordan parcel is 9.7 acres. Based on the WRD UNET model, approximately 5.6 acres (58%) of the parcel is currently within the existing 100-year flood plain. The parcel is located at the confluence of two streams. These factors, along with the many other constraints previously discussed, contributed to the location of the preferred alignment on the Jordan property. The proposed channel improvements will significantly reduce the flood plain on the Jordan property by confining it to within the improved channel banks. Please note that the acreage designated for the proposed drainage channel on the Jordan property is 2.5 acres (26% of the parcel) which is significantly less than the portion currently impacted by the existing flood plain. During public meetings with the property owners conducted by Sacramento County Planning and WRD at the direction of the Planning Commission, reduction of the open space width on the Jordan property was suggested. An alternative minimum width of 40' of open space was discussed. This alternative minimum open space width impacts 1.0 acres (10%) of the Jordan's property.

Comment 19.13:

As to alternative alignments the Staff and proponents have mistakenly singled us out and refused to "trade faces, why?"

Response 19.13:

There seems to be a misunderstanding regarding the term "trade faces." George Phillips used the term to describe a phenomenon common to large projects. He said that the hearing boards (Planning Commission and Board of Supervisors) understand that if a planned facility (creek, road, sewer line, etc.) is moved because of the objections of the property owners, it creates the same conflict with the property owners at another location.

In this case, the anticipated concerns of other property owners would be the burden of a creek on land that is not *currently encumbered by a creek or existing floodplain.* The WRD does not object to further study of other alignments if the Planning Commission directs. This will result in project delays while other property owners are contacted and given a chance to register their complaints. Because the Jordan's property is partially encumbered by the Elder Creek floodplain, it is likely to be somewhat affected by any project in the area.

LETTER 20.

James B. Wiley, Taylor & Hooper Attorneys, 1435 River Park Drive, Suite 300, Sacramento CA (September 5, 1997).

Comment 20.1: *(paraphrased)*

The Thompsons are concerned about the referenced project's environmental impact on their property's use and value. This letter discusses their concerns and asks specific questions regarding the County of Sacramento's (hereafter "County") plans regarding their property.

Response 20.1:

Comment noted.

Comment 20.2:

Detention Basins Exhibit 11.2a of the DEIR shows that a detention basin, specifically E-26, is located in the general area of the Thompson property. Has the County developed a plan for the watershed north of Florin Road? Has the County committed any resources or conclusively decided that a detention basin will be located on the Thompson property?

Response 20.2 (by Water Resources Division):

In response to this and other drainage comments County Water Resources Division staff (R. Hettick) provided this and other drainage responses with regard to the Drainage Plan for the area as follows:

It is important to understand that the Drainage Plan for this area outlines the ultimate condition of channels and detention basins, a condition that may not occur for many years. Given the realities of drainage financing, facilities will not be designed or constructed until development occurs. The WRD does not control the economic forces that drive development. Thus, it is not possible to accurately predict the construction timing of planned drainage facilities. Construction of channel improvements on Elder Creek north of Florin Road is linked to the development plans of the property owners themselves and their upstream neighbors. To WRD knowledge no planning process has begun for properties upstream of Florin Road.

Detention Basins The WRD has developed a plan for the entire watershed including the area north of Florin Road. Hydraulic and hydrologic studies using the UNET computer program

have determined the channel size, detention basin size, and general detention basin location. However the UNET model does not determine the exact location of facilities. Upstream of Florin Road, the Drainage Master Plan for Elder and Gerber Creeks (EG DMP) is planned to be programmatic in nature, with exact channel and basin locations to be determined in the future, when development is initiated for the area. Where possible, the creek alignment will coordinate with the planned sewer interceptor.

The UNET studies indicate that a detention basin is needed in the area of the Thompson property (Basin E-28, not E-26 as letter states). It is possible that the Thompson property may be identified as a possible detention site, however it was not one of the initial properties studied. Topography, land use, and environmental constraints control the final basin location.

Comment 20.3:

Width of Open Space Corridors What is the proposed width of the open space corridor on Elder Creek immediately north of Florin Road? Page 11.16 of the DEIR states that the open space corridors' widths will vary between 150 and 240 feet. According to staff's presentation at the August 27, 1997, Planning Commission Meeting, the preferred plans calls for an open space corridor width of between 250 and 425 feet. Further, on August 27, 1997, staff mentioned that environmental groups have requested an alternative of open space corridors of up to 600 feet in width. Thus, please clarify what the width of the open space corridor will be on Elder Creek immediately north of Florin Road.

Response 20.3 (by Water Resources Division):

Width of Open Space Corridors In the absence of a final Drainage Master Plan for the area upstream of Florin Road, the General Plan outlines a 600-foot wide open space corridor.

Response 20.3 (by Planning Department):

The North Vineyard Station Specific Plan (NVSSP) land use diagram, including alternative, identifies a drainage corridor and an open space corridor for portions of Elder and Gerber Creeks that flows withing the planning area. For properties outside of the planning area, including the area north of Florin Road, no plans have been developed through the NVSSP process to define the boundaries of the open space area. General Plan Policy CO-103 requires that, in the absence of an adopted Drainage Master Plan for the entire watershed, a 600 foot corridor should be proposed for the Urban Stream Corridors.

Comment 20.4:

<u>Acquisition of Open Space Corridors' Property</u> Does the County Plan to acquire the property associated with the open space corridor located on the Thompson property? Does the County have any plans for acquiring the remaining portions of the Thompson property outside the open space corridor? If the County plans to acquire the Thompson property: (1) when will the County acquire the Thompson property; and (2) will the County use the property's current zoning for estimating its market value?

Response 20.4 (by Planning Department):

Land use plans, prepared for the North Vineyard Station Specific Plan area does not designate any open space use on the Thompson's properties. Historically, properties along creeks have been obtained for open space uses through project dedication and condition of approval.

Comment 20.5:

<u>Relationship to the Drainage Master Plan</u> When will the Drainage Master Plan for Elder Creek be available for public review? Will Elder Creek's Drainage Master Plan address the remaining property outside the North Vineyard Station Specific Plan area? Is the Specific Plan's drainage plan being coordinated with the larger Drainage Master Plan?

Response 20.5 (by Water Resources Division):

<u>Relationship to the Drainage Master Plan</u>

1. The Elder and Gerber Creeks Drainage Master Plan (EGDMP) has two objectives: 1) to plan for the hydraulic needs of the watershed, 2) to plan the open space along Urban Streams. The UNET Analysis for the EGDMP, which outlines the hydraulic needs, is complete, but the open space plan is not. Because of competing priorities, the WRD does not have a final release date planned at this time. The UNET Analysis is available for review in the NVSSP FEIR Final Technical Appendices Volume II.

   The NVSSP DMP is a stand-alone document, independent of the EG DMP. They are tied together by the common UNET analysis that provides the technical background and continuity between the two studies.

2. Yes, the EG DMP will address the remaining area outside the NVSSP, but probably not to the level of detail of a Specif^ Plan. The EG DMP upstream of Florin Road

will be programmatic in nature, generally outlining the facilities needed.

3. The NVSSP Drainage Master Plan has been carefully coordinated with the County's watershed-wide UNET model to provide channel continuity, adequate capacity, and a system of detention basin that work together.

Comment 20.6:

General Plan Requirement and Floodplain According to Page 7 of the County's Land Use Element:

> *The Land Use Strategy Diagram designates most of the urban and urbanizing waterways floodplains as Recreational to preserve these natural corridors for public use. The designation was based on the latest FEMA 100 year floodplain data available when the diagram was prepared. The County will be implementing Master Drainage Plans during the term of the general plan and the 100 year floodplains are likely to be modified by this process. The County will therefore entertain general plan amendment application for land designated as Recreational which is subsequently removed from the FEMA 100 year floodplain.*

Please state whether the County plans to comply with this policy by entertaining general plan amendment applications for land currently designated as Recreation that will subsequently be removed from the FEMA 100 year floodplain.

Response 20.6 (by Planning Department):

General Plan amendment applications for land currently designated as Recreational that will be removed from the floodplain designation due to the adoption and implementation of Drainage Master Plan will be accepted if such applications are consistent with goals and policies of the General Plan.

LETTER 21.

George Phillips, Law Offices, 555 University Ave. Suite 200, Sacramento, CA (September 5, 1997 and October 21, 1997 supplement).

Comment 21.1:

Page 1.5, Minor Amendments, second paragraph on page. The Planning Director's authority to make minor amendments to the Plan as an administrative matter is valid only until the issuance of the first building permit for any parcel that is created consistent with the Specific Plan. The wording of this paragraph could be misinterpreted to mean that no minor modifications to the plan may be made after the first building permit is issued anywhere within the Specific Plan. Any parcels created subsequent to and consistent with the Specific Plan will result from subsequent Tentative Mapping efforts. Since most of the Specific Plan is single family residential involving only one permit per parcel created, granting authority to make minor changes up to the first building permit on any subsequently created parcel is excessive.

Response 21.1:

Comment noted. This comment does not address an environmental issue; however, please be advised that the wording of this paragraph in question was provided by you and the consultant team members who prepared the North Vineyard Station Specific Plan document (Public Review Draft-May 29, 1997) that was forwarded to DERA for environmental review. Please refer to the Specific Plan document Section 11.0, **"11.3.4 Minor Amendments"** which states the following:

> *Minor Amendment - Administrative*
>
> *The Planning Director has the authority to grant a minor amendment to the Plan as an administrative matter. The Director's authority extends to the review of the initial project only, and is valid up until the issuance of the first building permit for any parcel that is created consistent with the Specific Plan. (North Vineyard Station Specific Plan 5/28/97 Public Review Draft, page 11-4).*

This section may be rewritten for greater clarity as long as the intent is not substantially modified.

***Comment 21.2** (paraphrased):*

Page 1.7 and throughout the document. Specific Plan Proponents. Specific Plan proponents, also known as participating property owners for the project include: Winncrest Homes, US Home, Florin Investors, and Cal Maple Development. Movai, Saca Properties and East Bradshaw Gerber Associates are no longer participating property owners. Throughout the document, there are references to the proponent properties and participating properties. Please modify references and conclusions that are based on participating properties. In some instances, the Draft EIR includes evaluation of properties that are no longer participants. Please clarify in the Final EIR that technical studies may contain technical data for properties that are no longer considered participating.

Response 21.2:

In response to this comment the revised participating property owners information has been included in the Preface of the Final EIR document as follows:

> **The Specific Plan Proponents, also known as the participating property owners or petitioners, for the project now include: Winncrest Homes, US Home, Florin Investors, and Cal Maple Development. The Saca Properties, Morvai and East Bradshaw Gerber Associates are no longer participating owners. A revised listing of the North Vineyard Station Property Owners Group and their representative, or contacts, was provided by George E. Phillips (September 5, and October 22,1997 letters to DERA).**
>
> **1998 NVSSP Property Owners Group**
>
> **Winncrest Homes**
> **9985 Folsom Boulevard**
> **Sacramento, CA 95827**
> **Contact: Mike Winn**
>
> **North Vineyard Investors, US Home Corp.**
> **2366 Gold Meadow Suite 100**
> **Gold River, CA 95827**
> **Contact: Brian Bombeck**
>
> **Florin Investors**
> **9985 Folsom Boulevard**
> **Sacramento, CA 95827**
> **Contact: John Reynen**
>
> **Cal Maple Development**
> **P.O. Box 19034**
> **Sacramento, CA 95819**
> **Contact: Phil Courey**

NVSSP Representative
Law Offices of George E. Phillips
555 University Avenue Suite 100
Sacramento, CA 95825
Contact: George Phillips

Specific Plan Program Manager
County Planning & Community Development Department
827 7th Street, Room 230
Sacramento, CA 95814
Contract: Dave Pevny

Plate PRF-A is the revised "Location & Property Ownership Map" for the project area (revised Figure 1.7 of the public review draft Specific Plan document). These minor changes in the Specific Plan project document and related references in the DEIR do not affect the content or conclusions of the EIR.

In addition the Preface of the Final Technical Appendices Volume I and II contains the following statement:

> **Please note: Participating property owners have changed since the technical studies were originally conducted. These studies contain technical data for some properties that are no longer considered participating properties however, the technical data is not affected by these changes. The Specific Plan Proponents for the project now include: Winncrest Homes, US Home, Florin Investors, and Cal Maple Development. The Saca Properties, Morvai and East Bradshaw Gerber Associates are no longer participating owners. For a map of the current participating properties see Plate PRF-A in the Preface of the Final EIR.**

Comment 21.3:

Reference to project acreage varies throughout the document. The acreage of the North Vineyard Station Specific Plan area is 1,590± acres.

Response 21.3:

The project acreage varies throughout the DEIR, because the acreage information provided to DERA by you and/or members of your consultant team has been varied. In November 1995 your staff (K. Steward) transmitted a project description and Project Location discussion that states "the Specific Plan Area is comprised of 1,540± acres". The two technical studies prepared by Wallace Kuhl & Associates

note the project site they evaluated was an "irregular **1,580±** acres" (May 31, 1995 Preliminary Geotechnical Engineering Report, page 1; and March 1996 Preliminary Phase I Environmental Site Assessment, page 4). The December 4, 1996 Environmental Noise Analysis prepared by Brown-Buntin Associates notes the "Plan consists of approximately **1147** acres" (page 2). The May 28, 1997 Public Review Draft Specific Plan document prepared by you and your consulting team states in the Project Setting "the Plan area is approximately **1,595** acres in size" (page 2). In the Land Use Summary Table (page 3) of the proposed Specific Plan document the total gross acres for the Plan Area are listed as **1,594.5**.

Comment 21.4:

Page 2.1, Preferred Specific Plan. Clarify that the Specific Plan was developed through a public outreach process which included specific input from the Citizens Advisory Council (CAC), County Staff, project sponsors and the general public.

Response 21.4:

On page 4.1 it is noted that "numerous workshops in the community have been conducted to involve other local citizens and property owners in the preparation of the proposed specific plan land us plan for the project area".

Comment 21.5:

Page 2.1, Discussion of alternatives. The distinction between the 10% density reduction alternative and 15% density reduction alternative occurs in the holding capacity for low density single family (1-5 units per acre). In the 10% reduction plan, the holding capacity for single family residential (1-5 units) is 5 units per acre; in the 15% reduction plan, the holding capacity for single family residential is 4 5 units per acre. This difference in holding capacity accounts for the difference in the units between 10% and 15% density alternatives. Please make this clarification for similar discussions on pages 4.2, 4.3, 5.6 and 5.8.

Response 21.5:

Based on the above comment, the following new paragraph has been added to the "Project Description and Alternatives" section of the FEIR.

> **As noted by the project representative, the distinction between the 10% density reduction alternative and 15% density reduction alternative**

occurs in the holding capacity for low density single family (1-5 units per acre). In the 10% reduction plan, the holding capacity for single family residential (1-5 units) is 5 units per acre; in the 155 reduction plan, the holding capacity for single family residential is 4.5 units per acre. This difference in holding capacity accounts for the difference in the units between 10% and 15% density alternatives.

Comment 21.6:

Page 2.3 first paragraph. This discussion should be augmented to include reference to the designation of the plan area in the County's general Plan as an Urban Development Area. Holding capacity assumed for the plan area by the General Plan should be discussed.

Response 21.6:

The Land Use section of the DEIR (Chapter 5) contains more detailed discussion. The holding capacity of the Plan area under the General Plan is 7,200± dwelling units.

Comment 21.7:

Page 2.4 , Mitigation Measures LU-1 and LU-2. These suggested mitigation measures are inconsistent with and contrary to the consensus plan developed by County Staff, CAC and property owners.

Response 21.7:

Mitigation Measures LU-1 and LU-2 are suggested because the Preferred Specific Plan, or consensus plan, is inconsistent with the County General Plan stated objective that projected county population growth is to be accommodated through efficient transit-oriented development in new urban growth areas at the urban fringe.

The Preferred Plan is not an **"efficient transit-oriented development"**. The Preferred Plan is not committed to a mitigating pattern of land use that concentrates development in configurations designed to reduce automobile travel distances and related air pollution, as well as conserve energy and enhance the efficient provision of infrastructure and services. The Preferred Plan is simply a continuation of low density residential suburban sprawl, that characterizes much of the unincorporated area. As noted by Regional Transit staff (A. Palmere, April 15, 1996 letter to DERA) RT does not currently provide service to the planning area because it is a low-density

residential and agricultural area that is extremely non-productive for fixed route transit service. RT and County staff, as well as the general public and environmental community know that the development of a high-quality transit service to the North Vineyard Station area is contingent upon many factors, including but not limited to:

- **Design/approval of land uses within the transit corridors at residential densities and commercial intensities capable of sustaining transit service;**

- **Design/approval of residential and commercial site designs to enhance access to transit facilities;**

Almost all (93%) of the Preferred Plan area is designated for low density (1-7 du/ac) residential use. This type of low density, suburban development pattern, coupled with auto-oriented street/circulation patterns will not support an efficient high-quality transit service. Similarly approval of this low density suburban sprawl Specific Plan will not support an efficient or high level of transit service in the future to the North Vineyard Station community. An efficient high-quality transit service for the Plan Area will not, nor can not be built, if the Specific Plan does not provide an efficient transit oriented land use development design.

Land use impacts resulting from approval and implementation of a Specific Plan that is not in compliance with General Plan goals, objectives and policies are ***potentially significant and adverse***. However, potentially significant and adverse land use impacts identified in the EIR can be overridden if there are sufficient social and economic reasons for doing so.

Comment 21.8:

Page s 2.6 and 2.7, Schools, Libraries, parks and Open Space. References should be made to Elk Grove Unified's existing fee structure in which the project will participate. There should be library and park components to the fee developed for the plan area.

Response 21.8:

Comment noted.

Comment 21.9:

Page 2.8, Public Facilities Financing. The last paragraph states that the NVSSP

Financing Plan is expected to recommend funding mechanisms for all development projects, whether for the Preferred Plan, 10% alternative and 15% Alternative. The financing plan will recommend funding mechanisms for whichever plan is adopted by the Board and will provide information to determine if financing is feasible for alternatives.

Response 21.9:

Comment noted.

Comment 21.10:

Page 2.10, Traffic and Circulation. Cumulative No Project conditions refer to roadway segments for Excelsior, Elder Creek and Gerber Roads experiencing physical deficiencies based on substandard travel lane and shoulder widths. Other roadway segments experiencing cumulative no project increases in traffic would also result in physical deficience such as Florin Road, Bradshaw Road, portions of Elk Grove-Florin road, etc. These roadway segments should be listed also.

Response 21.10 (by Transportation Division):

In response to this and other transportation comments County Transportation Division staff (J. Clark) has provided responses to this comment and comments 21.11 through 21.16 that follow.

The segments of Florin Road, Bradshaw Road and Elk Grove-Florin Road identified in the comment were not included in the DEIR because they were assumed to be constructed to arterial or thoroughfare standards (page 8.20). The segments of Gerber Road, Elder Creek Road and Excelsior Road were assumed to not be improved as part of the base transportation network for the Cumulative Condition analysis. Thus, they would need some form of improvement to accommodate future traffic demands.

Comment 21.11:

Page 2.11, Significant & Unavoidable Traffic Impacts. Item 1, Bradshaw Road impact is a cumulative plus project impact. Existing plus project conditions do not result in this impact. Since the cumulative condition does not yet exist, stating that this project results in this significant and unavoidable impact is not accurate. It would be future approval of other projects that would result in this impact. Item 2 correctly states that the impact is a cumulative conditions impact

Response 21.11 (by Transportation Division):

The addition of the proposed project traffic to the Cumulative base volume resulted in the level of service on the segment of Bradshaw Road from Florin Road to Elder Creek Road going from LOS E to LOS F. This a significant impact according to the County of Sacramento traffic impact guidelines.

Comment 21.12:

Page 2.12, Transit System Mitigation Measures. Some mitigation measures listed are for roadways with very minimal project impact. Please include discussion of how the Capital Improvement Program will recognize this and divert fair share funding from these roadways to more viable and severely impacted facilities.

Response 21.12 (by Transportation Division):

Comment noted. The project does have a small impact to these facilities, but given the condition of facilities, the impacts are significant and appropriate mitigation identified.

Comment 21.13:

Page 2.13, Transit System Mitigation Measures TR-6, TR-7: Roadway widening to minimum width standards. These roadways are already below standards for rural arterials. Project fair share funding should be diverted to make other more impacted roadway improvements.

Response 21.13 (by Transportation Division):

While these facilities currently do not meet County standards; they can carry the current traffic demands. The addition of project traffic will exacerbate traffic conditions such that for reasons of public health, safety and welfare improvements will be needed to these facilities. The funding of the identified improvements will greatly improve public health, safety and welfare.

Comment 21.14: *(paraphrased)*

Page 2.13, Transit System Mitigation Measures TR-11 Calvine Road. The Calvine Road project is within the Elk Grove, West Vineyard Public Facilities Financing Plan, and also within the influence area of the concurrently processing Vineyard

Springs Comprehensive Plan. This project's fair share contribution should be diverted to other roadway improvements.

Response 21.14 (by Transportation Division):

The draft CIP for the North Vineyard Station Specific Plan identifies this mitigation as being 100% funded by other sources (Elk Grove, West Vineyard Public Facilities Plan and draft CIP for the Vineyard Springs Comprehensive Plan.

Comment 21.15:

Page 2.14, Transit System Mitigation Measure TR-15. Note that existing capacity conditions allow nearly 92% of the project to be built out before widening is required. Because this is a State Route, project fair share contributions may be diverted to other, more viable and impacted roadway projects. This comment applies to TR-12 and TR-13, intersection improvements.

Response 21.15 (by Transportation Division):

Neither Bradshaw Road or Florin Road is a state route. For this reason this comment may not be applicable.

Comment 21.16:

Page 2.15, Transit System Mitigation Measure TR-17. The EIR includes discussion of dual southbound left turn lanes, yet the measure requires only single left turn lanes north and south. Please clarify these requirements.

Response 21.16 (Traffic Consultants, Fehr & Peers & DERA):

Mitigation Measure TR-17 is Improvement EP-17 of the NVSSP traffic study prepared by Fehr and Peers. After subsequent review both DERA and Fehr & Peers staff realize that the proposed intersection improvements in the text do not match the lane configurations used in the level of service calculations. Mitigation Measure TR-17 in the EIR and Improve EP-17 (with new text in bold) should read as follows:

TR-17 Modify the Bradshaw Road/Gerber Road intersection to include the following lane configurations:

- Dual left turn lanes, ~~two~~ **one** through lanes, and a separate right turn lanes on the eastbound and westbound approaches; and

- One left turn lane, two through lanes, and a separate right-turn lane on the northbound and southbound approaches.

The provision of **two** southbound ~~dual left turn~~ **through** lanes **and a dual westbound left-turn lanes** will require widening of the ~~eastbound~~ **southbound** departure leg on ~~Gerber~~ **Bradshaw** Road to two lanes before merging to a single travel lane in each direction. The length and merging distance for these lanes shall be approved by Sacramento County Transportation Division staff.

The revised Mitigation Measure TR-17 has been incorporated in the FEIR Executive Summary, and in errata pages for the DEIR. In addition, pages 31 and 32 of the traffic analysis have been revised and are included in the Final Technical Appendices Volume III.

Comment 21.17:

Page 2.20, Hydrology and Flooding. The EIR introduces the Drainage Master Plan (DMP) for the North Vineyard Station Specific Plan as being developed by the proponents. It also states that the DMP proposes construction of flood control and stormwater quality detention basins, within and downstream of the Specific Plan area. This statement implies that the project proponents recommend downstream detention facilities, which is not the case. The recommendation for downstream detention was inserted by the County Water Resources Division and should be so characterized whenever it is referenced throughout the EIR.

Response 21.17 (by DERA):

The characterization of how the draft DMP document was prepared does not change the environmental impact analysis of the DMP submitted to DERA for review. Given that the DMP must be to the satisfaction of the WRD, thereDMP proposes construction of flood control and stormwater quality detention basins within and downstream of the Specific Plan Area. Your concern with semantics is noted.

Response 21.17 (by Water Resources Division, about Basin E20):

In response to this and other drainage comments County Water Resources Division staff (R. Hettick) has provided this additional response with regard to the DMP and the downstream detention basin as follows:

Removal of all references to Basin E20 in the NVSSP Drainage Master Plan (DMP) and DEIR are not feasible because:

- The NVSSP DMP needs to comply with the regional UNET Analysis for the Drainage Master Plan for Elder and Gerber Creek which identifies facilities downstream of NVSSP as needed for SPA development conditions.

- The WRD requires that the plans for the downstream channel and detention facility be included for approval of the final NVSSP DMP.

Basin E-20 is needed as part of the NVSSP project because:

- A large basin is needed downstream of the confluence to provide system reliability. On-site basins alone do not provide this reliability.

- E-20 provides system and cost efficiency because of its proximity downstream of the confluence.

- Basin E20 is needed in the stand-alone condition to mitigate stage increases downstream of the City/County boundary.

- The WRD envisions an eventual stoppage of the Laguna Creek inter-basin transfer, however this large project may take substantial time to complete. In that case, significant development constraints would be attached to NVS properties, which may be mitigated with detention at Basin E20.

Comment 21.18a:

Page 2.21, Hydrology and Flooding, last paragraph. This paragraph states that any urban development within the NVSSP area will necessitate the construction of channel improvements downstream. While this statement is consistent with general statements in the DMP, the DMP also indicates that small isolated areas may be able to develop by installing temporary detention and pumping to mitigate for increased runoff."

Response 21.18a (by Water Resources Division):

Change the text of the last paragraph of the DEIR page 2.21 to read:

> "Urban development within the NVSSP area will necessitate the construction of channels improvements . . ."

Add to the end of that paragraph:

> "At the discretion of the WRD, it is possible that a limited upland area in the NVSSP might be developed using local temporary detention and pumping to drain a small development."

Response 21.18a (DERA):

As requested by County WRD staff, the subject paragraph has been changed as follows (see Errata section pages 2.21 and 2.22):

> ~~Any urban~~ **Urban** development within the NVSSP area will necessitate the construction of channel improvements from the development area downstream to the existing improved channel near Millbrook Circle (approximately ½ mile west of Elk Grove-Florin Road) in order to provide adequate drainage service to the development area. However, it is possible that certain upstream ultimate drainage improvements may not be implemented for many years. Therefore, hydrologic and hydraulic analyses were conducted to determine whether implementation of the proposed NVSSP DMP improvements under interim conditions, absent implementation of ultimate upstream flood control improvements, would provide adequate urban flood protection to the proposed Specific Plan development without adversely impacting downstream areas. These interim analyses determined that there would be increased 100-year water surface elevations and increased out-of-bank flooding in downstream areas along Elder Creek, resulting in potentially significant flooding impacts, unless off-site Detention Basin E20 (downstream of Elk Grove-Florin Road) is constructed. These impacts would occur under either full (stand alone) or phased development of the proposed NVSSP land uses. The County WRD indicates that construction of Basin E20 should occur with the initial phases of the NVSSP construction. **At the discretion of the WRD, it is possible that a limited upland area in the NVSSP might be developed using local temporary detention and pumping to drain a small development.**

Please note that this paragraph is now contained in the Executive Summary of the FEIR.

Comment 21.18b:

This paragraph states that the NVSSP DMP determined that there would be increased 100 year water surface elevations and increased out-of-bank flooding in downstream areas along Elder Creek unless off-site Detention basin E20 is constructed, which is inaccurate. The DMP states that alternatives such as constructing and optimizing the on-site detention facilities reduces the 100 year flows to existing conditions downstream. (within 10-15 cubic feet per second, or less than 1% difference) Studies completed for the on-site basins could be further reined during actual design or subsequent master plan refinement to reduce the flows even lower."

Response 21.18b (by Water Resources Division):

The UNET Analysis (on which the NVSSP is based) determined there would be a 0.5 foot rise in water surface elevation (stage) downstream of the City Limit in the stand-alone condition without construction of Basin E20. Because of the more rapid conveyance of improved channels, reducing the 100-year flows to existing at the City Limit does not guarantee a reduction of stage downstream of the City Limit (see "Flow versus Stage" discussion below). The NVSSP DMP did not study the effects of the project downstream of the City Limit.

Comment 21.18c:

Basin E20 is only needed if optimization of the on-site detention basins is not done. It would be foolish to construct on site detention basins without optimizing their performance with minor changes in weir elevation Studies done by an outside consultant for the County of Sacramento Water Resources Division indicated that the flows downstream from the project [without Basin E20] *are actually less than existing conditions. There is a statement that the stage, or water surface elevation can be higher. Please provide information on how the water surface elevation can increase when the flows decrease. The EIR should be revised to reference the statement that Basin E-20 is required as a statement by Sacramento County Water Resources, not by the authors of the DMP technical analysis.*

For information on downstream water surface elevations please see the Flow versus

Stage discussion below. Regarding the "optimization" of on-site detention as a replacement for Basin E20: The UNET model provides a good weir design, with stepped weirs for more storm flexibility. Further "tightening" of weir design to meet constraints at the City make a system even more confined to the characteristics of one specific design storm. A flood control system that is "tuned" closely to one design storm (i.e. dependent on small changes to the weir elevations), with results just slightly meeting the criteria at the City limit may not provide the factor of safety required for the watershed.

It is the WRD's understanding that the UNET technical analysis does require and recommend Basin E20 (see attached **stage hydrographs prepared** by Doug Hamilton, author of the UNET study). The NVSSP is a significant percentage of the drainage basin, located in a critical area at the confluence of the two creeks and close to the downstream end where performance is most critical. The author of the UNET study indicates that for overall system reliability and operational flexibility, detention Basin E20 is a necessary component.

Flow versus Stage:

The flow and stage values in this hydraulic system are non-linear, i.e. they do not rise and fall in unison. Thus, a lower flow does not guarantee a lower stage. Because of the complex nature of this system, the UNET (one-dimensional unsteady flow) model was used for analysis. **The existing, stand-alone (w/ and w/o E20), and ultimate condition UNET models were provided to MacKay & Somps.**

Using these models to compare the downstream water surface elevations of the existing and stand-alone (without Basin E20) conditions, clearly shows a stage increase between Center Parkway and Franklin Blvd. The point of maximum increase (0.5 feet) occurs at cross section No. 0.835. At this cross section the **stand-alone maximum stage and maximum flow do not occur at the same time in the storm** (see Plates UNET-A and UNET-B, the stage and flow hydrographs for cross section 0.835). The stand-alone (without E20) stage peaks at approximately hour 12:00, while the flow peaks at approximately hour 18:00.

The more efficient channelization in the stand-alone condition results in an **earlier** peak stage value during the design storm (note the earlier "single-peak" stage hydrograph for the stand-alone without E20 condition compared to the "three-crested" stage curve for the existing condition).

It is true the stand alone without E20 flow immediately downstream of the NVS area

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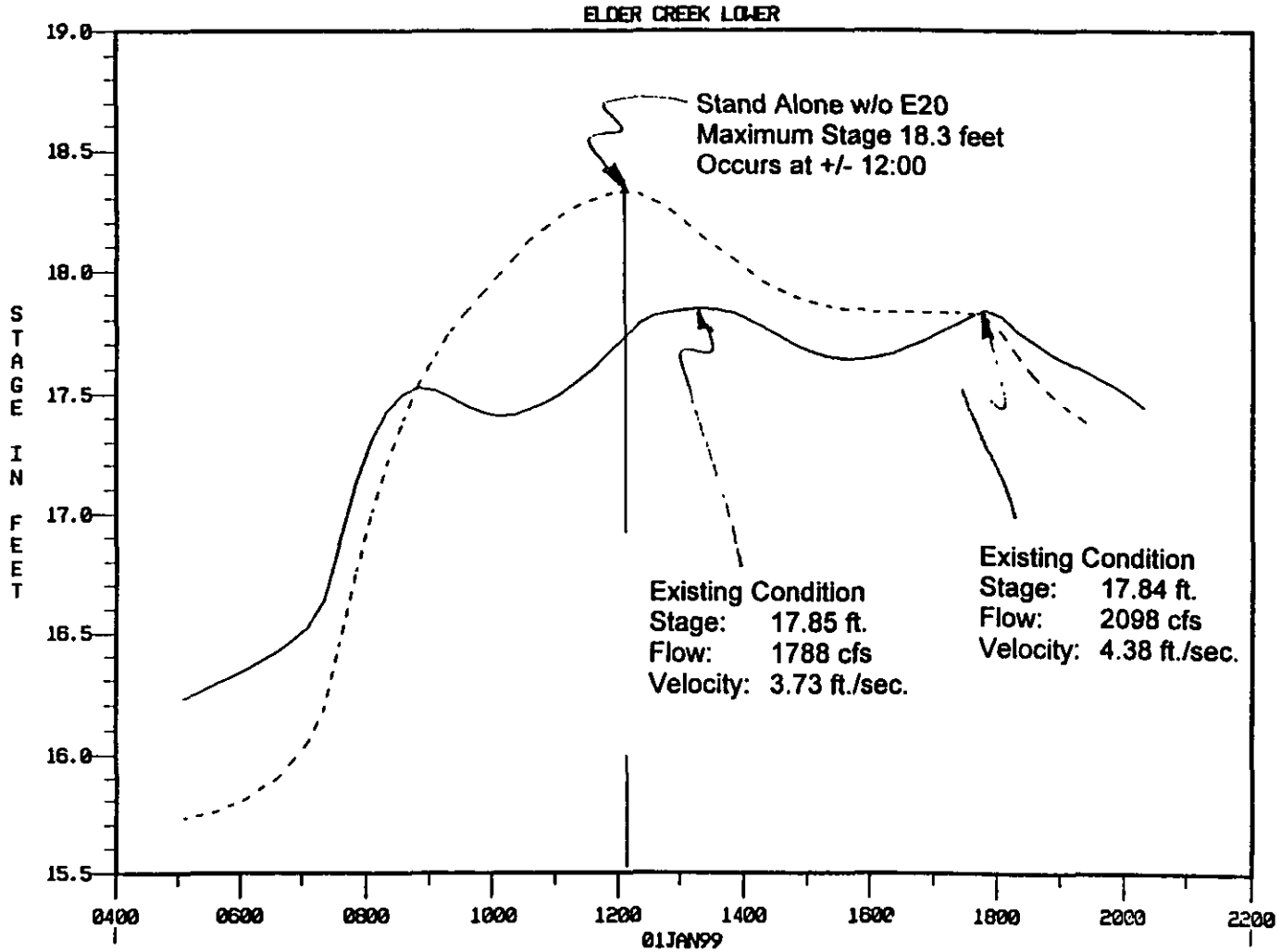


AT RMILE .835 EXISTING STAGE
AT RMILE .835 ST-ALONE W STAGE

Plate UNET-A
NVSSP EIR(93-0238)

Attachment A
STAGE Hydrograph
Cross-section 0.835

6.76a

is slightly lower than existing (see Plate UNET-C), with an accompanying slightly lower stage (see Plate UNET-D). However, the stand-alone peak flow exits the NVSSP at an earlier point in the storm, **this bringing the water downstream earlier to coincide with local peak run-off. The timing difference is the significant contributing factor to the stage increase.**

Please note that in the existing condition at cross-section 0.835, two nearly identical maximum stages are reached, one at about 13:30 and the second at about 18:00 (see Plate UNET-A). The second stage peak occurs coincident with the time of maximum flow. This demonstrates the non-linear nature of this system that in the Existing Condition the same stage value occurs at different times with significantly different flows.

This is due to different flow velocities at different times. A higher volume of water may pass through the same cross sectional area of flow (same stage) if the velocity increases. The calculation of the flow is defined as the velocity of the water times the cross sectional area of the flow:

Flow (feet^3/sec.) = Velocity (feet/sec.) x Cross-sectional Area (feet^2)

Comment 21.19:

Page 2.24 and 2.25, Mitigation Measures HY-1 and HY-2. These are not mitigation measures. If the Plan is revised prior to its approval, then there are no impacts to mitigate and thus, these mitigation measures are not required.

Response 21.19 (by Water Resources Division):

Please see "Comments Regarding Basin E-20" above in Response 21.17.

Response 21.19 (DERA):

Mitigation Measures HY-1 and HY-2 are institutional, or policy, mitigation measures which must be complied with before the proposed project can be approved with assurance that hydrological/flooding impacts will be less than significant. The approved land use plan and final Financing Plan must comply with these mitigation measures.

It is acknowledged that these policy mitigation measures must be accomplished as direct changes to the NVS Specific Plan document (text, tables, exhibits, etc.) and

Attachment D

STAGE Hydrograph
Downstream Boundary of the SPA

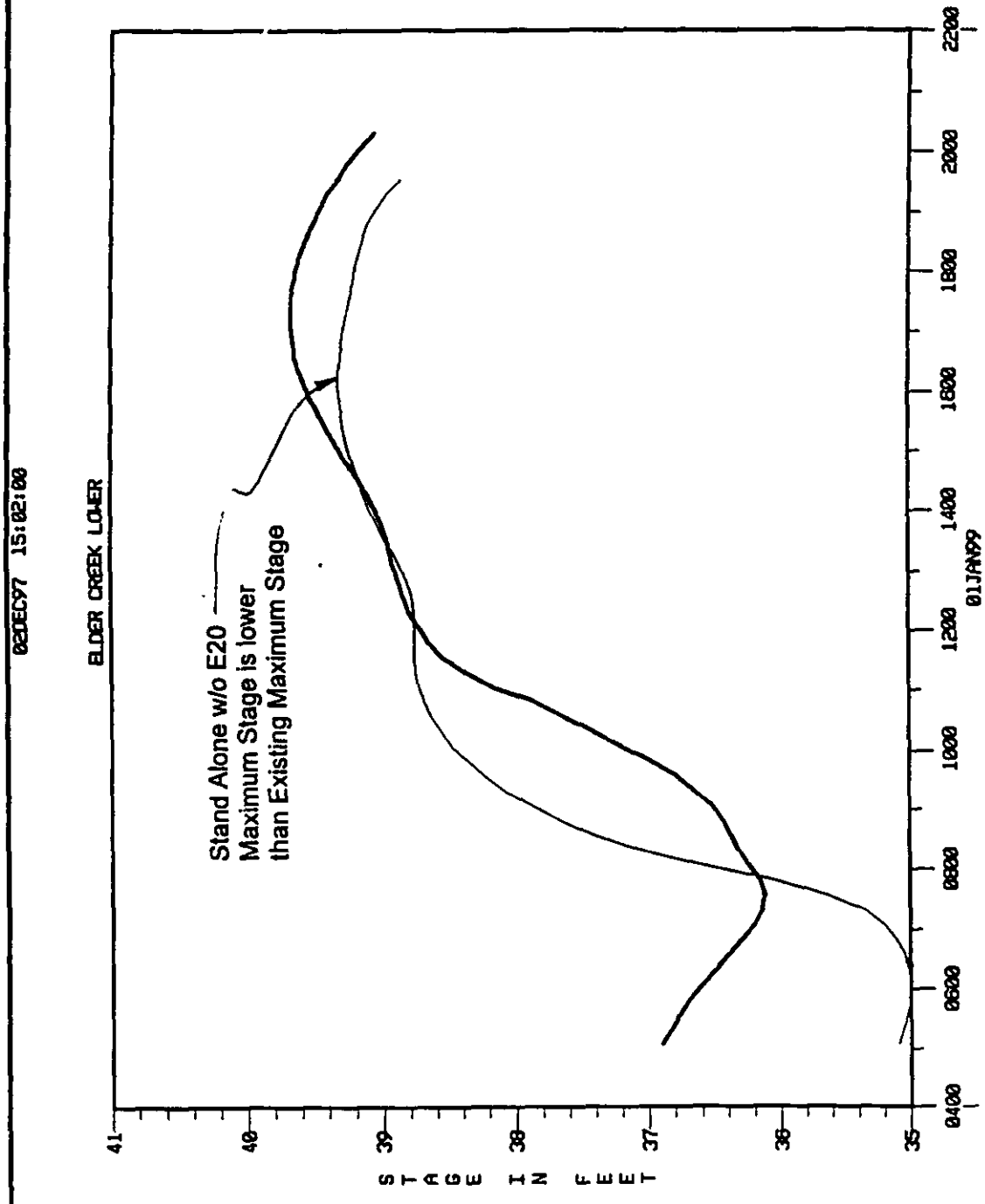


Plate UNET-D
NVSSP EIR(93-0238)

related Financing Strategy/CIP documents in order to implement the measures. Once the project documents are revised, the "policy" mitigation measures will effectively mitigated the identified significant impacts; thus no Mitigation Monitoring and Reporting Program will be required.

Please see the Mitigation Monitoring and Reporting Program section in Chapter 2 of the FEIR for an expanded discussion about compliance with identified "policy" mitigation measures.

Comment 21.20:

Page 2.24 and 2.25, Mitigating Measure HY-3. Reference to requirements for construction of Basin E20 should not be to the NVSSP DMP, but rather a separate recommendation by the County Water Resources Staff. (See Comment 17 above). Delete the term "..., including construction of Detention Basin E20 downstream of the Specific Plan area,". If necessary, append this same statement to the end of the mitigation measure with a reference to requirements by Sacramento County Water Resources Division.

It is recommended that specific references to Basin E20 be eliminated. No other specific improvement is referenced in any other mitigation measure. The language in the second paragraph of this mitigation measure includes the correct approach, by identifying flexibility to "demonstrate that phased improvements will provide adequate urban flood protection to the proposed on-site development, and will not increase flood risks in downstream areas." This same flexibility should be provided with the issue of Basin E20.

Response 21.20 (by Water Resources Division & DERA):

Please see "Comments Regarding Basin E-20" above in Response 21.17.

Comment 21.21:

Page 2.24, second paragraph. Is mitigation for non-oak native trees required under the County's tree ordinance? If not this obligation should be deleted.

Response 21.21:

Mitigation for non-oak native trees are currently required in order to comply with the County General Plan Policy CO-131 which states:

Policy CO-131.

Native trees other than oaks, which cannot be protected shall be replaced with in-kind species in accordance with established tree planting specifications, the combined diameter of which shall equal the combined diameter of the trees removed. In addition, with respect to oaks, a provision for a comparable on-site area for the propagation of oak trees may substitute for replacement tree planting requirements at the discretion of the County Tree Coordinator when removal of a mature oak tree is necessary in accordance with consistent policy.

The County's tree ordinance is currently undergoing revision in order to address a number of issues including compliance with the above General Plan Policy.

Comment 21.22:

Pages 2.24 and 2.25, Mitigation Measures HY-6 and HY-7. Recommend elimination of specific reference to Basin E20. It is the only ultimate project facility that is specifically referenced. Listing a general solultion for the Gerber Creek overflow condition is consistent with the DMP.

Response 21.22 (by Water Resources Division & DERA):

Please see Response 21.17 regarding Basin E-20.

Comment 21.23:

Page 2.29, Water Supply. Phasing of proposed development. The planned widening of Elk Grove Florin Road from Calvine to Gerber will include extension of a twelve inch (12") diameter Zone 40 Transmission main to the intersection of Gerber Road. This facility will be available for initial development connection as a primary or secondary source of supply. This facility was not mentioned in the original Water Supply and Distribution Master Plan.

Response 21.23:

Comment noted.

Comment 21.24:

Page 2.36, second full paragraph. Reference should be made to the pending agreement between the County, DFG and the Nature Conservancy regarding County adoption of a Swainson Hawk mitigation fee.

Response 21.24:

Please note that the Swainson's hawk foraging habitat mitigation measure BR-4 has been revised in the Mitigation Measures section as follows:

BR-4. ~~To mitigate for the potential loss of 1600± acres of Swainson's hawk foraging habitat, implement one of the following alternatives:~~ **Prior to the approval of Improvement Plans or Building Permits, whichever occurs first, implement one of the following options to mitigate for the loss of 1,595± acres of Swainson's hawk foraging habitat:**

a. The project proponent shall preserve 0.50 acre of similar habitat for each acre lost within a 10-mile radius of the project site. This land shall be protected through fee title or conservation easement (acceptable to the California Department of Fish and Game);

b. The project proponent shall enter in the formal consultation with the California Department of Fish and Game pursuant to ~~the Fish and Game Code~~, Section 2081 **of the California Fish and Game Code.**. A California Endangered Species Act (CESA) Memorandum of Understanding (MOU) and Management Agreement shall be completed prior to issuance of any building permits for the site.

c. **The project proponent shall submit payment of a Swainson's hawk impact mitigation fee per acre impacted to the Department of Planning and Community Development in the amount as set forth in Chapter 16.130 of the Sacramento County Code as such may be amended from time to time and to the extent that said Chapter remains in effect.**

~~e~~d. Should the County Board of Supervisors adopt a Swainson's hawk mitigation policy/program (which may include a mitigation fee) ~~payable prior to issuance of building permits)~~ prior to the

implementation of one of the measures above, the project proponent may be subject to that program instead.

<u>Note</u>: Actual habitat loss will occur when rezones and related land use entitlements are granted. Implementation of this mitigation measure will occur on a project -by-project basis with each rezone application.

Comment 21.25:

Page Section 3, Alternatives. This section discusses the No Project Alternative and an Increased Density/TOD/Wetlands Preserve Alternative. This section should also discuss the three other project alternatives that have been prepared: the 10% Density Reduction Alternative, 15% Density Reduction Alternative, and the Modified Core Alterative.

Response 21.25:

As discussed in the DEIR Project Description (p. 4.1-4.4), the Preferred Plan and the Proposed Alternatives are considered part of the project. These Proposed Alternatives were given equal level environmental analysis throughout the DEIR. Section 3 of the DEIR addresses CEQA Alternatives that were not part of the proposed project.

Comment 21.26: *(paraphrased per 9/9/97 & 10/21/97 letters to DERA)*

Page 3.2, Increased Density/TOD/Wetlands Preserve Alternative. The description of the Increased Density/TOD/Wetlands Preserve Alternative as the environmentally superior alternative does not include a description of technical analyses. Please include a land use exhibit and corresponding table of uses (with acreages and unit counts) to describe the Increased Density/TOD/Wetlands Preserve Alternative.

Response 21.26:

The Increased Density/TOD/Wetland Preserve Alternative is based on the Technical Studies submitted as part of the environmental impact analysis for the proposed project. In order to help reviewers visualize this alternative a conceptual land use exhibit (Plate PD-EE) has been developed and included in the FEIR "Project Description and Alternatives" section.

Comment 21.27:

Page 3.3, Increased Density/TOD/Wetlands Preserve Alternative, first paragraph. Reference should be made to the specific holding capacity for the plan area assumed in the General Plan.

Response 21.27:

The General Plan holding capacity assumed for the Plan area is 7,200± dwelling unit, according to County Planning Department staff (Singh). The Increased Density alternative envisions a holding capacity equal to the Preferred Plan at 6,339 dwelling units.

Comment 21.28:

Page4.4, Table PD-1. Confirm land use acreage for the preferred plan and alternatives. Table PD-1 is not consistent with information contained on page 5.26.

Response 21.28:

Page 5.26 contains no acreage information to compare with page 4.4, Table PD-1.

Comment 21.29:

Page 4.6, Table PD-2. The acreage shown for the County General Plan Existing scenario add to a number greater than the project acreage of 1,590. Please verify these acreage.

Response 21.29:

Please see Response 21.3.

Comment 21.30:

Page 4.8, Specific Plan Document. Please note that the Draft EIR is based on the public review draft of the North Vineyard Station Specific Plan dated May 28, 1997

Response 21.30:

Comment acknowledged. Reference to the May 28, 1997 version of the Specific Plan

has been made in the Project Description section of this FEIR.

Comment 21.31:

Page 4.9 Specific Plan technical documentation. Technical analyses prepared for Basin E20, as well as the project's groundwater study should be included on the list of technical documentation.

Response 21.31:

The list of technical documentation has been revised to include the Basin E20 technical analyses and the groundwater study as noted below:

1. Arborist Reports, Tree Care, Inc.
2. Cultural Resource Assessment, Peak & Associates.
3. Acoustical Analysis, Brown-Buntin Associates, Inc.
4. Transportation Analysis, Fehr & Peers Associates.
5. Preliminary Geotechnical Engineering Report, Wallace-Kuhl & Associates.
6. Toxics/Site Assessment, Wallace-Kuhl & Associates.
7. Elder/Gerber Drainage Study, MacKay & Somps.
8. Water Master Plan, West Yost & Associates (for County Water Resources).
9. Sanitary Sewer Study, MacKay & Somps.
10. Wetland Delineation and Mitigation Plan, Sugnet & Associates.
11. Determinate Invertebrate Surveys, Sugnet & Associates.
12. Special Status Bird Surveys, Sugnet & Associates.
13. Special Status Reptile Surveys, Sugnet & Associates.
14. Special Status Amphibian Surveys, Sugnet & Associates.
15. **Basin E20 technical analyses**
16. **Evaluation of Groundwater Impacts, County WRD**

Comment 21.32:

Page 5.3, Preferred Specific Plan. Similar to Comment 4 above, co-sponsors should be defined as County Staff, CAC and project proponents.

Response 21.32:

Comment noted.

Comment 21.33:

Page 5.10, second paragraph. Discussion requires greater context regarding placement of the core area on Gerber Road. The North Vineyard Station CAC's rationale for locating the core area adjacent to Gerber Road was in response to urbanization planned south of Gerber Road, not north of Florin Road.

Response 21.33:

Comment noted. This is a planning matter, not an EIR issue.

Comment 21.34:

Page 5.11, third paragraph. The at-grade crossing of the railroad at Waterman Road will require approval by the Public Utilities Commission. The EIR should discuss the necessary approval by the PUC.

Response 21.34:

Comment noted. The Introduction section of the DEIR under "Intended Uses of the EIR" acknowledges that the EIR by other responsible agencies. It is the PUC's prerogative to determine the adequacy of the document for their purposes.

Comment 21.35:

Page 5.14, fourth paragraph. TOD areas identified on the General Plan Land Use Diagram were represented by planning staff as illustrative of TOD opportunities and not intended to be specific designation for the property identified This discussion is contrary to that representation. Moreover, the plan area, when designated by the Board as Urban Development Area, did not have a land plan adopted.

Response 21.35:

See Response 21.7.

Comment 21.36:

Page 5.15, second full paragraph. Again, TOD designations were intended to indicate opportunities for TOD locations and not an actual designation of the affected area as a TOD. Th language is inconsistent with that intention.

Response 21.36:

See Response 21.7.

Comment 21.37:

Page 5.19, top paragraph. The language "...there does not appear to be any clear rationale for not identifying and designating a TOD site in the Plan Area..." is contrary to the consensus plan developed by the CAC, staff and property owners. Additionally, there has been no demonstration that adequate transit facilities will ever become available to the plan area to justify the density and intensity of TOD development.

Response 21.37:

See Response 21.7.

Comment 21.38:

Page 5.23, multi-family discussion. The Draft indicates that it is highly unlikely that the Plan will yield its expected share of multi-family units. The plan includes 39 acres designated for multi-family units, which is expected to yield 637 units. The 39 acres planned for multi-family uses exceeds the County's target (Table LU-4) range of 31-35 acres and the planned unit yield of 637 is within the County's range of 620 to 700 acres. The plan also includes 28.6 acres of commercial land use, which includes SC and LC zoned land which may be used for multi-family units. The conclusion that the project will not yield its expected share of multi-family units is subjective and without merit.

Response 21.38:

Please refer to pages 5.22 and 5.23 for explanation on the potential shortfall of multi-family units in the Plan area.

Comment 21.39:

Page 5.24, second full paragraph. See comment #33 above related to core relocation discussion.

Response 21.39:

Comment noted. This is a planning matter, not an EIR issue.

Comment 21.40:

Page 6.4, top paragraph. The area to be services by Sation 52 will likely serve a greater area than just the plan area. As such, the cost of the station's improvement and equipping should not be borne by this project alone.

Response 21.40:

Comment noted. This is a Financing Plan issue.

Comment 21.41:

Page 11.2, top paragraph. The objectives stated clearly identify an intent to reduce downstream existing flows and their related impacts on existing developed areas both within the County and the City of Sacramento. Subsequent discussion of the master plan facilities to achieve these goals does not mention funding sources other than fees or financing exacted from new development. Is it the stated intent of the Elder/Gerber Creeks Basin Master Drainage Plan to have new development fund this benefit to existing development?"

Response 21.41 (by Water Resources Division):

The intent of the Elder and Gerber Creeks DMP is to minimize new facilities effects on the downstream neighbors to a non-damaging level. The WRD does not object to changing the DEIR page 11.2 text to read:

> " . . . preferred flood control alternative is no greater than the existing condition peak flow on Elder Creek at the City/County boundary."

Please note: Reduction of the 100-year flow at the City Limit by a few cfs does not constitute a tangible benefit to existing development since there is no significant decrease in stage.

Comment 21.42:

Page 11.2, paragraph 4. In Chapter 9, page 9.3 of the Elder and Gerber Creeks Technical Appendix: UNET Analysis (January, 1997), prepared by Douglas Hamilton, P.E, for the County of Sacrament, the statement is made that Stand Alone Conditions 100-year event with the Laguna Creek over spill results in a decreased peak flow at the City boundary without basin E-20.

However, the study also finds a stage increase of approximately 0.5 feet downstream of the City boundary. The County has not provided information supporting the increased stage with decreased flow or its significance. The County's Elder/Gerber Creek DMP objective No. 1 that has been met. Information explaining the stage increase and its significance has not been provided by County WRD.

Comment 21.42 (by Water Resources Division):

Please see Response 21.18c Flow versus Stage discussion.

Comment 21.43:

Page 11.6, paragraph 3. Tables HY-3 and HY-4 illustrate several alternatives to reduce Stand Alone Condition peak flows at the City limit to at or below existing levels. Stand Alone Case 2 achieves this objective without construction of Basin E20 through optimization of the weir elevations for Basins G41 and E24A. The last sentence of this paragraph in the DEIR should be revised to the following:

> *Tables HY-3 and HY-4 illustrate that construction of certain ultimate facilities would be needed to reduce stand alone peak flows at the City limit to existing levels.*

Response 21.43 (by Water Resources Division):

Please see Response 21.17 regarding Basin E-20.

Comment 21.44:

Page 11.21, paragraph 3. As discussed in the NVSSP DMP, an extreme worst case Stand Alone Conditions scenario was prepared. The results of this analysis show that the drainage facilities proposed in the NVSSP Preferred Drainage Plan without the construction of Basin E20 adequately mitigate for the project's impacts as well as impacts associated with outside regional influences beyond the scope of this project's DMP. Please expand the discussion to include this information."

Response 21.44 (by Water Resources Division):

The stand-alone facilities without basin E-20 *do* mitigate for the flow impacts at the City Limit, *but do not* mitigate for the stage increases downstream of the City Limit. In determining acceptable stage, the WRD will consider stages at or below existing as non-damaging or, studies showing that higher than existing stages are non-damaging.

However, the NVSSP DMP does not prove either case. In addition, Basin E20 provides system reliability to the NVSSP area which is a significant percentage of the region, and due to it's proximity to the downstream area and location at the confluence of the two creeks, provides an even greater percentage of the need for Basin E20.

(Also see Response 21.17 regarding Basin E20.)

Comment 21.45:

Page 11.22, third paragraph. This paragraph identifies a low dam constructed across the flow path which results in upstream water surface elevations which cause overland flow diversion outside the natural creek channel. General Plan Policy CO-104 requires removal of unauthorized fill in the 100-year floodplain at the property owners expense. Removal of this fill would possibly reduce the temporary mitigation which will otherwise be necessary. Please include discussion consistent with County policy that requires removal of this fill in the floodplain.

Response 21.45 (by Water Resources Division):

Page 71 of the Conservation Element of the County of Sacramento General Plan (December 15, 1993, revised 5/2/97) states *"The policies and programs in this section apply to the designated Urban Stream Corridors on the Open Space*

Preservation Strategy Map." Gerber Creek is not identified as a designated Urban Stream on the map.

The WRD does have general policies against fill in the floodplain regarding new development (Sacramento County Floodplain Management Ordinance, December 23, 1993). This ordinance was not in place at the time the dam was constructed and does not address retroactive grievance against existing fill in the floodplain.

The WRD does not hold any drainage easements for the parcel in question and does not get involved in drainage disputes between neighbors. Except in cases that threaten health and safety, the WRD primarily enforces floodplain policies by withholding improvement permits. That is, the improvement permits or lot split requests for a parcel would be held until the floodplain issues are resolved.

Comment 21.46:

Page 11.27, paragraph 4, No. 3. Either construction of Basin E20 or optimization of the weir elevations of Basins G41 and E24A will eliminate or reduce the downstream impacts to less than significant status. Throughout other areas of text of this DEIR, the approach utilizing optimization of the weir elevations for Basins G41 and E24A is not stated as a viable alternative to construction of off site Basin E20. This study has proven to mitigate impacts to existing conditions and should be included in the discussion.

Response 21.46 (by Water Resources Division):

Please see Response 21.18c.

Comment 21.47:

Page 11.28, Supplemental WRD Conclusion and paragraph preceding. Please provide the information and technical analysis that lead to conclusions regarding the need for Basin E20. On-site basin E24A is a large basin located at the confluence of Elder and Gerber Creek. This basin provides flexibility in the system for timing variability on either creek in the ultimate and interim conditions.

Response 21.47 (by Water Resources Division):

The WRD does not concur with the conclusion that Basin E24A (located upstream of the confluence on the lesser of the two creeks) provides the same level of protection

as Basin E20. Please see the "Comments Regarding Basin E-20" above The technical information regarding the need for basin E20 is found in the UNET Analysis and is available for review in the NVSSP Environmental Impact Report Technical Appendices Volume II. In addition see Plate UNET-E, the supplemental letter by Doug Hamilton. (Also see response to comment 21.17 regarding Basin E20.)

Comment 21.48:

Page 11.29 Phased Development with Temporary Pumping Facilities. Reference is made to statements in the Executive Summary and Mitigation Measures, which draw conflicting conclusions that the facts presented in this section. (page 2.21) This section indicates that limited initial development could occur with temporary detention basins and pumping. Modify the Executive Summary to be consistent with findings of the DEIR text and the technical studies

Response 21.48 (by Water Resources Division):

Please see response 21.18a.

Comment 21.49:

Page 11.37, paragraph 2. The Stand Alone Condition Case 2 provides an alternative which reduces impacts to a less than significant level without the construction of Detention Basin E20. The wording "including the construction of Detention Basin E20" should be deleted."

Response 21.49 (by Water Resources Division):

Please see Response 21.17 regarding Basin E-20.

Comment 21.50:

Page 11.45, Mitigation Measures HY-6 and HY-7. In these mitigation measures, the wording, "including the construction of Detention Basin E20" should be deleted."

Response 21.50 (by Water Resources Division):

Please see Response 21.17 regarding Basin E-20.

DOUGLAS HAMILTON, P.E.
18101 VON KARMAN AVENUE, SUITE 350
IRVINE, CA 92612
U.S.A.

TELEPHONE (714) 251-6565 FACSIMILE (714) 251-6592

Plate UNET-E.1
NVSSP EIR(93-0238)

January 16, 1998

MEMORANDUM

To: Terri Wegener
Water Resources Division
Department of Public Works
County of Sacramento
827 Seventh Street, Room 301
Sacramento, CA 95814

From: Douglas Hamilton

Subject: **Drainage Masterplan on Elder and Gerber Creeks.**

This memorandum summarizes my review of the final draft of the Drainage Master Plan (DMP) for the North Vineyard Station Specific Plan (NVSSP). The objectives of the DMP are:

1. The 100-year peak discharge for ultimate land use conditions with the preferred flood control alternative is less than for the existing condition peak flow on Elder Creek at the City-County boundary.

2. The maximum water surface in Lower Elder Creek remains below minimum bank elevation for the 100-year event with ultimate land use conditions and the preferred flood control alternative.

3. The adopted flood control alternative achieves the above objectives in a flexible and reliable manner.

One of the results of the Analysis of Alternatives in Chapter 7 of the Technical Appendix was that flows in Elder Creek affect the stage in the lower part of Gerber Creek. This means that the elevation of water in this part of Gerber Creek is determined by two things: The amount of water flowing through Gerber Creek, and how floods occur on Elder Creek.

Plate UNET-E.2
NVSSP EIR(93-0238)

The proposed location of detention basin E-24A is on Gerber Creek just upstream of the confluence with Elder Creek. For this basin to function reliably during a real flood, the relationship between the peak stage on Elder Creek and the peak flow on Gerber Creek will have to be similar to that for the hypothetical design event.

Basin E-20 is proposed to be located on Elder Creek downstream of the confluence with Gerber Creek. The elevation of water in this part of Elder Creek is basically determined by one thing: The total flow in the creek at any given time. For basin E-20 to function reliably during floods, we need only a method to convert from flow to stage. The relative timing of the upstream stage hydrographs does not affect the function of a basin located downstream of the confluence.

Even though we have done extensive analysis of floods, impacts, and mitigation measures; and that we can show a detention basin located at the concern area on Gerber Creek can still partially achieve the objectives of the DMP, I believe that the superior location is at site E-20. Because basin E-20 depends on the existence of only one condition, rather than two conditions in order to operate, it is more likely to achieve its intended function during real floods regardless of whether these floods occur during existing, stand-alone, or ultimate land-use periods.

Douglas Hamilton, P.E.

Comment 21.51:

Page 14.5, Wetland Acreage, Table BR-2. Please revise Table BR-2 to reflect wetland acreage within participant and non-participant properties, consistent with Comment 2 above.

Response 21.51:

Please see Response 21.2.

Comment 21.52:

Page 14.37, Mitigation Measure BR-2, On-Site Wetland Preserve. If all impacts are mitigated on-site, the acreage required for mitigation will be significantly less that 200 acres. Please include justification for requiring a mitigation area of 200 acres.

Response 21.52:

Please read pages 14.25 and 14.26 of the DEIR.

Comment 21.53:

Page 14.28, Trees. The Draft EIR states that 48 trees exist within participating properties. Please revise this section to reflect the change in participating ownerships. Also, see comment 57 related to arborists reports.

Response 21.53:

See Response 21.2.

Comment 21.54:

Page 16.4, Technical Study/Site Assessment. Please revise this section to reflect the Environmental Site Assessment dated March 1996 (see comment 58 below).

Response 21.54:

The DEIR discussion entitled "Technical Study/Site Assessment" was prepared based on the December 22, 1995 report. The revised assessment dated March 1996 had not yet been provided to DERA prior to the release of the DEIR. The information

contained in the revised report raises no new or substantive issues. The revised assessment has been incorporated into the Final Technical Appendices Volume II.

Comment 21.55:

Page 16.26, Required Site Reconnaissance. The last paragraph on the Page is confusing. The Specific Plan does not recommend soil sampling and testing. The environmental site assessment includes recommendations for these properties.

Response 21.55:

Because the NVSSP environmental site assessment includes recommendation for soil sampling of these properties, the Specific Plan could and should flag these properties for such review at the earliest stages of site development. As discussed on page 16.31, these institutional or policy mitigation measures should be incorporated into either the NVSSP Policy document and/or the proposed Public Review Draft Specific Plan document text.

As with the County General Plan, or various Community Plans, the proposed Specific Plan could include a new element, or chapter/section, that outlines how hazardous materials issues for the plan area are going to be addressed during the Specific Plan application/development review process. Another option would be to include this issue in the proposed Specific Plan document implementation section. The revised text should at a minimum note all properties that will require a "site reconnaissance" or preliminary site assessment as part of their development application submittal to the Planning Department.

Comment 21.56:

Pages 16.26, 16.29, and 16.30. Please clarify the addresses of the properties for listed clean up.

Response 21.56:

The addresses and assessor parcel numbers for the properties listed for clean up came from the December 22, 1995 draft Preliminary Phase I Environmental Site Assessment prepared by Wallace-Kuhl & Associates. Where the consultant provided no address in his report, staff noted the block number range adjacent to the property and included the question marks because the exact street number was with question marks were simply intended to estimate the approximate range of the address number

(ie. "92??" meant the address is probably in the 9200 range.)

Comment 21.57:

Technical Appendix D, Arborist Report. The arborist reports in the technical appendix include data for properties which are no longer considered participation property owners. For clarification, please use the enclosed tree summary as an inventory of trees located on participating properties.

Response 21.57:

Comment noted. The arborist's evaluation of the trees is unaffected by changes in participating property owners. However, the summary and inventory of trees located on current participating properties has been included in the FEIR project description.

Comment 21.58:

Technical Appendix K, Hazardous Materials Assessment, also known as Environmental Site Assessment. The Environmental Site Assessment technical document, prepared by Wallace-Kuhl & Associates, that is included in Appendix was superseded by the revised document dated March 1996. Please include the most current version of this document in the Technical Appendix.

Response 21.58:

The March 1996 Hazardous Materials Assessment has been included as Appendix K of the Final Technical Appendices Volume II.

Comment 21.59:

Technical Appendix and throughout EIR. A Geotechnical Engineering Report was prepared for the project by Wallace-Kuhl & Associates (dated May 31, 1995) and submitted to County Planning and DERA for use in preparing the Draft EIR. In formation from this technical study should be used in the Draft EIR analysis and the technical report should be included in the Technical Appendices.

Response 21.59:

The Geotechnical Engineering Report has been included as Appendix L of Final Technical Appendices Volume II.

ATTACHMENT 1

NORTH VINEYARD STATION SPECIFIC PLAN

DRAFT EIR COMMENT LETTERS

Pacific Gas and Electric Company
Building and Land Services

343 Sacramento Street
Auburn, CA 95603

RECEIVED

AUG 1 1 1997
DEPT OF ENVIRONMENTAL
REVIEW & ASSESSMENT
SACRAMENTO COUNTY

August 6, 1997

Mr. Dennis E. Yeast
County of Sacramento DERA
827 7th Street, Room 220
Sacramento, CA 95814

Re: Draft EIR for North Vineyard Station Specific Plan Control No. 93-SBF-0238.

Dear Mr. Yeast:

Thank you for the opportunity to review the Draft Environmental Impact Report for the North Vineyard Station Specific Plan.

PG&E's comments from the NOP have been included in the report on pages 4.12 and 6.2. As long as those comments are included in the final report, PG&E has nothing further to add and has no objection to the filing of the final report.

If you have any questions, please call me at (916) 889-3160.

Sincerely,

Lou A. Norton
Land Agent

RECEIVED

AUG 21 1997

DEPT OF ENVIRONMENTAL
REVIEW & ASSESSMENT
SACRAMENTO COUNTY

August 20, 1997

SOUTHGATE
RECREATION & PARK DISTRICT

Sheldon
Administrative Headquarters
6000 Orange Avenue
Sacramento, CA 95823
Phone 916-428-1171
Facsimile 916-428-7334

Board of Directors
Robert D Cochran
John E Cockerham
Dr Dennis McKibben
Edwin A. Smith
Christine Thompson

General Manager
Larry Gurr

Assistant General Manager
Ward Winchell

Mr. Dennis Yeast
Environmental Coordinator
County of Sacramento
Department of Environmental Review and Assessment
827 7th Street, Room 220
Sacramento, CA 95814

Dear Dennis:

Enclosed please find Southgate Recreation and Park District Resolution #97-11 which was approved by our Board of Directors at their meeting of August 19, 1997. This Resolution provides comments regarding the Draft Environmental Impact Report for the North Vineyard Station Specific Plan (Control Number 93-SFB-0238).

For your information, this Resolution provides a specific comment regarding the language of LU-4, Mitigation Measures; along with other comments reflecting our District's previous planning with both the County and the landowner's group regarding important aspects of park, parkway, joint uses and financing issues for the Specific Plan area.

Thank you for the opportunity to review and comment on this document. Please contact our District should you have any questions.

Sincerely,

Claudia Gunter
Government Relations Officer

cc: Surinder Singh, Sacramento County Planning Department

2.1

Resolution 97-11

RESOLUTION OF BOARD OF DIRECTORS OF THE SOUTHGATE RECREATION AND PARK DISTRICT COMMENTING ON NORTH VINEYARD STATION SPECIFIC PLAN DRAFT EIR

SOUTHGATE
RECREATION & PARK DISTRICT

Sheldon
Administrative Headquarters
6000 Orange Avenue
Sacramento, CA 95823
Phone 916-428-1171
Facsimile 916-428-7334

Board of Directors
Robert D. Cochran
John E. Cockerham
Dr. Dennis McKibben
Edwin A. Smith
Christine Thompson

General Manager
Larry Gury

Assistant General Manager
Ward Winchell

WHEREAS, the Southgate Recreation and Park District is in receipt of the Draft Environmental Impact Report for the North Vineyard Station Specific Plan from the County of Sacramento Department of Environmental Review and Assessment, and identified by Control Number 93-SFB-0238; and

WHEREAS, this project contains 1,590 acres, and encompasses the area bounded by Florin Road to the north, Gerber Road to the south, Vineyard Road to the east, and the north and south forks of the Elder Creek; and

WHEREAS, this EIR document assesses the potential environmental effects of the proposed North Vineyard Station Specific Plan; and indicates the areas which must be addressed within the contents of the Specific Plan text; and

WHEREAS, the Southgate Recreation and Park District has participated in the planning and review process for the parks component of the North Vineyard Station Specific Plan, which is a land use plan developed through the cooperation of local citizens, public agencies, property owners, and the County Planning Department; and

NOW, THEREFORE, BE IT RESOLVED, that the Board of Directors of the Southgate Recreation and Park District does hereby provide to the County of Sacramento Department of Environmental Review and Assessment the following comments related to the North Vineyard Station Specific Plan Draft EIR:

1. <u>LU-4. Mitigation Measures</u>

In the Land Use Section of the "Executive Summary and Mitigation Measures" of the Draft EIR, Measure LU-4 does not accurately reflect the Southgate Board of Directors' position regarding the "Preferred" Land Use Plan. LU-4 should be revised to read:

> *"The final General Plan Diagram will be modified in respect to some park locations, with the Southgate Park District determining exact park locations. The Community Park site will not be located under power lines and will be modified to create neighborhood park sites in areas of the plan which are deficient in park land. Southgate does not support the Preferred Land Use Plan, but supports the Alternate Land Use Plan dated November 1, 1996, which was developed in cooperation with County Planning and the North Vineyard landowners group."*

2. Joint Uses

The Southgate Recreation and Park District supports coordination with other agencies to accomplish joint uses for park sites. This includes but is not limited to joint uses with schools, libraries, fire stations, detention basins, and drainage parkways.

3. Landscape Corridors Along Major Roadways

The Southgate Recreation and Park District supports the dedication and improvement of landscape corridors with pathways along major roadways to provide not only improved aesthetics between roadways and neighborhoods, but to also provide off-street transportation corridors for pedestrians and bicyclists. The District supports the dedication of 30 foot wide landscape corridors with 10 foot bike lanes along Vineyard, Gerber, Florin, Waterman, and Bradshaw Roads. These will be constructed concurrently with development in the plan area, and then dedicated to the District for ongoing maintenance.

4. Drainage Parkways/Detention Basins

It is important to allow for bicycle and pedestrian trail systems within the drainage parkway areas as defined on the plan. These systems become amenities to the community by providing recreational opportunities and creating logical off-street circulation through the plan area. Additionally, detention basins offer opportunities for passive park uses. After improvement, these should be dedicated to the District for ongoing maintenance.

5. North Vineyard Station Financing Plan

The Southgate Recreation and Park District supports the Park Component to the Financing Plan which will be associated with the North Vineyard Station in order to accomplish basic improvements to parks and recreational facilities contained in the plan.

PASSED AND ADOPTED by the Board of Directors of the Southgate Recreation and Park District this 19th day of August, 1997, by the following vote to wit:

AYES:
Cochran, Cockerham, McKibben Smith and Thompson

NOES:
None

Edwin A. Smith, Chair

Christine Thompson, Clerk

2.3

NORMAN D COVELL
Air Pollution Control Officer

SACRAMENTO METROPOLITAN

AIR QUALITY
MANAGEMENT DISTRICT

TIMOTHY W TAYLOR
Chief, Mobile Source Division

RECEIVED
AUG 29 1997
DEPT OF ENVIRONMENTAL
REVIEW & ASSESSMENT
SACRAMENTO COUNTY

August 28, 1997

Mr. Dennis E. Yeast, Director
Department of Environmental Review and Assessment
County of Sacramento
827 Seventh Street, Room 220
Sacramento, CA, 95814

Subject: **PROJECT NAME:** **DRAFT EIR: NORTH VINEYARD STATION SPECIFIC PLAN**
YOUR NUMBER: **93-SFB-0238**
OUR NUMBER: **PR940221**

Dear Mr. Yeast:

Thank you for the opportunity to review the above-captioned Draft EIR. The staff of the Air Quality Management District (District) has reviewed the draft, and offers the following comments.

1. The District is supportive of the construction and regional mitigation measures indicated in the Draft EIR, and recommends that they be included as conditions of approval for this project.

2. With regard to Construction Impact Mitigation Measures, we also recommend the use of reduced emission engines in heavy-duty on-road and off-road equipment.

3. Project proponents are advised that District Rule 403 - FUGITIVE DUST will apply to this project during construction. The project proponents should contact the District at (916) 386-6650 for information regarding this Rule.

Again, thank you for referring this application to us for comment. If you have any questions regarding these comments, please feel free to call me at (916) 386-7032

Sincerely,

Phil Stafford
Associate Air Quality Planner

cc: Ron Maertz, SMAQMD

G \MOBILE\WP\PJS\LANDUSE\940221 ltr

3

STATE OF CALIFORNIA-BUSINESS, TRANSPORTATION AND HOUSING AGENCY PETE WILSON,

DEPARTMENT OF TRANSPORTATION
DISTRICT 3, SACRAMENTO AREA OFFICE • MS 41
P. O. BOX 942874
SACRAMENTO, CA 94274-0001
TDD 916 741-4509
FAX no. 916 323-7669
Telephone 916 323-0543

RECEIVED
SEP 8 1997
DEPT OF ENVIRONMENTAL
REVIEW & ASSESSMENT
SACRAMENTO COUNTY

September 3, 1997

ISAC104
North Vineyard Specific Plan
DEIR SCH 96032057
03-SAC-16/50/99

Ms. Joyce Horizumi
Department of Environmental Review & Assessment
County of Sacramento
827 Seventh Street, Room 220
Sacramento, CA 95814

Dear Ms. Horizumi:

Caltrans has reviewed the Draft Environmental Impact Report for the North Vineyard Specific Plan and has the following comments:

- The traffic impacts to State Routes 16, 50 and 99 have not been adequately addressed as requested in our letter on the NOP dated April 2, 1996, (copy enclosed).

  The Traffic Study only includes the segment of State Route 16 from South Watt Avenue to Excelsior Road. Traffic generated by the North Vineyard development could significantly impact other segments of State Route 16 (SR-16), especially the segment west of South Watt Avenue to the Howe Avenue Interchange. Furthermore, the cumulative impacts of this project and other proposed projects, along or in the vicinity of SR-16 rely on future highway improvements to SR-16, yet these improvements are not included in the Sacramento Area Council of Governments Metropolitan Transportation Plan.

  This project and other similar projects in the vicinity will also impact Highway 50 and State Route 99. Traffic from this project will impact the Bradshaw/50 interchange and the Florin Road/SR-99 interchange.

  The traffic report needs to address these potentially significant impacts and describe appropriate mitigation measures. The County needs to aggressively support capacity and intersection improvements along the SR-16 corridor, Highway 50 corridor and SR-99 before the LOS of each of these roads and impacted interchanges deteriorates to an unacceptable level.

- CP-5 South Watt Avenue/Jackson Road (SR-16) (Page 8.23) The discussion is inconsistent with both the AM and PM peak hours without the project How can you add vehicles to an already congested situation and not make the congestion worse?

4.1

Therefore, the project would exacerbate LOS F operations especially during the PM peak hour by increasing the v/c by over 0.12.

- Improvements CP-5; South Watt Avenue/Jackson Road (SR-16). Alternatives which should be considered include either phasing or reducing the scale of development so that this intersection can operate at an acceptable LOS under cumulative conditions. The feasibility of widening the roadway at the intersection (4 through lanes in each direction) to increase capacity and improve the LOS should also be considered.

- Excelsior Road/Jackson Road (SR-16). The report should discuss the feasibility and benefits of widening Excelsior Road to a four lane facility (south of SR-16) and a six lane facility north of SR-16. With approximately 1350 cumulative AM peak hour trips (south of SR-16) expected, widening the roadway would improve traffic operations.

  Another alternative which should be considered is adopting a land-use alternative consistent with the current road capacity under cumulative conditions.

- Plate TR-L. The plate shows approximately 4100 peak hour AM trips northbound on South Watt Avenue just north of the Elder Creek Road/Elk Grove-Florin Road intersection. Yet only approximately 2300 peak hour trips are projected South of the Jackson Road (SR-16)/South Watt Avenue intersection. Please explain what happens to the approximately 1800 peak hour trips. Please review the intersection LOS calculations and update as needed.

- Please provide our office with a copy of the updated traffic study for our review and comment.

If you have any questions, please contact Tom Meyers at (916) 323-0543.

Sincerely,

Thomas G Meyers for

JEFFREY PULVERMAN, Chief
Office of Transportation
Planning - Metropolitan

4.2

COUNTY OF SACRAMENTO
INTER-DEPARTMENT CORRESPONDENCE
WATER RESOURCES DIVISION
MEMORANDUM

To: Dennis Yeast, Director
Department of Environmental Review and Assessment

From: Terri Wegener

Date: September 5, 1997

Subject: Draft Environmental Impact Report for North Vineyard Station Specific Plan (Control Number: 93-SFB-0238)

The Drainage Master Planning Section of the Water Resources Division has the following comment on the above referenced Draft Environmental Impact Report:

Mitigation Measure HY-3 (page 11.45)

Revise the final sentence by inserting the following italicized wording: "Such analysis shall verify that the phased improvements will result in no *substantial* increase in peak 100-year flows on Elder Creek at the City/County boundary, and no significant increased 100-year out-of-bank flows in the existing improved channel downstream of the Specific Plan area. *Any phasing must also provide the necessary system reliability and be approved by the Water Resources Division.*"

Mitigation Measure HY-6 (page 11.45)

The items required in condition HY-6 shall be approved by the Water Resources Division.

Mitigation Measure BR-3 (page 14.37)

The Wetland Mitigation plan for Elder and Gerber Creeks shall be submitted to the Water Resources Division for approval.

Mitigation Measure BR-6 (page 14.39)

The Drainage Parkway Plan for Elder and Gerber Creeks shall be submitted to the Water Resources Division for approval.

cc: Robert Davison
Craig Crouch

COUNTY OF SACRAMENTO
PUBLIC WORKS AGENCY

Inter-Department Correspondence

September 5, 1997

RECEIVED
SEP 9 1997
DEPT OF ENVIRONMENTAL
REVIEW & ASSESSMENT
SACRAMENTO COUNTY

To: Dennis E. Yeast. Environmental Coordinator
Department of Environmental Review and Assessment

From: Warren H. Harada, Agency Administrator

Subject: **DRAFT ENVIRONMENTAL IMPACT REPORT FOR NORTH VINEYARD STATION SPECIFIC PLAN (CONTROL NUMBER: 93-0238; STATE CLEARINGHOUSE NUMBER: 96032057)**

In response to your request for comments regarding the above cited Draft Environmental Impact Report, following is a summary of replies from various Public Works agencies:

1. Public Infrastructure Planning and Financing Section - No comments per Bob Davison.

2. Transportation Division (Planning-Traffic Engineering) - No additional comments at this time per Hardeep Sidhu.

3. Water Resources Division (Flood Control) - See the attached memo from James J. Paluck dated August 29, 1997.

4. Water Resources Division (Drainage Master Plan) - Comments will be forthcoming under separate cover.

5. Water Resources Division (Storm Water Quality) - See the attached memo from Tom Garcia dated August 28, 1997.

6. Water Resources Division (Water Supply) - See the attached memo from Stephen Kenning dated August 29, 1997.

7. Water Quality Division - See the attached memo from Bob Lilly dated September 4, 1997.

If you have any questions regarding this response, please contact Susan Goetz of the Public Infrastructure Planning and Financing Section at 440-5082.

WHH/BSG:bsg/97-31
Attachments (4)

cc:	Cheryl Creson	Tom Zlotkowski	Donna Dean	Mary James (6)
	Robert Shanks	Keith DeVore	Randy Foust	Pete Ghelfi
	Patrick Groff	Wendell Kido	John Boehm	Greg Ohanesian

COUNTY OF SACRAMENTO
INTRA-DEPARTMENT CORRESPONDENCE
WATER RESOURCES DIVISION

MEMORANDUM

August 29, 1997

TO: **Susan Goetz**
Public Infrastructure Planning and Financing Section

FROM: **James J. Paluck**
Water Resources Division

SUBJECT: **Comments on the DEIR North Vineyard Station Specific Plan**
Control No. 93-0238

The Water Resources Division (WRD) Development Section has the following comments on the subject project.

FEMA

With construction of the proposed drainage improvements, the revised 100-year floodplain must be approved by the Federal Emergency Management Agency (FEMA) prior to issuance of any building permits. Since the construction of these drainage improvements is expected to occur as part of development projects, it will be required at that time to "petition FEMA for a conditional letter of map revision pursuant to the Sacramento County Floodplain Management Ordinance, and the Sacramento County Improvement Standards, prior to improvement plan approval." This condition of approval, among others, will be requested for each development project occurring within the Specific Plan area. Include language in the EIR regarding this subject if you feel it is required.

Financing of Drainage Facilities

Nowhere in the Draft EIR is mentioned funding of drainage facilities identified within the Specific Plan area. This is a major concern for Water Resources Development Section. It has been identified that the overall "reimbursable" costs of the drainage facilities is approximately $20 million, while anticipated collection of drainage fees within the Specific Plan area is on the order of $10 million. With this $10 million shortfall, it must be determined how these drainage improvements will ultimately be funded, and a timeline of this funding. This should be addressed in the EIR.

If you have any questions, please feel free to contact me at 440-6851.

309/77.10
cc: Pete Gheifi
Terri Wegener

8

COUNTY OF SACRAMENTO
INTER-DEPARTMENT CORRESPONDENCE
WATER RESOURCES DIVISION

MEMORANDUM

August 29, 1997

TO: Susan Goetz
Public Infrastructure Planning and Financing Section

FROM: Stephen Kenning
Water Resources

SUBJECT: **Draft Environmental Impact Report for North Vineyard Station Specific Plan (Contro Number: 93-0238; State Clearinghouse Number: 96032057)**

Thank you for the opportunity to make comments on the Draft Environmental Impact Report for North Vineyard Station Specific Plan. Our comments are as follows:

Page 2.28
The use of the term maximum day demand should be used when discussing facility sizing, not in describing t use of water supplies. Revise the last paragraph to read:

> In Alternative 1, surface water would be supplied to the entire Study Area, including the North Vineyard Station Specific Plan Area. In Alternative 2, surface water would supply the Demand of th area within the City's POU, and ground water would supply the Demand of the area outside the POU

Page 2.29
The discussion of water supply does not include facility sizing. Delete the first paragraph that begins "Demands in excess of the..."

Page 2.30
Revise the last sentence by eliminating the redundancy of the reference to *Water Master Plan* The sentence should read:

> However, the implementation of the NVSSP Water Master Plan is contingent on the implementation of the Areas Adjacent to the Zone 40 Water Supply Master Plan Update's Study Area, as well as fulfillment of the City of Sacramento American River Place of Use (POU)

Page 7.4d
Exhibit PF-D is an outdated exhibit showing CIP water facilities. Delete this exhibit in its entirety and repla or reference page 12.19a (see attached exhibit WS-B) which is the latest version of this exhibit.

Page 7.4n
Incorporate the latest numbers from table 10.5-1 (attached) of the *Master Water Supply and Water Distribution System Report for North Vineyard Station Specific Plan*, prepared by MacKay and Somps intc table PF-2.4 of the Draft EIR for NVSSP. Modify the Project Name for Project Number 4 5 in table PF-2. to read:

ON-SITE FACILITIES (SPECIFIC PLAN AREA)

Page 7.4d
Delete this exhibit in its entirety and replace with or reference to exhibit WS-B (page 12.19a).

Page 7.4n
Incorporate the latest numbers from table 10.5-1 of the *Master Water Supply and Water Distribution System Report for North Vineyard Station Specific Plan*, prepared by MacKay and Somps into table PF-2.4 of the Draft EIR for NVSSP.

Modify the Project Name for Project Number 4.5 in table PF-2.4 to read:

ON-SITE FACILITIES (SPECIFIC PLAN AREA)

Page 12.8
The adjacent Area Water Master Plan being prepared by the Sacramento County Water Agency is not yet complete, therefore, the first sentence in paragraph one should be replaced with·

> A Draft of this document titled "Water Master Plan for Areas Adjacent to Zone 40 Water Master Pla Update's Study Area" (Adjacent Area Water Master Water Plan) dated September 1996 will be completed by SCWA. SCWA intends to finalize this document by the end of December 1997.

Page 12.10
For clarity, the second paragraph which starts "The determination of water . " needs the following heading

Buildout Average Annual Demand

The fifth paragraph that starts "A list of conservation measures.. " needs the following sentence added to the end of the paragraph:

> Demands in WS-2 are not adjusted to reflect conservation, demands in WS-3 are adjusted to reflect effects of conservation measures listed in WS-4

Page 12.28
Delete the word preliminary from the title of the Water Master Plan. The first sentence of the last paragrap should read:

> MacKay and Somps Civil Engineers, Inc. have prepared *The ~~[Preliminary]~~ Master Water Supply a Water Distribution System Report* (May 1997) for the North Vineyard Station Specific Plan.

If you have any questions or concerns please feel free to call me at 440-7967

cc file
Jon Goetz, Sacramento County Water Agency

9.2

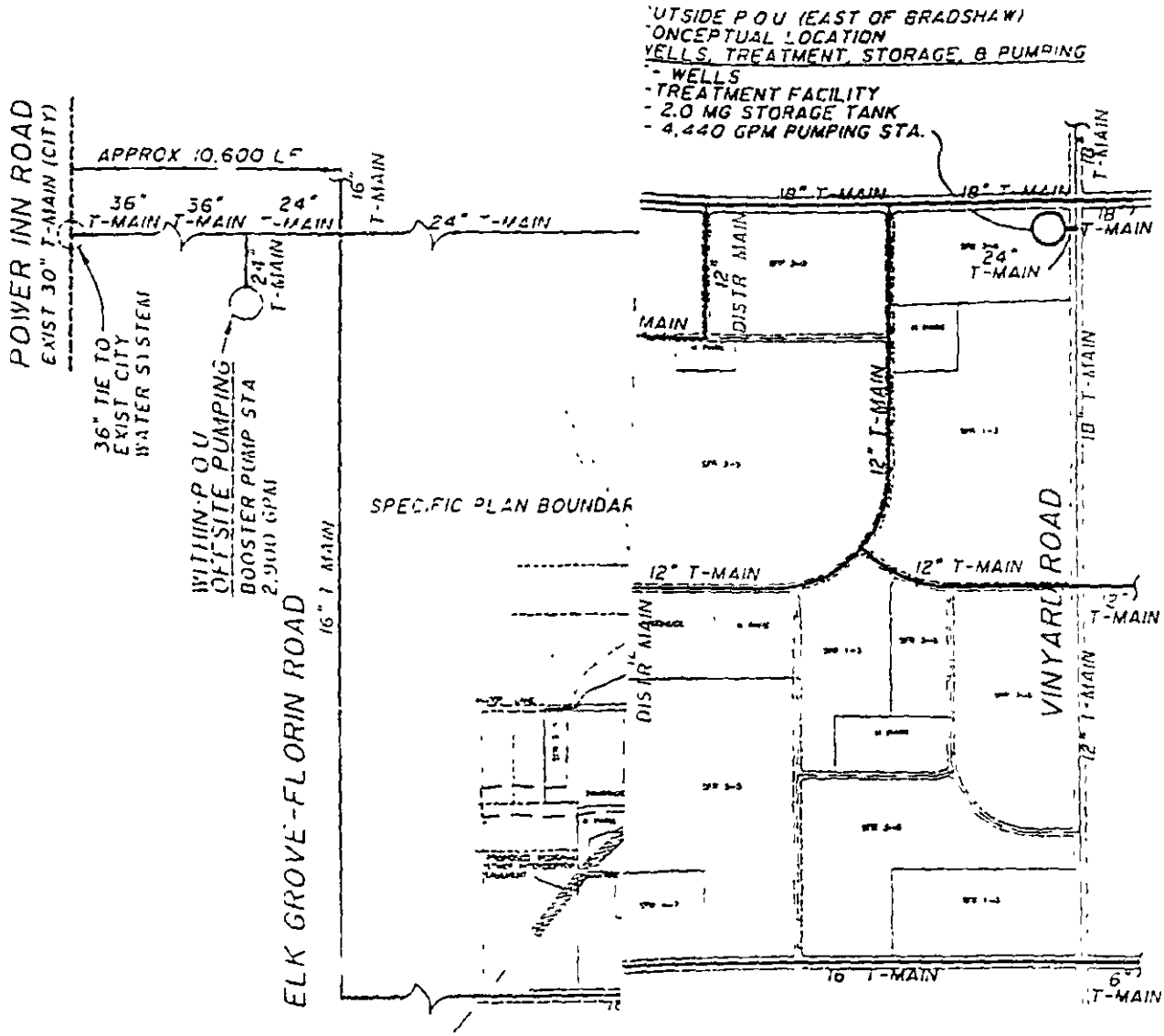


FIGURE 4

North Vineyard Station
Specific Plan
WATER MASTER PLAN

Sacramento, California MAY 1997

MACKAY & SOMPS
CIVIL ENGINEERS, INC.
CIVIL DESIGN/HIGHWAY PLANNING/HIGHWAY SURVEYING

0 600 1200 2400

SCALE: 1" = 1200'

JOB NO: 7536-0 MASTER WATER PLAN
DWG FILE /7000/7536/WATER/WBASE1200.DWG

COUNTY OF SACRAMENTO
Public Works Agency
Water Quality Division Memorandum

September 4, 1997
E225.000

TO: Susan Goetz
Public Infrastructure Planning & Finance Section

FROM: Bob Lilly NBA for
Water Quality Division

SUBJECT: **DRAFT EIR FOR NORTH VINEYARD STATION SPECIFIC PLAN CONTROL No. 93-SFB-0238**

Water Quality Division staff has reviewed the subject document on behalf of Sacramento Regional County Sanitation District (SRCSD) and County Sanitation District No. 1 (CSD-No. 1). Comments addressed to this project at the NOP are included in the draft and are adequate and appropriately discussed in the sewer section on page 13.1. On page 2.31, the bottom paragraph reads:

> "There is an existing 108-inch sewer interceptor located in .. the Bradshaw Interceptor is planned for construction in 1997-1998."

This should be revised to say:

> "There is an existing *102*-inch sewer interceptor located in . the Bradshaw Interceptor is planned for construction in *1999-2000* "

cc. J. Boehm
V. Scotti

BL/bjb

lilly/goetz724.mem/204388

(10)

COUNTY OF SACRAMENTO

PUBLIC WORKS AGENCY

Inter-Departmental Correspondence

September 8, 1997

TO: Joyce Horizumi, Principal Environmental Analyst
Department of Environmental Review and Assessment

FROM: Robert Davison, Associate Civil Engineer RAD
Public Infrastructure Planning and Financing Section

SUBJECT: **Draft Environmental Impact Report for the North Vineyard Station Specific Plan (Control No. 93-0238)**

The Public Infrastructure Planning and Financing Section has reviewed the above cited Draft Environmental Impact Report and has the following comments:

Page 2.8 – Second Paragraph in the Public Facilities Financing Section: Revise the first sentence to read as follows: "The project site is not included in any existing Public Facilities Financing Plan area and will therefore require a financing ***plan and associated implementation*** to fund public facilities needed to serve new development in the Plan Area."

Page 2.8 – Third Paragraph in the Public Facilities Financing Section: Revise the first sentence to read as follows: "Because the NVSSP does not include any rezoning, a financing plan is not required to be part of the project ***at this stage***."

To insure that no maps are approved prior to the approval a Public Facilities Financing Plan for the North Vineyard Station Specific Plan area, the Public Infrastructure Planning and Financing Section is recommending the following mitigation:

> "No tentative map shall be approved until a Public Facilities Financing Plan for the North Vineyard Station Specific Plan area has been approved by the Board of Supervisors and no final map shall be recorded until the financing mechanisms identified in the Public Facilities Financing plan have been implemented."

If you have any questions, I can be reached at 440-6926.

RAD:rad

Cc: Rich Blackmarr
Del Bridgman
Maureen Zamarripa

RECEIVED
SEP 9 1997
DEPT. OF ENVIRONMENTAL REVIEW & ASSESSMENT
SACRAMENTO COUNTY

p-f&sp/north vineyard station/ltr to Horizumi re DEIR

11.1

COUNTY OF SACRAMENTO

PUBLIC WORKS AGENCY

Inter-Departmental Correspondence

September 17, 1997

TO: Joyce Horizumi, Assistant Environmental Coordinator
Department of Environmental Review and Assessment

FROM: Robert Davison, Associate Civil Engineer RAD
Public Infrastructure Planning and Financing Section

SUBJECT: **Draft Environmental Impact Report for the North Vineyard Station Specific Plan (Control No. 93-0238)**

The Public Infrastructure Planning and Financing Section has previously forwarded comments to you regarding the above cited project to insure that the financing plan and associated implementation are required to be completed prior to certain entitlements. An error was made in the recommended mitigation and the following is a corrected recommended mitigation:

> "No ~~tentative map~~ ***rezone*** shall be approved until a Public Facilities Financing Plan for the North Vineyard Station Specific Plan area has been approved by the Board of Supervisors and no final map shall be recorded until the financing mechanisms identified in the Public Facilities Financing plan have been implemented."

If you have any questions, I can be reached at 440-6926.

RAD:rad

Cc: Rich Blackmarr
Del Bridgman
Maureen Zamarripa
Dave Pevny
Surinder Singh

p-f&sp/north vineyard station/ltr To Horizumi re revised nvs DEIR

RECEIVED
SEP 19 1997
DEPT OF ENVIRONMENTAL
REVIEW & ASSESSMENT
SACRAMENTO COUNTY

11.2

Governor's Office of Planning and Research
1400 Tenth Street
Sacramento, CA 95814

RECEIVED
SEP 15 1997
DEPT OF ENVIRONMENTAL
REVIEW & ASSESSMENT
SACRAMENTO COUNTY

September 12, 1997

DENNIS YEAST
SACRAMENTO COUNTY
827 7TH STREET, ROOM 220
SACRAMENTO, CA 95814

Subject: NORTH VINEYARD STATION SPECIFIC PLAN SCH #: 96032057

Dear DENNIS YEAST:

The State Clearinghouse submitted the above named environmental document to selected state agencies for review. The review period is closed and none of the state agencies have comments. This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act.

Please call Kristen Derscheid at (916) 445-0613 if you have any questions regarding the environmental review process. When contacting the Clearinghouse in this matter, please use the eight-digit State Clearinghouse number so that we may respond promptly.

Sincerely,

ANTERO A. RIVASPLATA
Chief, State Clearinghouse

12.1

Notice of Completion

Control Number 93-SFB-0238

SEE NOTE BELOW

SCH # 96032057

Mail to State Clearinghouse, 1400 Tenth Street, Sacramento, CA 95814 916/445-0613

Project Title: NORTH VINEYARD STATION SPECIFIC PLAN

Lead Agency: SACRAMENTO COUNTY — Contact Person: DENNIS YEAST

Street Address: 827 7th Street Room 220 — Phone: 440-7914

City: Sacramento — Zip: 95814 — County: Sacramento

Project Location

County: SACRAMENTO — City/Nearest Community: VINEYARD

Cross Streets: BRADSHAW ROAD/FLORIN ROAL — Total Acres: 1,594

Assessor's Parcel No.: NUMEROUS — Section: 4,5 & 6 — Twp.: 7N — Range: 6E — Base: MDBM

Within 2 Miles: State Highway #: 16 — Waterways: ELDER & GERBER CREEKS

Airports: N/A — Railways: CCTRR — Schools: Elk Grove USD

Document Type

CEQA: [ ] NOP [ ] Early Cons [ ] Neg Dec [X] Draft EIR [ ] Supplement/Subsequent [ ] EIR (Prior SCH No.) [ ] Other:

NEPA: [ ] NOI [ ] EA [ ] Draft EIS [ ] FONSI

OTHER: [ ] Joint Document [ ] Final Document [ ] Other

Local Action Type

[ ] General Plan Update [ ] General Plan Amendment [ ] General Plan Element [ ] Community Plan

[X] Specific Plan [ ] Master Plan [ ] Planned Unit Development [ ] Site Plan

[ ] Rezone [ ] Prezone [ ] Use Permit [ ] Land Division (subdivision, Parcel map, Tract Map, etc.)

[ ] Annexation [ ] Redevelopment [ ] Coastal Permit [ ] Other

Development Type

[X] Residential: Units 6,339 Acres 1,173
[X] Office Sq. Ft. Acres 10 Employees
[X] Commercial Sq. Ft. Acres 28.6 Employees
[ ] Industrial: Sq. Ft. Acres Employees
[X] Educational 21.7 ac
[X] Recreational 193 ac

[X] Water Facilities: Type Supply Plan MGD
[X] Transportation Type Circulation Plan
[ ] Mining Mineral
[ ] Power Type
[X] Waste Treatment: Type Sewage Infrastructure
[ ] Hazardous Waste Type
[X] Other: Drainage Master Plan

Project Issues Discussed in Document

[X] Aesthetic/Visual
[X] Agricultural Land
[X] Air Quality
[X] Archeological/Historical
[X] Coastal Zone
[X] Drainage/Absorption
[X] Economic/Jobs
[X] Fiscal
[X] Floodplain/Flooding
[ ] Florest Land/Fire Hazard
[ ] Geologic/Seismic
[ ] Minerals
[X] Noise
[X] Population/Housing Balance
[X] Public Services/Facilities
[X] Recreation/Parks
[X] Schools/Universities
[ ] Septic Systems
[X] Sewer Capacity
[X] Soil Erosion/Compaction/Grading
[X] Solid Waste
[X] Toxic Hazardous
[X] Traffic/Circulation
[X] Vegetation
[X] Water Quality
[X] Water Supply/Groundwater
[X] Wetland/Riparian
[X] Wildlife
[X] Growth Inducing
[X] Land Use
[X] Cumulative Effects
[X] Other

Present Land Use/Zoning/General Plan Use

GENERAL AGRICULTURE & AG-RES/AG-20 & AR-10/URBAN DEVELOPMENT AREA

Project Description The proposed project consists of a Specific Plan proposal for 1,590± acres in the Vineyard Community Plan area currently designated as an Urban Development Area. The 6,339 unit residential specific plan will support commercial, business professional, park, school and open space use.

JUL 21 '97 STATE

State Clearinghouse Contact: Mr Chris Belsky (916) 445-0613

State Review Began: 7-22-97

Dept Review to Agency: 8-29

Agency Rev to SCH: 9-3

SCH COMPLIANCE: 9-5

Please note SCH Number on all Comments

96032057

Please forward late comments directly to the Lead Agency

AQMD/APCD 25 (Resources 7/26

Project Sent to the following State Agencies

[X] Resources
[ ] Boating
[ ] Coastal Comm
[ ] Coastal Consv
[ ] Colorado Rvr Bd
[X] Conservation
[X] Fish & Game # 2
[ ] Delta Protection
[ ] Forestry
[X] Parks & Rec/OHP
[ ] Reclamation
[ ] BCDC
[ ] DWR
[ ] OES
Bus Transp Hous
[ ] Aeronautics
[ ] CHP
[X] Caltrans # 3
[X] Trans Planning
[X] Housing & Devel
Health & Welfare
[ ] Drinking H20
[ ] Medical Waste

State/Consumer Svcs
[ ] General Services
Cal/EPA
[ ] ARB
[ ] CA Waste Mgmt Bd
[ ] SWRCB Grants
[ ] SWRCB Delta
[ ] SWRCB Wtr Quality
[ ] SWRCB Wtr Rights
[X] Reg WQCB # 5S.
[ ] DTSC/CTC

Yth/Adlt Corrections
[ ] Corrections
Independent Comm
[ ] Energy Comm
[ ] NAHC
[ ] PUC
[ ] Santa Mn Mtns
[X] State Lands Comm
[ ] Tahoe Rgl Plan
[X] Other OLA

12.2

David Edmiston
7651 Bar Du Lane
Sacramento, California 95829

RECEIVED
AUG 2 5 1997

RECEIVED
SEP 4 - 1997
DEPT OF ENVIRONMENT
REVIEW & ASSESSMENT
SACRAMENTO COUNTY

August 21, 1997

Mr. Don Notoli, Superisor
County of Sacramento
700 H Street
Sacramento, California 95814

Dear Mr. Notoli,

The Planning and Development Department has prepared a North Vineyard Station Specific Plan, and has identified a "Preferred Plan". This Preferred Plan has features which are unacceptable my wife and I as well as my neighbors on the north end of Bar Du Lane. It is my understanding that County policy states that future development should have minimal negative impact on current users of adjoining areas. The Preferred Plan does not meet that criteria for our neighborhood.

This area was developed approximately 30 years ago under A2 zoning. Several of us have lived on the street for the nearly the entire 30 years. The area has been quiet, peaceful, semi-rural and relatively free from crime. That is exactly why each of us has chosen to live here. We believe we have the right to expect that the area remain as close as possible to that ideal.

The Preferred Plan includes a "core area" directly across Gerber Road from the north end of Bar Du Lane which provides for areas of commercial use and high density housing. Commercial activity is an exact opposite of the current usage of our neighborhood. High density housing and increased crime seem to go hand in hand in the Sacramento area. The impact of these two incompatible activities would result in the destruction of our peaceful, semi-rural way of life.

An alternate plan which would reposition the core area to the intersection of Bradshaw and Florin Road has also been prepared. We believe this to be a better location for the commercial and high density housing uses. It is at the intersection of two existing major streets while the Preferred Plan would create a new center of activity and a new busy intersection. Also, most of the area which would be impacted is vacant land or has current commercial usage.

We are also concerned about the increased traffic flow along Gerber Road that will result from development of the area. The plan estimates that traffic along Gerber will increase from 7,220 to 25,200 vehicles per day, an increase of 254%. Even now it is difficult and very dangerous to turn onto Gerber from Bar Du Lane at rush hour on a foggy winter morning. The plan would modify Gerber Road to four lanes to accommodate the increased traffic. However, unless some means of access at a signaled intersection is

provided. it is certain there will be an increased number of serious. even fatal accidents at the corner of Bar Du Lane and Gerber Road.

We urgently request that the current preferred plan not be approved, that an alternate plan with the core area located at Bradshaw and Florin Road be selected. We also urge that safe access to Gerber Road from Bar Du Lane be provided.

Sincerely,

David Edmiston

David Edmiston

13.2

September 3, 1997

RECEIVED

SEP 3 - 1997

DEPT OF ENVIRONMENTAL
REVIEW & ASSESSMENT
SACRAMENTO COUNTY

Mr. Dennis E. Yeast, Director
Department of Environmental Review and Assessment
827 Seventh Street, Room 220
Sacramento, CA 95814

Dear Mr. Yeast

RE: Draft Environmental Impact Report for North Vineyard Station Specific Plan
(Control = 93-SFB-0238)

Thank you for the opportunity to comment on the Draft Environmental Impact Report on the above named project. As a thirty-year property owners on Bar Du Lane, we are extremely concerned about the impact on the environment and the negative results that will drastically alter our lifestyle if this project is approved.

The report clearly states that there will be "significant and unavoidable effects that CANNOT BE AVOIDED" if the plan is approved. Those include:

1. Traffic and Circulation: we are already experiencing massive delays at four of the intersections listed in the project. The increase in traffic will be intolerable.

2. Regional and local Air Quality: Many days we cannot see the Sierra Mountains from our property. The increase vehicle traffic will increase the pollution to dangerous levels.

3. Traffic Noise Impacts to Existing Receptors: The report makes it clear that noise barriers are not feasible in our area because of the number of front-on lots where driveway access cannot be blocked by a solid wall. The danger of having local residents merging onto four-lane roadways is not even addressed. As there have been several fatal car crashes right in front of our property on Gerber Road, we are very concerned about the safety of the local residents.

4. Cumulative Loss of Wildlife Habitats: Should we only be concerned about the impact on those animals whose population we have already decimated with our urban developments? What about the quail, owls, coyotes, and other animals, and reptiles that live in our area?

5. Cumulative Ground Water Decline (Interim Impact): ALL of the residents in this area are on wells. If large projects pump out the ground water, the water table will drop forcing us to drill deeper wells. This could be a disaster waiting to happen in the frequent drought years we experience.

Although the report indicates that the above concerns CANNOT BE MITIGATED, if there is a decision to go ahead with the project in opposition to the County Master Plan, we cannot support any of the proposed plans and alternative plans that do not move the Core Area to the corner of Bradshaw and Florin Roads. Gerber Road should be the last choice for business, commercial, or multi-family dwellings because:

1. BRADSHAW ROAD: Proposed to be widened to SIX LANES, will carry cars per day, has DIRECT FREEWAY ACESS TO HIGHWAY 50, will carry 48,600 cars per day, and has three vacant corners at the intersection with Florin Road. There are already NUMEROUS COMMERCIAL ENTERPRISES that face Bradshaw.

2. ELK GROVE-FLORIN ROAD: same as above with 53,000 cars per day.

3. FLORIN ROAD: same as above with 32,700 cars per day; access is to HIGHWAY 99.

14.1

4 GERBER ROAD the ONLY road designated to be FOUR LANES, will carry only 25,200 cars per day is land-locked with no direct freeway access – dead ends into Stockton Blvd And Excelsior, has virtually no commercial enterprises along the road

It is ILLOGICAL at best to place the business, commercial and multi-family sections in the MIDDLE of the least-traveled and most narrow street that does not have any direct freeway access Our rural way of life would be destroyed along with the habitat for much wildlife

We strongly recommend that you do not approve the project based on the negative environmental report and the devastation that such a project would produce Thank you for considering our opposition to this project

Sincerely yours,

Clifford C Daniel
7622 Bar Du Lane
Sacramento, CA 95829

Carol Sue Daniel

14.2

Gail Peters
7641 Bar Du Lane
Sacramento, CA 95829

September 4, 1997

Joyce Horizumi
County of Sacramento
Department of Environmental Review and Assessment
827 Seventh Street, Room 220
Sacramento, CA 95814

RE: Draft Environmental Impact Report for the North Vineyard Station Specific Plan (Control Number: 93-SFB-0238).

Dear Ms. Horizumi:

I am a resident of Bar Du Lane which is across the street from Gerber Road. Bar Du is a quiet country lane with well maintained homes. I have some concerns about the DEIR that I wish to address. The "Preferred" Plan (developer's plan) places a shopping center, business professional space, multi-family residential units and a Park and Ride directly across the street from our homes. While I am not against development in our area, I am very concerned about the impact of this "Preferred" Plan on the existing homes in my neighborhood. (Please see page 4.5b as it relates to Bar Du Lane).

Project Description

Under this section there is a discussion of a 15% Density Reduction Plan and a Modified Core Specific Plan (p. 4.3). I am in favor of a combination of these two plans. A 15% reduction plan would be the most consistent with the existing neighborhood surrounding the Plan area.

The report states (on page 4.3) that "the modified core alternative does not include any drainage parkway features or improvements adjacent to the urban core and focus area as does the Preferred Plan." I wasn't sure if this meant that drainage parkway features and improvements were not necessary with the modified plans or if it meant that the report simply did not include a diagram of these features.

Conclusion

In closing, I would like to thank you for taking the time to review my questions and concerns. I am not opposed to development. I am opposed to the "Preferred" Plan. It was designed without the consideration of the existing residential communities closest to the Plan area. Bar Du is a peaceful and quiet country lane. I would like to keep it that way as much as possible. I am in favor of the 15% Reduction combined with moving the core to Florin Road. I believe that this combined alternative is workable and I would like to see future studies focus more on these alternatives than on the "Preferred" Plan.

Sincerely,

Gail Peters

Gail Peters

15.2

Urban Creeks Council
4855 Hamilton Street, Sacramento, CA 95841
(916) 482-8377 Fax (916) 482-8410

SACRAMENTO
CHAPTER

RECEIVED
SEP 5 - 1997
DEPT. OF ENVIRONMENTAL
REVIEW & ASSESSMENT
SACRAMENTO COUNTY

September 5, 1997

Dennis E. Yeast
County of Sacramento
Department of Environmental Review and Assessment
827 7th Street, Room 220
Sacramento, CA 95814

Subject: North Vineyard Station Specific Plan DEIR
County Control Number: 93-SFB-0238
State Clearinghouse Number: SCH #96032057

Dear Mr. Yeast:

As you know, we are a chapter of the Urban Creeks Council of California whose purpose is to encourage the preservation, protection, restoration, and maintenance of natural streams in urban environments. Our efforts are directed to protect natural streams and prevent incursions into floodplains and floodways of natural creeks

Comments on the Process

In the spring of '96, representatives of UCC along with Audubon Society, Native Plant Society, Environmental Council of Sacramento, and Sacramento Open Space were invited to participate with the County and developer representatives in formulating a drainage plan for Gerber and Elder Creeks in the North Vineyard Station Specific Plan area.. We appreciate the opportunity that was given for our input, and feel we learned much about what the County is dealing with in the Specific Planning process. We attended several meetings, giving verbal and written input Unfortunately, virtually none of our recommendations were integrated into the preferred plan. Some of our recommendations appear in the DEIR's Biological Resources section.

The streams running through the North Vineyard Station and other specific plan areas in the south county offer a new opportunity to capitalize on creeks as amenities to development as was done with development along Laguna Creek. The width of the Laguna Creek Parkway corridor is generally sufficient to accommodate wildlife, trails for transportation and recreation, parks and natural areas. In contrast, houses crowd Morrison Creek to the point that it is just a drainage with almost no biological functions, and now flood walls are being proposed as the solution. Creeks in the north are a maintenance and flood control headache because development in most cases was allowed too close to the creeks. Instead of recognizing the many benefits that would result from a wider corridor,

16.1

the preferred alternative for NVS relies on technical fixes and allows bare minimum corridor widths to free up more land for development.

Comments on the DEIR

Page 11.41 refers to the drainage parkway alternative proposed by the above-mentioned environmental groups. It states, "These recommended policies have been included in their entirety for the readers reference in the Biological Resources section of this EIR." A contradictory statement is made later in the DEIR on page 14.29. The DEIR states that the environmental community "formulated 16 alternative drainage corridor policies for Elder and Gerber Creeks, 14 of those policies address biological resources and are discussed below." It appears only 14 of our 16 policies are to be shown in the DEIR. However only 10 of our proposed policies actually appear. Most of those missing are revisions we made to draft policies presented to us in the above-mentioned meetings. Factual Correction: The missing polices are:

* Long stretches of backup lots along parkways and open space corridors are discouraged Effective patrolling requires the utmost visibility for foot and vehicular patrols The use of front on streets is preferred, with side yard lotting patterns and open-ended cul-de-sacs being less appropriate. Backup lots, side yard lotting patterns, and open-ended cul-de-sacs will be restricted to 25% of the parkway length within the Specific Plan area. Through appropriate planning, a need for backup lots and side yard lotting patterns could be further reduced. An outreach program should educate the neighborhood about the benefits of the creeks and corridors and how to protect them, e.g. no dumping, no independent planting in the corridor, creek study, and other appropriate recreational activities

* Development located adjacent to the open space corridors of Elder and Gerber Creeks shall incorporate the corridor into the design of the project with attention given to minimizing the frontage that is blocked off from public view Development proposals adjacent to the open space corridor shall have a public street paralleling at least one side of the corridor with vertical curbs, gutters, footpath, street lighting and post and cable barriers to prevent vehicular access It may be appropriate to alternate the public street frontage from one side of the corridor to the other to maintain aesthetics for residential lots on the corridor, but resulting in not less than 75% of corridor having street frontage within the Specific Plan area.

* Residential lots which back up or have a side yard orientation to the open space corridor shall employ the use of open fencing (e g., wrought iron or decorative iron) to enhance surveillance of the corridor and provide a visual amenity A 3-foot solid wall with 3 feet of open fencing on top is acceptable, while 6 feet of wrought iron is preferred for surveillance purposes. (Note. Chain link fencing is not an acceptable fencing material.)

* Require that prior to the approval of any rezone or tentative map entitlement within or adjacent to the currently designated floodplain of Elder or Gerber Creek, or modified floodplain as recognized by FEMA, a comprehensive open space corridor management plan (including revegetation, vegetation maintenance, and 5-year monitoring plans) shall be prepared and approved by the Board of Supervisors for that portion of the Creek included in the planning proposal, and extending 100 feet both up/down stream. The management plan shall include·

  * a precise proposal encompassing the flood channel and open space corridor which adheres to the above stated policies and addresses the biological, aesthetic, and recreational qualities of the open space corridor;

  * an appropriate interface between the open space corridor and adjacent development with respect to aesthetics, access, maintenance and security,

  * an appropriate funding mechanism to establish, operate and maintain the open space corridor A funding mechanism which is provided for a public entity should be given priority. As sections of the trail system are improved, they should be dedicated to Southgate Recreation and Park District for ongoing maintenance.

* To the extent feasible, the storm water detention basins located within the North Vineyard Station Planning Area should be designed in a manner which allows the joint use of the facility for detention and recreation purposes Guidelines should be followed as outlined in Volume 4 of the City/County Drainage Manual, and development plans should be coordinated with the Southgate Parks and Recreation District

* When detention basins (water quality and/or flood control) are adjacent to the drainage canal, the open space corridor shall begin at the outside edge of the detention basin. When detention basins are adjacent to roads, the open space/habitat corridor shall continue between the road and the basin in order to maintain the integrity of the corridor.

Hydrology and Flooding

The County has not yet adopted a Drainage Master Plan (DMP) for the overall Elder/Gerber Creek watershed per page 2.20 of the DEIR. It is our understanding that the General Plan calls for 600 foot wide corridors on creeks that do not have a DMP A preferred alternative is not the same thing as an approved plan. Approval of the preferred drainage plan for NVSSP (average corridor width less than half the 600 foot width) without an Elder/Gerber watershed DMP would be in violation of the County's General Plan.

Page 2.22 discloses an existing overflow flood condition along Gerber Creek east of the NVSSP area that "causes flood flows to spill overland into the NVSSP area, placing a broad swath of the southeast portion of the Specific Plan area within the 100-year floodplain. Development of the proposed NVSSP urban land uses cannot occur in this area until this floodplain area is reclaimed. Such reclamation could be provided by constructing ultimate off-site, upstream Gerber Creek channel improvements to a point approximately 1800 feet north of Gerber Road Crossing No. 1. Alternatively, a new channel (either interim or permanent) could be constructed across the southeast portion of the Specific Plan to confine the overflow from Gerber Road in a manner which reduces the extent of the 100-year floodplain over this portion of the site, allowing development of a portion of the proposed NVSSP land uses in this area to proceed."

The proposed solutions are discussed no more completely in the Hydrology section There is no map, no detail, no discussion of impacts of these alternatives. The planned development might require substantial alteration if a new channel is created. What route would the new channel follow? What would be the project and downstream impacts of this channel? Plate HY-C seems to show that the detention basin, not a channel, is part of the preferred DMP for the Elder/Gerber DMP. Is this correct? It appears that the absence of a DMP for the Elder/Gerber watershed leaves this issue up in the air.

Density Reduction Alternatives

10% and 15% Density Reduction Alternatives are discussed on pages 5 6 through 5.8. We suggest that a 600 foot wide creek corridor could be part of the density reduction. Proximity to the creek with a wider corridor than proposed would effectively lower the density for those parcels. All residents, including those living in higher density areas, could benefit from that amenity of open space. The corridor as currently planned will leave little room for open space with vegetation. What little space is allowed will be

gobbled up by trails, firebreaks, easements and unplanned or unforeseen needs of the space. This has been the experience along most of Sacramento's urban creeks.

Vernal Pool and Seasonal Wetland Impacts

The proponents propose off-site mitigation to compensate for vernal pool impacts of the project. We support the preparation of an On-site Wetland Preservation Plan as described on page 14.17 of the DEIR. The DEIR discussion indicates that most of the vernal pools are located in the east portion of the plan area. An on-site preserve of sufficient size (at least 200 acres) and including the pools' watershed may be feasible and would be preferable to off-site vernal pool creation. We would add to the On-site Wetland Preservation Plan a restoration component so that less off-site and creation mitigation would be required.

If off-site mitigation is to occur, we would urge the County to follow the California Native Plant Society guidelines. CNPS guidelines recommend off or on-site mitigation be not less than 2:1 in purchase or easement. If rare species are present the ratio should be 3 or 4 to 1. Restoration or preservation of damaged vernal pools is preferred over creation. Vernal pool creation should be at more than 3:1.

Funding for Drainage Parkway Buffer Areas

Page 11.37 states, "the Specific Plan does not identify the funding source or mechanism for land acquisition and landscaping improvements within the buffer area portions of the drainage parkways." We agree with a later statement on the same page, "the Specific Plan should be revised to clearly specify the funding source or mechanism for acquisition of the buffer area lands...and to clearly specify the funding source or mechanism for construction of the buffer area landscaping improvements..."

Thank you for considering our comments.

Sincerely,

Alta Tura

Alta Tura
Co-President

16.4

October 15, 1997

Sacramento County
Planning and Community Development
827 Seventh Street, Room 230
Sacramento, CA 95814-2485
Re: North Vineyard Station Specific Plan

Dear Sir or Madam:

We own a one acre parcel of land within the North Vineyard Specific Plan (see attached map) Over the past nine years we have spent a great deal of money and hard work to landscape and improve this property so that it is one of the nicer pieces of property on McCoy Avenue We had intended to live in the home on this property for the rest of our lives. Now that our rural way of life is being destroyed by big housing developments we probably will want to sell our property and leave Sacramento County.

When we were first informed about this project our land had been designated entirely as a water retention basin. After attending almost all of the community meetings and voicing our concerns, the detention basin has been moved to a different location. However, we have repeatedly voiced our concern that the widening of the creek and the open space corridor still takes so much of our small parcel that the value of the property would be greatly reduced. (A developer is not going to buy one acre if it is going to lose a third or more of it, and we doubt if we could sell the property to an individual if they will only receive 2/3 of an acre and pay for one acre)

Unfortunately we were not able to attend the meeting that the Policy Planning Commission had on September 10th. During that meeting the Suggested Alignment A-2 to modify the alignment of Elder Creek was discussed. We do not understand why the creek cannot be moved a little further Northwest. The property behind ours is 9 acres and has nothing on it except a renter with his own trailer. Surinder Singh said at the meeting on October 24th that where ever possible the creek had been adjusted so as to not impact small parcels. The creek could be moved over a little further. (There is also a beautiful huge oak tree which will be right in the middle of the creek if the creek is not moved slightly.)

We were also very angry and distressed to learn that Planning Staff had several meetings with property owners who live along the creek corridors where Elder Creek and Gerber Creek meet and that only those who attended the last meeting were invited. Mr. Singh said that only those who spoke at that meeting were asked to attend, but Kathy Phillips was told of the meeting and she did not speak at that meeting. We have voiced out concerns at every public meeting We feel that we should have been informed of those additional meetings with planning staff and should have had the opportunity to attend. We also are distressed to learn that had we been at those meetings the creek probably would have been adjusted as we recommend because everyone else that attended were given concessions.

Regarding our suggested modification to the creek (Exhibit 3.4) , our suggestion need not be quite as drastic as portrayed on the map. These suggestions were drawn in a crude map with a feltip pen and we assumed that those of us who made recommendations would be contacted by planning and would be able to further refine our suggestions, (why else did they ask for our telephone number?) but no further opportunity was forthcoming. We did not even know that our suggestion was included in the DEIR.

This whole process with planning and the community meetings has been very frustrating. Every meeting we attended was nothing but the same thing over and over. Planning told us about the project and what stage in the development the project was at and every time any of the property owners had questions staff either couldn't answer them or the answers were unsatisfactory. We

CC: Comm, Plng, Co Co, DEIR

17.1

were given the opportunity only once to actually make recommendations when we drew our suggestions on the map and we thought that further follow up would be forthcoming but it was not. What were those meetings for if the opinions of the homeowners were not noted and responded to? We felt as if no one was listening to any of us.

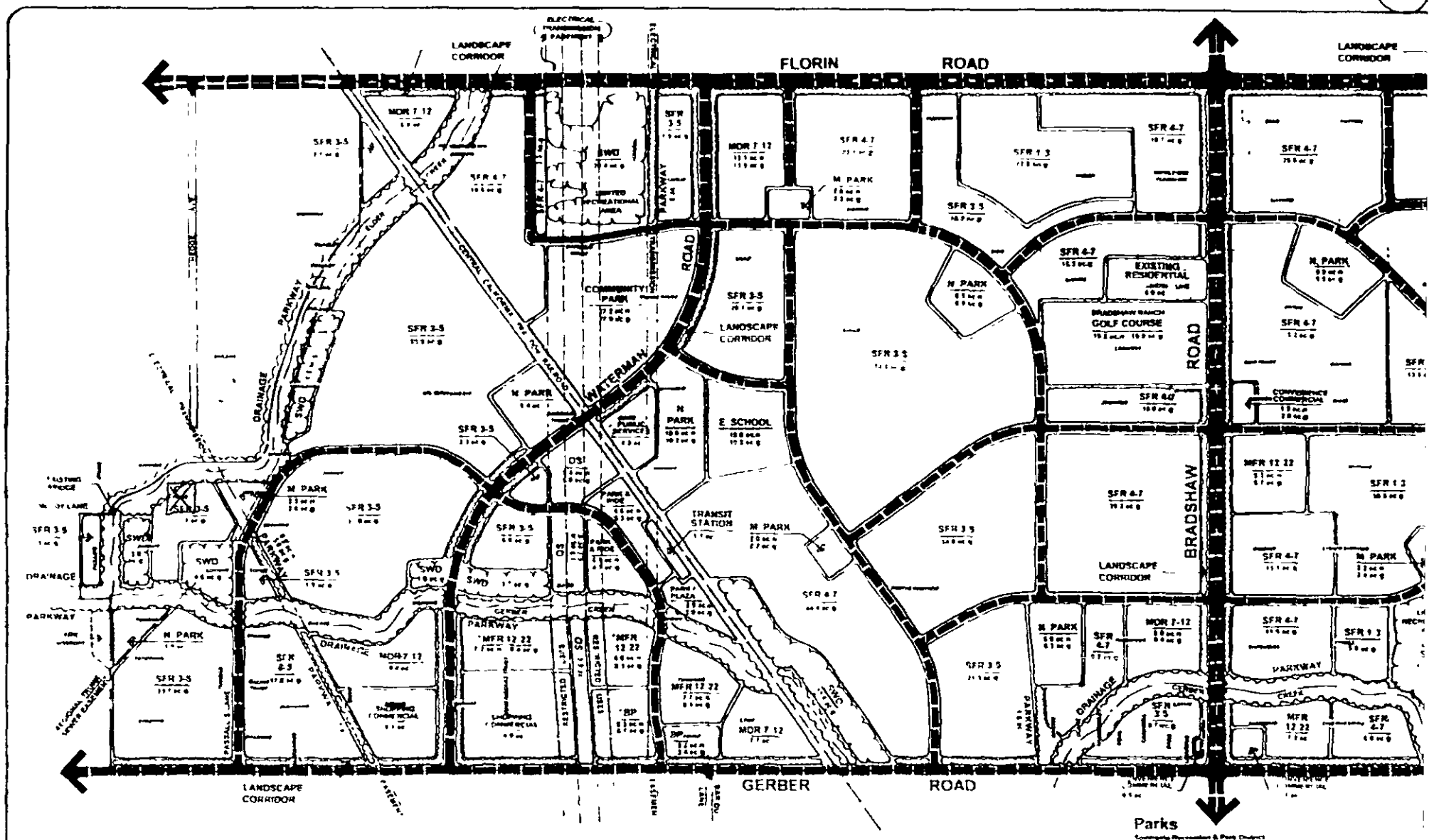
If we owned a larger parcel than one acre we would not be as concerned about the reduction in our acreage due to open space. But when you only have one acre, every foot you lose affects the overall value. Please accept our recommendation that the creek be moved. County planning staff concluded that realignment of the drainage channel is not seen as a significant impact to the proposed drainage plan, but that the extra expense to realign the drainage channel is not warranted. There are far more drastic and costly realignments being done in other places on the channel. However, if it is really impossible to change the creek alignment slightly, could the open space corridor at least be reduced to a minimum at that corner of our acre. Thank you for your consideration of this matter.

Thank you for taking the time to read such a long letter. Also please do not hold it against us for not speaking at your last meeting. Public speaking is very difficult for some of us. We now realize that we should have written a letter to you before. We had thought that the public meetings and the objections we voiced there would be enough. Hopefully we have not waited too long.

Sincerely,

Judith M. Wilson
Roy P. Pace
9091 McCoy Avenue
Sacramento, CA 95829
(916) 689-1021

17.2



LAND USE SUMMARY

N = Net Acres G = Gross Acres
All acreage is shown are gross unless otherwise noted

LAND USE	DENSITY RANGE	DENSITY FIXED COUNT	WEST AREA	WEST # UNITS	EAST AREA	EAST # UNITS	TOTALS AREA	TOTALS # UNITS
MULTI FAMILY RESIDENTIAL	12 to 22	16 (units)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MEDIUM DENSITY RESIDENTIAL	7 to 12	10 (units)	[illegible]	[illegible]			[illegible]	[illegible]
SINGLE FAMILY RESIDENTIAL	4 to 7	6 (units)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SINGLE FAMILY RESIDENTIAL	3 to 5	5 (units)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SINGLE FAMILY RESIDENTIAL	1 to 3	2 (units)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
EXISTING RESIDENTIAL			[illegible]	[illegible]			[illegible]	[illegible]
GOLF COURSE			[illegible]				[illegible]	
[illegible]			[illegible]				[illegible]	

LEGEND

C	COMMERCIAL
BP	BUSINESS PROFESSIONAL
MFR 12-22	MULTI FAMILY RESIDENTIAL
MDR 7-12	MEDIUM DENSITY RESIDENTIAL
SFR 4-7	SINGLE FAMILY RESIDENTIAL

Parks

Sacramento Recreation & Park District

Parks Required

[illegible]

Parks Shown

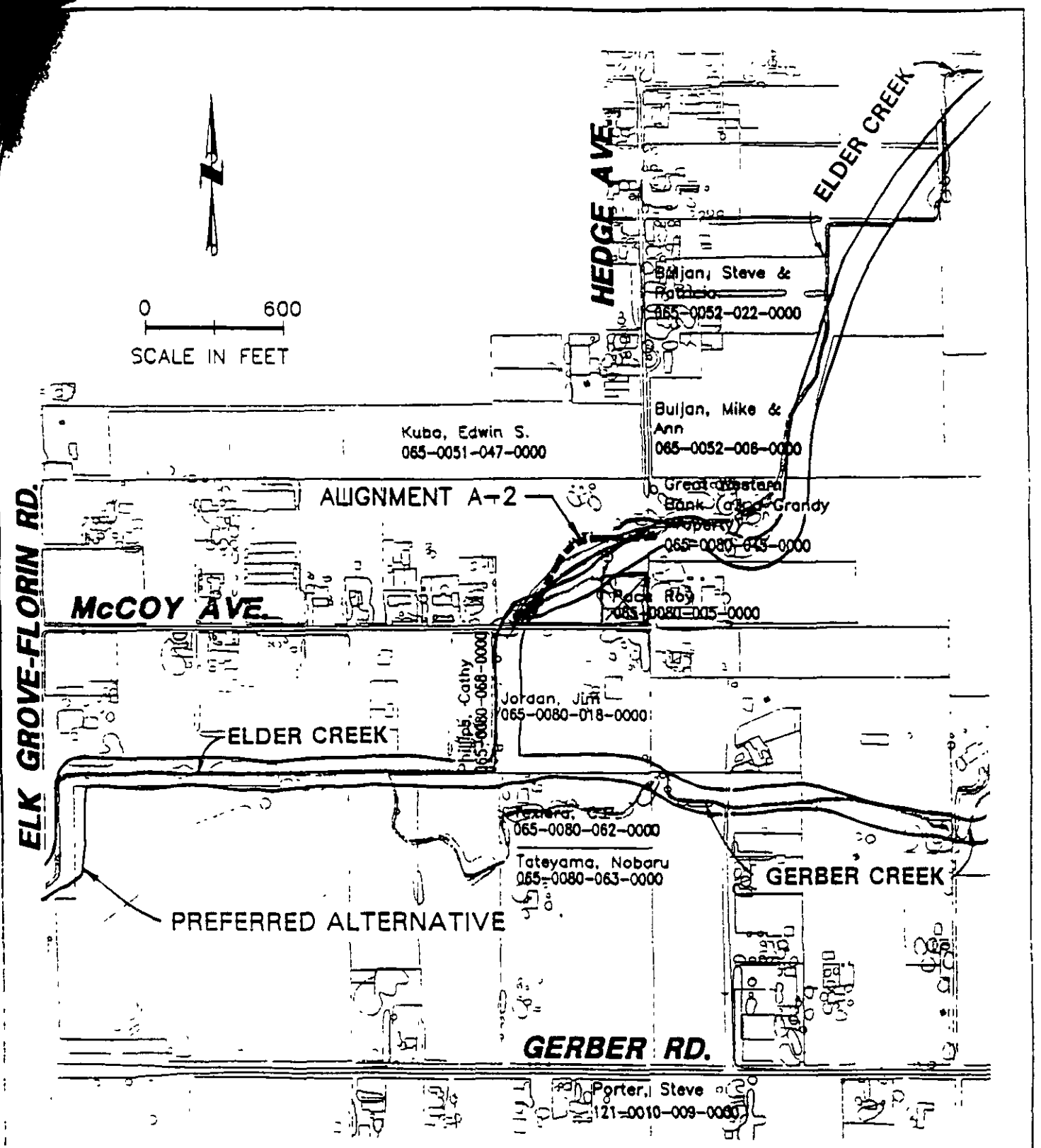
[illegible]

Schools

Elk Grove Unified School District

School Population Projection

Use	#DU'S	K-6		7-8		9-12	
		Factor	Attendance Population	Factor	Attendance Population	Factor	Attendance Population
SFR	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MFR	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
TOTAL	[illegible]		[illegible]		[illegible]		[illegible]



County of Sacramento Public Works Agency Water Resources Division & Planning Department	**North Vineyard Station Specific Plan Public Outreach Report**	Suggested Alignment A-2 **Modified Historic Alignment** **Exhibit 3.4**

17.4

J14

RECEIVED
DEC 3 '97
DEPARTMENT OF ENVIRONMENTAL REVIEW AND ASSESSMENT

County of Sacramento
Policy Planning Commissioners

DATE: 11-26-97

SENT TO: Commissioners: Inglis, La Berge, Nunes, Shelby, Bray

FAX NUMBER: 440-7593

FROM Cathy Phillips 9010 McCloy Ave, Sacramento

NUMBER OF PAGES INCLUDING COVER: 3

ADDITIONAL COMMENTS:

Dear Commissioners,

Enclosed with this fax is a copy of a letter dated Nov. 19, 1997, addressed to Mr. Surinder Singh, from me regarding the realignment of Ellen Creek on my property in the North Vineyard Station Specific Plan. If you have any questions please feel free to call me. I will be at the next Council meeting on Nov. 25, 1997 since I still wish to address the Council regarding this problem.

Thank you

Cathy Phillips

916-423-1447

CC: Comm, Plng, DERA, Co.Co.

(18.1)

Sacramento County Planning and Community Development Dept.
827 Seventh Street, Room 230
Sacramento, CA. 95814

Cathy Phillips
9040 McCoy Rd.
Sacramento, CA. 95829

November 18, 1997

Dear Mr. Surinda Singh:

Concerning the North Vineyard Station Specific Plan in regard to your recommended proposal presented to the Policy Planning Commission on October 14, 1997, I can substantially support this proposal with few modifications that I will present hereafter.

First of all I believe it was quite obvious that my neighbor's, Jim Jordon, proposal would be totally unfair to me, and would render my remaining property virtually useless. In addition to losing virtually everything of value, including my house, well, septic system, out buildings, barn, 75-100 trees, including approximately 25 fruit and nut trees, I would be left with approximately a mere 70 feet of frontage to access an approximately 600 foot deep parcel, which essentially is not much more than what would be required for an access road.

As I recall, your proposal would use the existing 75 foot drainage easement on my property to develop both the west slope of the new 120 foot wide channel and would include a 40 foot wide greenbelt. The remaining ninety feet required for the bottom and east bank of the channel would come from the west side of Mr. Jordon's adjoining property, which is currently undeveloped.

I would propose that the west forty feet of my easement reserved for the green belt be partially used for an access road along the west bank of the channel; however, I am greatly concerned about the liability I might incur with this greatly enlarged channel. I need to know who will assume the liability and attendant expenses for increased taxes and insurance.

One possibility of minimizing this liability would be for the County to finance, erect, and maintain a six foot fence, adjacent, and to the west of my proposed channel access road.

In regards to the channel on the south side of my property, which also has a 75 foot drainage easement, I can support a similar arrangement wherein all improvements, including the future greenbelt, will be contained within this easement. I would also require that the County provide a security fence, as I have previously proposed, for the channel on my east side.

)CONTUNIED) 18.2

Mr. & Mrs. Jordan
7471 Jordan Lane
Sacramento, Calif. 95829

RECEIVED
DEC 4 1997
DEPARTMENT OF ENVIRONMENTAL
REVIEW AND ASSESSMENT

Policy Planning Commission
County of Sacramento
700 "H" Street
Sacramento, Calif. 95814

December 4, 1997
Amended to letter dated Nov. 25,1997

Mr. Chairman,

This letter concerns the encrochment of the proposed North Vineyard Station Specific Plan creek alignments and open space on our home.

Our family has been in the South County since before California was a State. At present we are at eight generations. Our home is located at 7471 Jordan Lane. It's a 10 acre piece that was subdivided in March 1903. It is currently in agricultural use - dry farming: oats and animal husbandry. It has no easements and more importantly no creeks.

Back in the early 50's a diversion ditch was bootlegged in on our neighbors property which handles the sporatic summer run off (refer to exhibit A, marked in blue). The ditch cut's thru high ground and in winter trime has proven to be ineffective. It does not work! At present, when we get the volumne of water these new creeks are designed for, it follows the creeks historical natural alignment (see exhibit A, marked in yellow, and exhibit B, photographs).

The Boards instructions on the Specific Plans' boundaries were not followed. I'm refering to Phillips North and West property lines and the interfacing problems with the Champions Golf Course. Not enough of Elder Creek was encluded to comply with county policy. It has made it next to impossible to come up with an equitable solution.

The County's preferred alternative is to place Elder Creek and Gerber Creek onto our property. We've been dealing with the County Staff for over a year unsucessfully with other alternatives. It wasn't until the first meeting with your board and you directed Staff to meet with us to try and work something out that we started to see progress. The result of that is the moving of the County's preferred alignment of Gerber Creek off our property, closer to it's natural alignment and the reduction of the open space corroridor.

However, we're not done yet! The county's prefered alignment places Elder Creek on our land. This brings up some unanswered questions.....

1) Why weren't the Boards instructions followed concerning Specific Plan boundaries?

2) Every winter proves the ditch, (marked in blue,exhibit A & B), does not work, so why does the County want to put the creek there?

3) In Alternate A-1, Why does it say it will "significantly affect parcells by severance, creating additional constrants" when this condition already exists?

4) In Alternative B-4 the Staff says a 90 degree confluence is not hydraulically favorable, possibly increasing cost with channel lining and energy dissipation,

So why does Staffs' prefered alternative include a 90 degree bend when it's not necessary?

5) The Staff's prefered alignment and alignments A1, A2, B1, B2, B3, B4... all have some Pros and Cons, Why was Staff unable to recommend at least one of the other alternatives? Example A2.

6) According to the Staff prefered alternative the West bank of the diversion ditch can not be preserved because the ditch has to be filled in to create the designed flood plain -- Yes or No? See exhibit C.

7) Why do they want to preserve the West boundary of the diversion ditch which is basicly a hard pan surface, with a few almond suckers when the East bank has a nice big Oak tree on it? See exhibit C.

8) Why isn't all the existing 75' drainage easement on the East side of the Phillips property being used? The Staff's prefered alternative uses only 30' of easement and kills the Oak tree.

9) Is the floor level of detention ponds above or below the flow of the Creek? Why?

10) What is the proposed flood plain elevation and the flow line of the proposed creek 300' downstream from the bridge on McCoy Ave.?

11) It's been established that the subdivision runoff is toxic and the detention ponds are designed to solve this problem. Where does the toxic silt go that is harvested from these ponds?

12) What happens in winter time when flood water flushes the system, ponds silt and toxins directly from subdivisions into the creeks?

13) How are these toxins going to be kept out of ground water when the flow line of the creek will be 4' into extensive previous material? Notice agregate profile in well log, exhibit D.

14) Why does the Staff's prefered alternative impact us (one property owner) so severely with open space and two creeks when compared to the rest of the plan area?

15) As to alternative alignments the Staff and proponets have mistakenly singled us out and refuse to "trade faces", Why?

16) Is the DIRA administration, although County, strictly separate and uninflunced by the Planing dept. and other Depts of the County and is this strictly enforced?

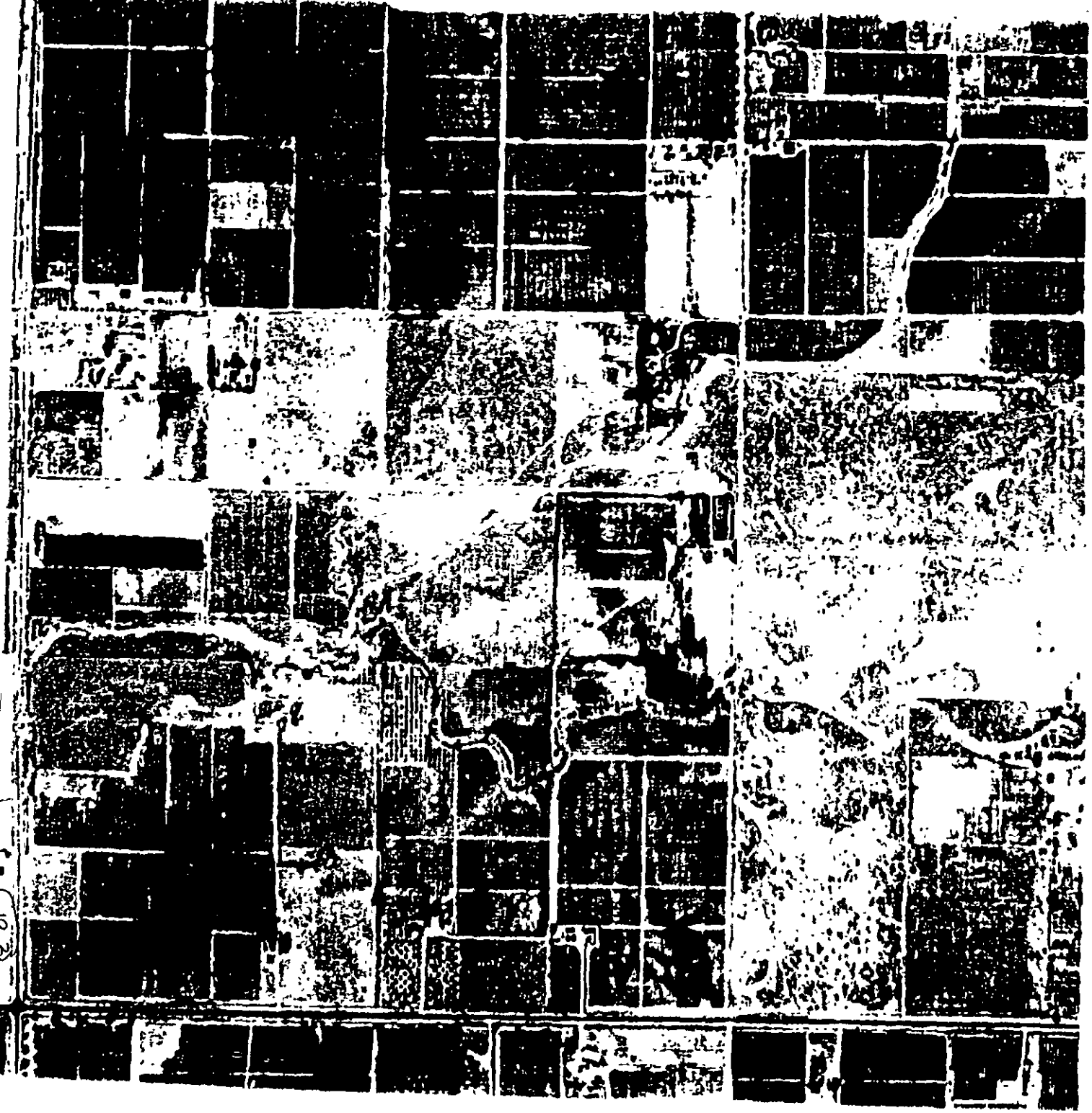
These questions need to be asked and answered in writting before you can make your recomendations. According to the provisions in CEQA we request this letter and the answers, in its intirity, be put in the final EIR - EIS for public record.

Sincerely,

Mr. and Mrs. Jordan

cc: Don Nottoli
Dennis Yeast
Planning Department
Water Resources

EXHIBIT A



JORDAN RANCH

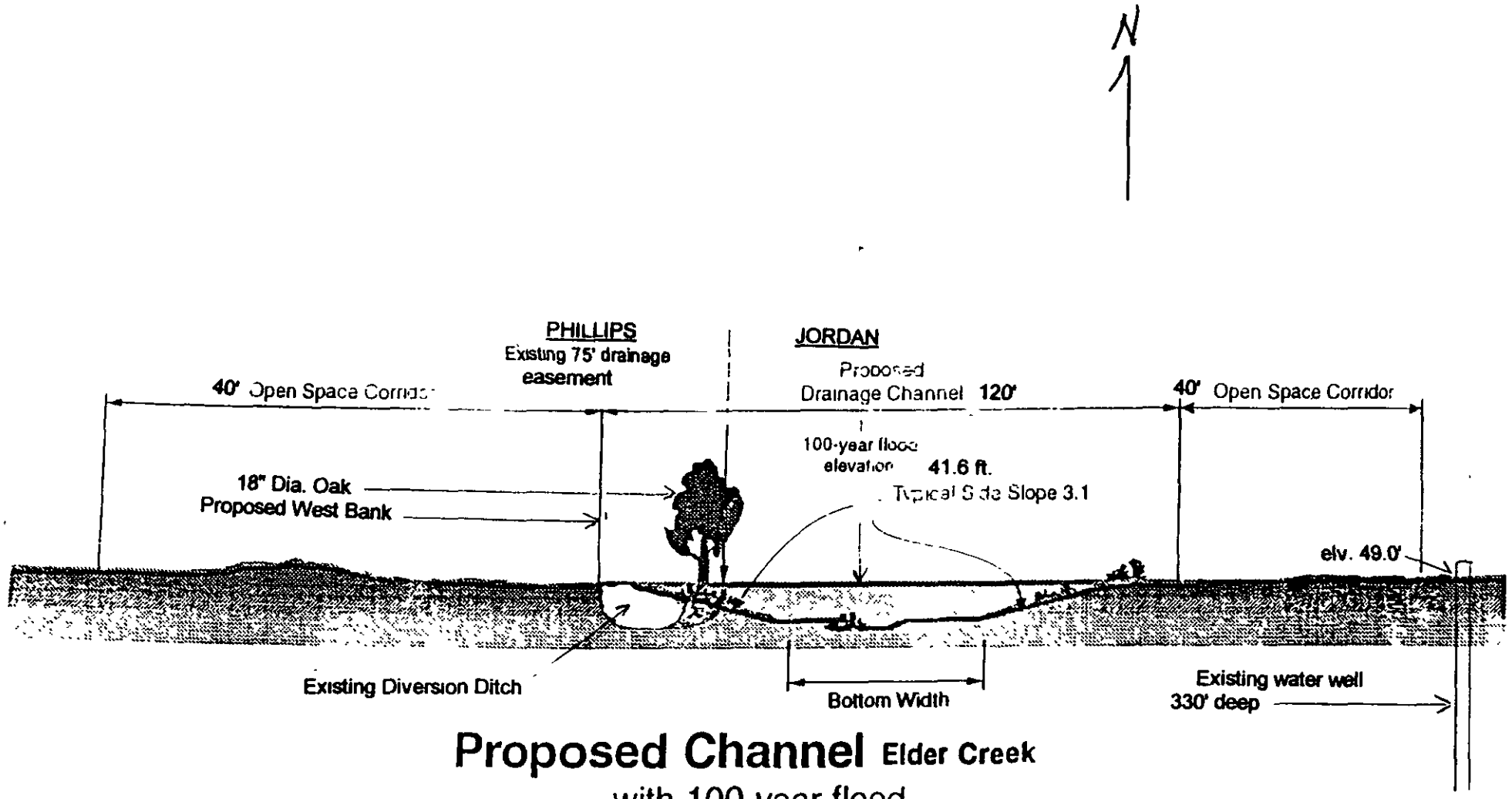
ELDER CREEK

DIVERSION DITCH

GERBER CREEK

N

EXHIBIT C



Proposed Channel Elder Creek

with 100-year flood

19.5

EXHIBIT D

TRIPLICATE
Owner's Copy
CT 92

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

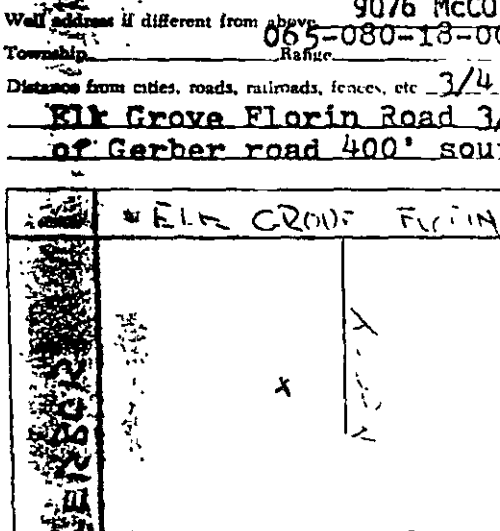
No. 079186

Notice of Intent No. _____
Local Permit No. or Date 5980

State Well No. _____
Other Well No. _____

(1) OWNER: Name [redacted] Jim Jordan
Address P.O. Box 26
City Elk Grove California Zip 95624

(2) LOCATION OF WELL (See instructions)
County Sacramento Owner's Well Number _____
Well address if different from above 9076 McCOY AVENUE
Township 065-080-18-00 Range _____ Section _____
Distance from cities, roads, railroads, fences, etc 3/4 mile east of Elk Grove Florin Road 3/4 mile north of Gerber road 400' south of McCoy Av.



WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well [X] Deepening [ ]
Reconstruction [ ]
Reconditioning [ ]
Horizontal Well [ ]
Destruction [X] (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic [X]
Irrigation [X]
Industrial [ ]
Test Well [ ]
Stock [ ]
Municipal [ ]
Other [ ]

(5) EQUIPMENT:
Rotary [ ] Reverse [ ]
Cable [ ] Air [ ]
Other [ ] Bucket [ ]

(6) GRAVEL PACK:
Yes [ ] No [X] Size _____
Diameter of bore _____
Packed from _____ to _____ ft.

(7) CASING INSTALLED: YES
Steel [X] Plastic [ ] Concrete [ ]

(8) PERFORATIONS: NO
Type of perforation or size of screen

From ft	To ft	Dia. in.	Gage or Wall	From ft	To ft.	Slot size
+18	165	10	10			

(9) WELL SEAL:
Was surface sanitary seal provided? Yes [X] No [ ] If yes to depth 5' ft
Were strata sealed against pollution? Yes [ ] No [X] Interval _____ ft
Method of sealing 9 sack cement and sand

(10) WATER LEVELS:
Depth of first water, if known 101 ft
Standing level after well completion 101 ft

(11) WELL TESTS:
Was well test made? Yes [ ] No [X] If yes, by whom? _____
Type of test: Pump [ ] Bailer [ ] Air lift [ ]
Depth to water at start of test _____ ft At end of test _____ ft
Discharge _____ gal/min after _____ hours Water temperature _____
Chemical analysis made? Yes [ ] No [X] If yes, by whom? _____
Was electric log made? Yes [ ] No [X] If yes, attach copy to this report

(12) WELL LOG: Total depth 395 ft Depth of completed well 39

from ft	to ft	Formations (Describe by color, character, size of material)
0	- 4	Top soil.
4	- 7	Hard pan.
7	- 15	Silt sand.
15	- 23	Sand.
23	- 54	Sand and cobble rocks 1-
54	- 101	Light brown
101	- 103	Sand. W/B.
103	- 140	Silt clay.
140	- 143	Silt sand.
143	- 160	silt
160	- 195	Light brown clay.
195	- 198	Sand and small rock. W/E.
198	- 220	Light brown clay.
220	- 222	Light green sand. W/T.
222	- 235	Gray green clay.
235	- 255	Rock and clay.
255	- 315	Gray green clay.
315	- 320	Rocks and sand. W/E.
320	- ---	Gray green clay.

WELL DESTRUCTION:
The old well was 60' from the [redacted] no well to the north it was 115' deep. made shure the old well was free of structions and cut the casing off 9' bellow grade level and filled the c with cement consisting of 9 sacks c and sand to make lyard.

Work started 7/8 19 80 Completed 7/15

WELL DRILLER'S STATEMENT
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

SIGNED _____ (Well Driller)
NAME Robert Allen Nix Well Drilling (Person, firm, or corporation) (Typed or printed)
Address 7913 Skander way
City Sacramento California Zip 95828
License No. 376587 Date of this report 10/9/80

DWR 188 (REV 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

(19.6)

Mr. & Mrs. Jordan
7471 Jordan Lane
Sacramento, Calif. 95829

Policy Planning Commission
County of Sacramento
700 "H" Street
Sacramento, Calif. 95814

November 25, 1997

Mr. Chairman,

This letter concerns the encrochment of the proposed North Vineyard Station Specific Plan Creek alignments and open space on our home.

Our family has been in the South County since before California was a State. At present we are at eight generations. Our home is located at 7471 Jordan Lane. It's a 10 acre piece that was subdivided in March 1903. It is currently in agricultural use - dry farming: oats and animal husbandry. It has no easments and more importantly no creeks.

Back in the early 50's a diversion ditch was dug on our neighbors property which handles the sporatic summer run off(refer to attached map, marked in blue). The ditch cut's thru high ground and in winter time has proven to be ineffective. It does not work! At present, when we get the volumne of water these new creeks are designed for, it follows the creeks historical natural alignment, (see map, marked in yellow and photographs).

The Boards instructions on the Specific Plans boundaries were not followed, I'm refering to Phillips North and West property lines. By not following thoes important instructions we have no room to work out an equatable solution to this problem.

The County's preferred alternative is to place Elder Creek and Gerber Creek on to our property. We've been dealing with the County Staff for over a year unsucessfully with other alternatives. It wasn't until the 1st meeting with your board and you directed Staff to meet with us to try and work something out that we started to see progress. The result of that is the moving of Gerber Creek off our property, closer to it's natural alignment and the reduction of the open space corroridor.

However, we're not done yet! The county's prefered alignment places Elder Creek on our land. This brings up some unanswered questions.....

1)Every winter proves the ditch, marked in blue, does not work so Why does the County want to put the creek there?

2)In Alt. A-1 Why do they say it will "significantly affect parcells by severence creating additional constrants" when

19.7

this condition already exists?

3)Alternative B-4 says a 90° confluence is not hydraulically favorable, possibly increasing cost with channel lining and energy dissipation,So Why soes Staffs prefered alternative includ a 90° bend when it's not necessary?

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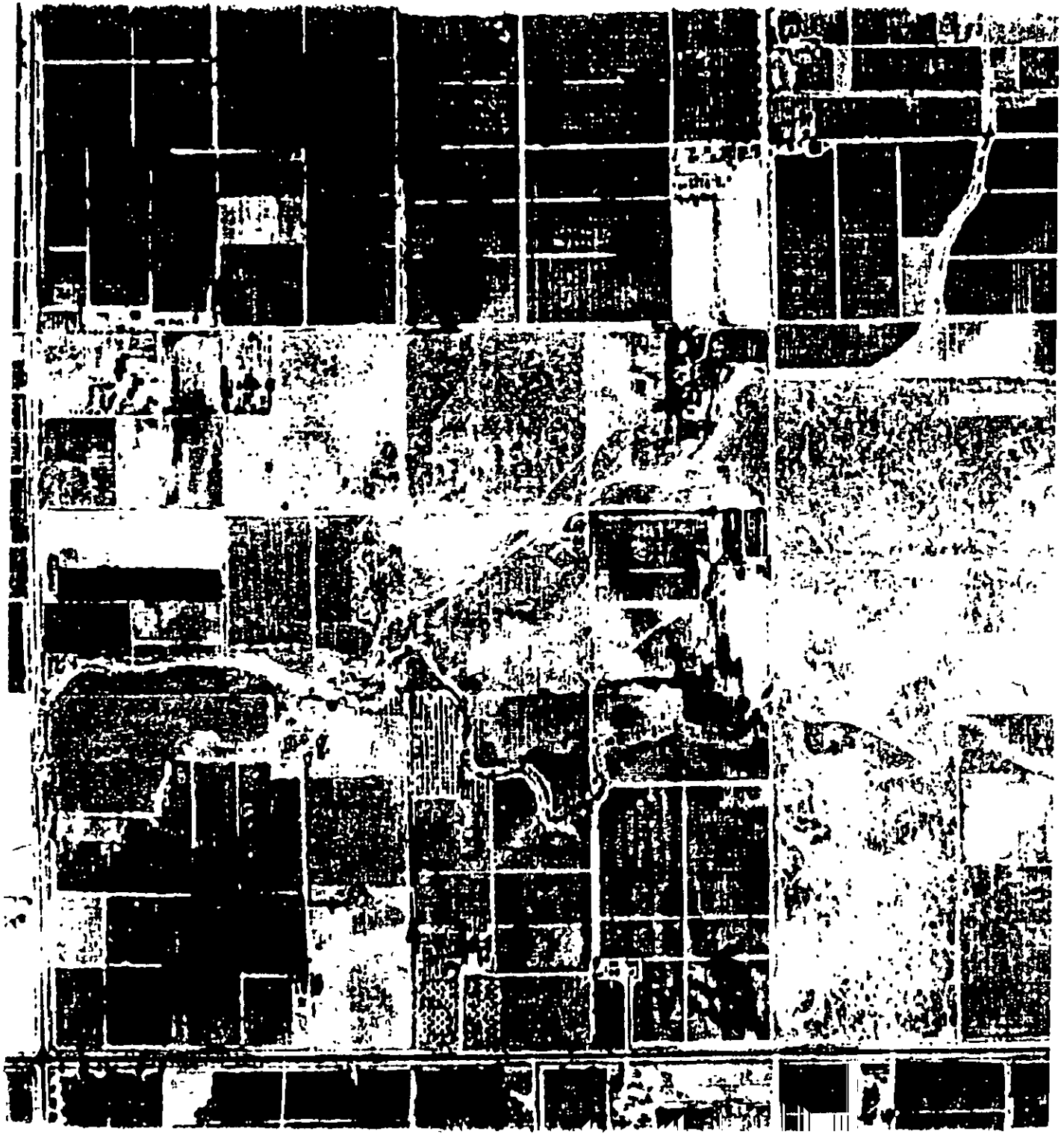
These questions need to be asked and answered before you can make your recomendations. According to the provisions in CEQA we request this letter, in its intirity all 4 pages, be put in the final EIR - EIS for public record.

Sincerely,
Mr. & Mrs. Jordan
Mr. & Mrs Jordan

cc:Don Nottoli
Dennis Yeast

19.8



JORDAN RANCH

ELDER CREEK

DIVERSION DITCH

GERBER CREEK

19.9

N

TAYLOR & HOOPER
A PROFESSIONAL CORPORATION
ATTORNEYS
1435 RIVER PARK DRIVE SUITE 300
SACRAMENTO, CALIFORNIA 95815
TELEPHONE (916) 929 5545
TELEFAX (916) 929 0283

JOHN M TAYLOR
B DEMAR HOOPER
JAMES B WILEY
R BRUCE STELBING
KATHLEEN R MAKEL

September 5, 1997

Mr. Dennis Yeast
COUNTY OF SACRAMENTO
Department of Environmental Review & Assessment
827 7th Street, Rm. 220
Sacramento, CA 95814

Re: Comments to Draft Environmental Impact Report for North Vineyard Station Specific Plan (State Clearinghouse No. 96032057)

Dear Dennis:

Taylor & Hooper represents Larry and Marsha Thompson. The Thompson's property is located immediately north of the North Vineyard Station Specific Plan area and is bisected by Elder Creek. The Thompsons appreciate the opportunity to comment on the referenced Draft Environmental Impact Report (DEIR).

The Thompsons are concerned about the referenced project's environmental impact on their property's use and value. This letter discusses their concerns and asks specific questions regarding the County of Sacramento's (hereafter "County") plans regarding their property.

Detention Basins

Exhibit 11.2a of the DEIR shows that a detention basin, specifically E-26, is located in the general area of the Thompson property. Has the County developed a plan for the watershed north of Florin road? Has the County committed any resources or conclusively decided that a detention basin will be located on the Thompson property?

Width of Open Space Corridors

What is the proposed width of the open space corridor on Elder Creek immediately north of Florin Road? Page 11.16 of the DEIR states that the open space corridors' widths will vary between 150 and 240 feet. According to staff's presentation at the August 27, 1997, Planning Commission Meeting, the preferred plan calls for an open space corridor width of between 250 and 425 feet. Further, on August 27, 1997, staff mentioned that environmental groups have requested an alternative of open space corridors of up to 600 feet in width. Thus, please clarify what the width of the open space corridor will be on Elder Creek immediately north of Florin Road.

20.1

Acquisition of Open Space Corridors' Property

Does the County plan to acquire the property associated with the open space corridor located on the Thompson property? Does the County have any plans for acquiring the remaining portions of the Thompson property outside the open space corridor? If the County plans to acquire the Thompson property: (1) when will the County acquire the Thompson property; and (2) will the County use the property's current zoning for estimating its market value?

Relationship to the Drainage Master Plan

When will the Drainage Master Plan for Elder Creek be available for public review? Will Elder Creek's Drainage Master Plan address the remaining property outside the North Vineyard Station Specific Plan area? Is the Specific Plan's drainage plan being coordinated with the larger Drainage Master Plan?

General Plan Requirement and Floodplain

According to Page 7 of the County's Land Use Element:

> The Land Use Strategy Diagram designates most of the urban and urbanizing waterways floodplains as Recreational to preserve these natural corridors for public use. The designation was based on the latest FEMA 100 year floodplain data available when the diagram was prepared. The County will be implementing Master Drainage Plans during the term of the general plan and the 100 year floodplains are likely to be modified by this process. The County will therefore entertain general plan amendment applications for land designated as Recreational which is subsequently removed from the FEMA 100 year floodplain.

Please state whether the County plans to comply with this policy by entertaining general plan amendment applications for land currently designated as Recreational that will subsequently be removed from the FEMA 100 year floodplain.

Again, we appreciate the opportunity to comment on the DEIR for the referenced project. Please call if you have any questions or concerns.

Very truly yours,

James B. Wiley

cc: Larry & Marsha Thompson

RBS/1988.1/L.DYeir

20.3

Law Offices of
GEORGE E. PHILLIPS

555 University Avenue, Suite 200
Sacramento, California 95825
Telephone (916) 929-8881
Telefax (916) 929-8882

September 5, 1997

RECEIVED
SEP 5 - 1997
DEPT OF ENVIRONMENTAL
REVIEW & ASSESSMENT
SACRAMENTO COUNTY

Dennis Yeast, Director
Sacramento County
Department of Environmental Review and Assessment
827 Seventh Street
Sacramento, California 95814

Re: North Vineyard Station Specific Plan
Control No. 93-SFB-0238

Dear Dennis,

On behalf of North Vineyard Station Property Owners Group, the project developer, we have reviewed the draft environmental impact report (DEIR) for the North Vineyard Station Specific Plan. Set forth below are our comments on the document.

1. Page 1.5, Minor Amendments, second paragraph on page. The Planning Director's authority to make minor amendments to the Plan as an administrative matter is valid only until the issuance of the first building permit for any parcel that is created consistent with the Specific Plan. The wording of this paragraph could be misinterpreted to mean that no minor modifications to the plan may be made after the first building permit is issued anywhere within the Specific Plan. Any parcels created subsequent to and consistent with the Specific Plan will result from subsequent Tentative Mapping efforts. Since most of the Specific Plan is single family residential involving only one permit per parcel created, granting authority to make minor changes up to the first building permit on any subsequently created parcel is excessive.

2. Page 1.7 and throughout the document. Specific Plan Proponents. Specific Plan proponents, also known as participating property owners for the project include: Winncrest Homes, US Home, Florin Investors, Cal Maple Development and Morvai. Saca Properties and East Bradshaw Gerber

21.1

Associates are no longer participating property owners. Many of the addresses shown on this page are incorrect. A revised listing of Specific Plan proponents is included as Exhibit A.

Throughout the document, there are references to the proponent properties and participating properties. Please modify references and conclusions that are based on participating properties. In some instances, the Draft EIR includes evaluation of properties that are no longer participants. Please clarify in the Final EIR that technical studies may contain technical data for properties that are no longer considered participating.

3. Reference to project acreage varies throughout the document. The acreage of the North Vineyard Station Specific Plan area is 1,590± acres.

4. Page 2.1, Preferred Specific Plan. Clarify that the Specific Plan was developed through a public outreach process which included specific input from the Citizens Advisory Council (CAC), County Staff, project sponsors and the general public.

5. Page 2.1, Discussion of Alternatives. The distinction between the 10% density reduction alternative and 15% density reduction alternative occurs in the holding capacity for low density single family (1-5 units per acre). In the 10% reduction plan, the holding capacity for single family residential (1-5 units) is 5 units per acre; in the 15% reduction plan, the holding capacity for single family residential is 4.5 units per acre. This difference in holding capacity accounts for the difference in units between the 10% and 15% density alternatives. Please make this clarification for similar discussions on pages 4.2, 4.3, 5.6 and 5.8.

6. Page 2.3, first paragraph. This discussion should be augmented to include reference to the designation of the plan area in the County's General Plan as an Urban Development Area. Holding capacity assumed for the plan area by the General Plan should be discussed.

7. Page 2.4, Mitigation Measures LU-1 and LU-2. These suggested mitigation measures are inconsistent with and contrary to the consensus plan developed by County Staff, CAC and property owners.

8. Pages 2.6 and 2.7, Schools, Libraries, Parks and Open Space. References should be made to Elk Grove Unified's existing fee structure in which the project will participate. There should be library and park components to the fee developed for the plan area.

9. Page 2.8, Public Facilities Financing. The last paragraph states that the NVSSP Financing Plan is expected to recommend funding mechanisms for all development projects, whether for the Preferred Plan, 10% Alternative and 15% Alternative. The financing plan will recommend funding mechanisms for whichever plan is adopted by the Board and will provide information to determine if financing is feasible for alternatives.

10. Page 2.10, Traffic and Circulation. Cumulative No Project conditions refer to roadway segments for Excelsior, Elder Creek and Gerber Roads experiencing physical deficiencies based on substandard travel lane and shoulder widths. Other roadway segments experiencing cumulative no project increases in traffic would also result in physical deficiencies, such as Florin Road, Bradshaw Road, portions of Elk Grove Florin Road, etc. These roadway segments should be listed also.

11. Page 2.11, Significant & Unavoidable Traffic Impacts. Item 1, Bradshaw Rd. impact is a cumulative plus project impact. Existing plus project conditions do not result in this impact. Since the cumulative condition does not yet exist, stating that this project results in this significant and unavoidable impact is not accurate. It would be future approval of other projects that would result in this impact. Item 2 correctly states that the impact is a cumulative conditions impact.

12. Page 2.12, Transit System Mitigation Measures. Some mitigation measures listed are for roadways with very minimal project impact. Please include discussion of how the Capital Improvement Program will recognize this and divert fair share funding from these roadways to more viable and severely impacted facilities.

13. Page 2.13, Transit System Mitigation Measures TR-6, TR-7: Roadway widening to minimum width standards. These roadways are already below standards for rural arterials. Project fair share funding should be diverted to make other more impacted roadway improvements.

14. Page 2.13, Transit System Mitigation Measure TR-11 Calvine Rd. The North Vineyard Station project is within the Elk Grove, West Vineyard Public Facilities Financing Plan, and also within the influence area of the concurrently processing Vineyard Springs Comprehensive Plan. This project's fair share contribution should be diverted to other roadway improvements.

15. Page 2.14, Transit System Mitigation Measure TR-15. Note that existing capacity conditions allow nearly 92% of the project to be built out before widening is required. Because this is a State route, project fair share

contributions may be diverted to other, more viable and impacted roadway projects. This comment applies to TR-12 and TR-13, intersection improvements.

16. Page 2.15, Transit System Mitigation Measure TR-17. The EIR includes discussion of dual southbound left turn lanes, yet the measure requires only single left turn lanes north and south. Please clarify these requirements.

17. Page 2.20, Hydrology and Flooding. The EIR introduces the Drainage Master Plan (DMP) for the North Vineyard Station Specific Plan as being developed by the proponents. It also states that the DMP proposes construction of flood control and stormwater quality detention basins, within and downstream of the Specific Plan area. This statement implies that the project proponents recommend downstream detention facilities, which is not the case. The recommendation for downstream detention was inserted by County Water Resources Division and should be so characterized whenever it is referenced throughout the EIR.

18. (a) Page 2.21, Hydrology and Flooding, last paragraph. This paragraph states that any urban development within the NVSSP area will necessitate the construction of channel improvements downstream. While this statement is consistent with the general statements in the DMP, the DMP also indicates that small, isolated areas may be able to develop by installing temporary detention and pumping to mitigate for increase in runoff.

(b) This paragraph states that the NVSSP DMP determined that there would be increased 100 year water surface elevations and increased out-of-bank flooding in downstream areas along Elder Creek unless off-site Detention basin E20 is constructed, which is inaccurate. The DMP states that alternatives such as constructing and optimizing the on-site detention facilities reduces the 100 year flows to existing conditions downstream. (within 10-15 cubic feet per second, or less than 1% difference) Studies completed for the on-site basins could be further refined during actual design or subsequent master plan refinement to reduce the flows even lower.

(c) Basin E-20 is only needed if optimization of the on-site detention basins is not done. It would be foolish to construct on site detention basins without optimizing their performance with minor changes in weir elevation. Studies done by an outside consultant for the County of Sacramento Water Resources Division indicated that the flows downstream from the project are actually less than existing conditions. There is a statement that the stage, or water surface elevation can be higher. Please provide information on how the water surface elevation can increase when the flows decrease. The EIR should be revised to reference the statement that Basin E-20 is required as a

statement by Sacramento County Water Resources, not by the authors of the DMP technical analysis.

19. Page 2.24 and 2.25, Mitigation Measures HY-1 and HY-2. These are not mitigation measures. If the Plan is revised prior to its approval, then there are no impacts to mitigate and thus, these mitigation measures are not required.

20. Page 2.24 and 2.25, Mitigation Measure HY-3. Reference to requirements for construction of Basin E20 should not be to the NVSSP DMP, but rather a separate recommendation by County Water Resources Staff. (See Comment 17 above). Delete the term "..., including construction of Detention Basin E20 downstream of the Specific Plan area,". If necessary, append this same statement to the end of the mitigation measure with a reference to requirements by Sacramento County Water Resources Division.

It is recommended that specific references to Basin E20 be eliminated. No other specific improvement is referenced in any other mitigation measure. The language in the second paragraph of this mitigation measure includes the correct approach, by identifying flexibility to "...demonstrate that phased improvements will provide adequate urban flood protection to the proposed on-site development, and will not increase flood risks in downstream areas." This same flexibility should be provided with the issue of Basin E20.

21. Page 2.24, second paragraph. Is mitigation for non-oak native trees required under the County's tree ordinance? If not, this obligation should be deleted.

22. Page 2.24 and 2.25, Mitigation Measures HY-6 and HY-7. Recommend elimination of specific reference to Basin E20. It is the only ultimate project facility that is specifically referenced. Listing a general solution for the Gerber Creek overflow condition is consistent with the DMP.

23. Page 2.29, Water Supply. Phasing of proposed development. The planned widening of Elk Grove Florin Road from Calvine to Gerber will include extension of a twelve inch (12") diameter Zone 40 Transmission main to the intersection of Gerber Road. This facility will be available for initial development connection as a primary or secondary source of supply. This facility was not mentioned in the original Water Supply and Distribution Master Plan.

24. Page 2.36, second full paragraph. Reference should be made to the pending agreement between the County, DFG and the Nature Conservancy regarding County adoption of a Swainson Hawk mitigation fee.

25. Section 3, Alternatives. This section discusses the No Project Alternative and an Increased Density/TOD/Wetlands Preserve Alternative. This section should also discuss the three other project alternatives that have been prepared: the 10% Density Reduction Alternative, 15% Density Reduction Alternative, and the Modified Core Alternative.

26. Page 3.2, Increased Density/TOD/Wetlands Preserve Alternative. The description of the Increased Density/TOD/Wetlands Preserve Alternative as the environmentally superior alternative does not include a description of technical analyses. Please describe the findings of the technical analyses (land planning, drainage, sewer, water, circulation, biological and cultural analyses) which support the Increased Density Alternative as an environmentally superior alternative. Also, please include a land use exhibit and corresponding table of uses (with acreages and unit counts) to describe the Increased Density/TOD/Wetlands Preserve alternative.

27. Page 3.3, Increased Density/TOD/Wetlands Preserve Alternative, first paragraph. Reference should be made to the specific holding capacity for the plan area assumed in the General Plan.

28. Page 4.4, Table PD-1. Confirm land use acreages for the preferred plan and alternatives. Table PD-1 is not consistent with information contained on page 5.26.

29. Page 4.6, Table PD-2. The acreages shown for the County General Plan Existing scenario add to a number greater than the project acreage of 1,590. Please verify these acreages.

30. Page 4.8, Specific Plan Document. Please note that the Draft EIR is based on the public review draft of the North Vineyard Station Specific Plan dated May 28, 1997.

31. Page 4.9 Specific Plan technical documentation. Technical analyses prepared for Basin E20, as well as the project's groundwater study should be included on the list of technical documentation.

32. Page 5.3, Preferred Specific Plan. Similar to Comment 4 above, co-sponsors should be defined as County Staff, CAC and project proponents.

21.6

33. Page 5.10, second paragraph. Discussion requires greater context regarding placement of the core area on Gerber Road. The North Vineyard Station CAC's rationale for locating the core area adjacent to Gerber Road was in response to urbanization planned south of Gerber Road, not north of Florin Road.

34. Page 5.11, third paragraph. The at-grade crossing of the railroad at Waterman Road will require approval by the Public Utilities Commission. The EIR should discuss the necessary approval by the PUC.

35. Page 5.14, fourth paragraph. TOD areas identified on the General Plan Land Use Diagram were represented by planning staff as illustrative of TOD opportunities and not intended to be specific designations for the property identified. This discussion is contrary to that representation. Moreover, the plan area, when designated by the Board as a Urban Development Area, did not have a land plan adopted.

36. Page 5.15, second full paragraph. Again, TOD designations were intended to indicate opportunities for TOD locations and not an actual designation of the affected area as a TOD. This language is inconsistent with that intention.

37. Page 5.19, top paragraph. The language ". . . there does not appear to be any clear rationale for not identifying and designating a TOD site in the Plan Area . . ." is contrary to the consensus plan developed by the CAC, staff and property owners. Additionally, there has been no demonstration that adequate transit facilities will ever become available to the plan area to justify the density and intensity of TOD development.

38. Page 5.23, multi-family discussion. The Draft EIR indicates that it is highly unlikely that the Plan will yield its expected share of multi-family units. The plan includes 39 acres designated for multi-family units, which is expected to yield 637 units. The 39 acres planned for multi-family uses exceeds the County's target (Table LU-4) range of 31 to 35 acres and the planned unit yield of 637 is within the County's range of 620 to 700 acres. The plan also includes 28.6 acres of commercial land use, which includes SC and LC zoned land, which may be used for multi-family units. The conclusion that the project will not yield its expected share of multi-family units is subjective and without merit.

39. Page 5.24, second full paragraph. See comment #33 above related to core relocation discussion.

40. Page 6.4, top paragraph. The area to be serviced by Station 52 will likely serve a greater area than just the plan area. As such, the cost of the station's improvement and equipping should not be borne by this project alone.

41. Page 11.2, top paragraph. The objectives stated clearly identify an intent to reduce downstream existing flows and their related impacts on existing developed areas both within the County and the City of Sacramento. Subsequent discussion of the master plan facilities to achieve these goals does not mention funding sources other than fees or financing exacted from new development. Is it the stated intent of the Elder/Gerber Creeks Basin Master Drainage Plan to have new development fund this benefit to existing development?

42. Page 11.2, paragraph 4. In Chapter 9, page 9.3 of the Elder and Gerber Creeks Technical Appendix: UNET Analysis (January, 1997), prepared by Douglas Hamilton, P.E., for the County of Sacramento, the statement is made that Stand Alone Conditions 100-year event with the Laguna Creek over spill results in a decreased peak flow at the City boundary without basin E-20.

However, the study also finds a stage increase of approximately 0.5 feet downstream of the City boundary. The County has not provided information supporting the increased stage with decreased flow or its significance. The County's Elder/Gerber Creek DMP objective No. 1 that has been met. Information explaining the stage increase and its significance has not been provided by County WRD.

43. Page 11.6, paragraph 3. Tables HY-3 and HY-4 illustrate several alternatives to reduce Stand Alone Condition peak flows at the City limit to at or below existing levels. Stand Alone Case 2 achieves this objective without construction of Basin E20 through optimization of the weir elevations for Basins G41 and E24A. The last sentence of this paragraph in the DEIR should be revised to the following:

> *"Tables HY-3 and HY-4 illustrate that construction of certain ultimate facilities would be needed to reduce stand alone peak flows at the City limit to existing levels."*

44. Page 11.21, paragraph 3. As discussed in the NVSSP DMP, an extreme worst case Stand Alone Conditions scenario was prepared. The results of this analysis show that the drainage facilities proposed in the NVSSP Preferred Drainage Plan without the construction of Basin E20 adequately mitigate for the project's impacts as well as impacts associated with outside regional influences beyond the scope of this project's DMP. Please expand the discussion to include this information.

21.8

45. Page 11.22, third paragraph. This paragraph identifies a low dam constructed across the flow path which results in upstream water surface elevations which cause overland flow diversion outside the natural creek channel. General Plan Policy CO-104 requires removal of unauthorized fill in the 100-year floodplain at the property owners expense. Removal of this fill would possibly reduce the temporary mitigation which will otherwise be necessary. Please include discussion consistent with County policy that requires removal of this fill in the floodplain.

46. Page 11.27, paragraph 4, No. 3. Either construction of Basin E20 or optimization of the weir elevations for Basins G41 and E24A would eliminate or reduce the downstream impacts to a less than significant status. Throughout other areas of text of this DEIR, the approach utilizing optimization of the weir elevations for Basins G41 and E24A is not stated as a viable alternative to construction of off site Basin E20. This study has proven to mitigate impacts to existing conditions and should be included in the discussion.

47. Page 11.28, Supplemental WRD Conclusion and paragraph preceding. Please provide the information and technical analysis that lead to conclusions regarding the need for Basin E20. On-site Basin E24A is a large basin located at the confluence of Elder and Gerber Creek. This basin provides flexibility in the system for timing variability on either creek in the ultimate and interim conditions.

48. Page 11.29 Phased Development with Temporary Pumping Facilities. Reference is made to statements in the Executive Summary and Mitigation Measures, which draw conflicting conclusions than the facts presented in this section. (page 2.21) This section indicates that limited initial development could occur with temporary detention basins and pumping. Modify the Executive Summary to be consistent with findings of the DEIR text and the technical studies.

49. Page 11.37, paragraph 2. The Stand Alone Condition Case 2 provides an alternative which reduces impacts to a less than significant level without the construction of Detention Basin E20. The wording, "including the construction of Detention Basin E20" should be deleted.

50. Page 11.45, Mitigation Measures HY-6 and HY-7. In these mitigation measures, the wording, "including the construction of Detention Basin E20" should be deleted.

21.9

51. Page 14..5, Wetland Acreage, Table BR-2. Please revise Table BR-2 to reflect wetland acreage within participant and non-participant properties, consistent with Comment 2 above.

52. Page 14.37, Mitigation Measure BR-2, On-Site Wetland Preserve. If all impacts are mitigated on-site, the acreage required for mitigation will be significantly less than 200 acres. Please include justification for requiring a mitigation area of 200 acres.

53. Page 14.28, Trees. The Draft EIR states that 48 trees exist within participating properties. Please revise this section to reflect the change in participating ownerships. Also, see comment 57 related to arborists reports.

54. Page 16.4, Technical Study/Site Assessment. Please revise this section to reflect the Environmental Site Assessment dated March 1996 (see comment 58 below).

55. Page 16.26, Required Site Reconnaissance. The last paragraph on the page is confusing. The Specific Plan does not recommend soil sampling and testing. The environmental site assessment includes recommendations for these properties.

56. Pages 16.26, 16.29, and 16.30. Please clarify the addresses of the properties listed for cleanup.

57. Technical Appendix D, Arborist Report. The arborist reports in the technical appendix include data for properties which are no longer considered participating property owners. For clarification, please use the enclosed tree summary as an inventory of trees located on participating properties.

58. Technical Appendix K, Hazardous Materials Assessment, also known as Environmental Site Assessment. The Environmental Site Assessment technical document, prepared by Wallace-Kuhl & Associates, that is included in Appendix K was superseded by a revised document dated March 1996. A copy of the March 1996 document has been provided to DERA previously. Please include the most current version of this document in the Technical Appendix.

59. Technical Appendix and throughout EIR. A Geotechnical Engineering Report was prepared for the project by Wallace-Kuhl & Associates (dated May 31, 1995) and submitted to County Planning and DERA for use in preparing the Draft EIR. Information from this technical study should be used in the Draft EIR analysis and the technical report should be included in the Technical Appendices.

Exhibit A

Specific Plan Proponents

Winncrest Homes
9985 Folsom Boulevard
Sacramento, California 95827
Contact: Mike Winn

North Vineyard Investors
US Home Corporation
2366 Gold Meadow Suite 100
Gold River, California 95670
Contact: Brian Bombeck

Florin Investors
9985 Folsom Boulevard
Sacramento, California 95827
Contact: John Reynen

Cal Maple Development
P.O. Box 19034
Sacramento, California 95819
Contact: Phil Courey

Morvai
Harsch Investment Corp.
1121 SW Salmon Street
Portland, Oregon 97205
Contact: Mina Morvai

Representative
Law Offices of George E. Phillips
555 University Avenue Suite 100
Sacramento, California 95825
Contact: George Phillips

Law Offices of
GEORGE E. PHILLIPS

555 University Avenue, Suite 200
Sacramento, California 95825
Telephone (916) 929-8881
Telefax (916) 929-8882

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SEP 12 1997

DEPT. OF ENVIRONMENTAL
REVIEW & ASSESSMENT
SACRAMENTO COUNTY

September 9, 1997

Dennis Yeast, Director
Sacramento County
Department of Environmental Review and Assessment
827 Seventh Street
Sacramento, California 95814

Re: North Vineyard Station Specific Plan
Control No. 93-SFB-0238

Dear Dennis,

On behalf of the North Vineyard Station Property Owners Group, we submitted a letter to you, dated September 5, 1997, with our comments regarding the North Vineyard Station Specific Plan Draft Environmental Impact Report. The following clarifies Comments #14 and #26 of our letter.

Comment #14 incorrectly states that the North Vineyard Station project is within the Elk Grove/West Vineyard Public Facilities Financing Plan. This comment refers to the Calvine Road project which is within the Elk Grove/West Vineyard Public Facilities Financing Plan.

Comment #26 refers to the Increased Density/TOD/Wetlands Preserve Alternative. The intent of this comment was to state that there are no technical studies (land planning, drainage, sewer, water, circulation, biological and cultural analyses) that support the conclusion that the Increased Density Alternative is environmentally superior to any of the other alternatives. We are not suggesting that additional technical studies be prepared for the alternatives.

21.13

Please call me if we can provide further clarification.

Very truly yours,

George Phillips

George E. Phillips

cc: Surinder Singh
Mike Winn
Brian Bombeck
John Reynen
Phil Courey
Mina Morvai
Les Clark
Donn Reiners

Law Offices of
GEORGE E. PHILLIPS

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October 21, 1997

RECEIVED
OCT 22 1997
DEPARTMENT OF ENVIRONMENTAL
REVIEW AND ASSESSMENT

Joyce Horizumi
Sacramento County
Department of Environmental Review and Assessment
827 Seventh Street
Sacramento, California 95814

Re: North Vineyard Station Specific Plan
Control No. 93-SFB-0238

Dear Joyce,

The following information is in support of comments in our letter, dated September 5, 1997, regarding the North Vineyard Station Draft EIR. The information below (in plain type) is ordered to correspond, by number, to comments in our DEIR comment letter (in bold type).

2. Page 1.7 and throughout the document. Specific Plan Proponents. Specific Plan proponents, also known as participating property owners for the project include: Winncrest Homes, US Home, Florin Investors, Cal Maple Development and Morvai. Saca Properties and East Bradshaw Gerber Associates are no longer participating property owners. Many of the addresses shown on this page are incorrect. A revised listing of Specific Plan proponents is included as Exhibit A.

Throughout the document, there are references to the proponent properties and participating properties. Please modify references and conclusions that are based on participating properties. In some instances, the Draft EIR includes evaluation of properties that are no longer participants. Please clarify in the Final EIR that technical studies may contain technical data for properties that are no longer considered participating.

21.15

Subsequent to our comment letter of September 5, 1997, Morvai has withdrawn as a participating property owner. Today, the participating property owners for the project include: Winncrest Homes, US Home, Florin Investors and Cal Maple Development. A revised listing of the project proponents is attached. Also enclosed is map depicting the locations of participating properties.

28. Page 4.4, Table PD-1. Confirm land use acreages for the preferred plan and alternatives. Table PD-1 is not consistent with information contained on page 5.26.

On Table PD-1 (page 4.4), under the -10% alternative, there are 5,757 dwelling units. This change will make PD-1 consistent with descriptions of the alternatives on page 5.26.

29. Page 4.6, Table PD-2. The acreages shown for the County General Plan Existing scenario add to a number greater than the project acreage of 1,590. Please verify these acreages.

General Plan Designations
Acreage Calculations

General Plan Designation	County General Plan Existing	NVSSP Preferred Plan	NVSSP -10% Alt	NVSSP -15% Alt
Urban Development	1,594.5	0	0	0
Low Density Res (1-12 du/ac)	0	1,417.2	1,417.2	1,417.2
Medium Density Res (13-30 du/ac)	0	39.7	39.7	39.7
Commercial & Office	0	38.7	38.7	38.7
Recreation	0	26.3	26.3	26.3
(Roadways)	0	72.6	72.6	72.6
Total	1,594.5	1,594.5	1,594.5	1,594.5

31. Page 4.9 Specific Plan technical documentation. Technical analyses prepared for Basin E20, as well as the project's groundwater study should be included on the list of technical documentation.

Please include the following technical analyses in the list of technical documentation on page 4.9. Copies of each of these documents are enclosed:

Cultural Resources Assessment for the North Vineyard Station Off-Site Detention Basin, prepared by Peak & Associates, January 14, 1997 and letter from Melinda Peak dated January 28, 1997.

21.16

Wetland Delineation and Special Status Species Assessment for Basin E-20, Sugnet & Associates, January , 1997.

North Vineyard Station Specific Plan Evaluation of Groundwater Impacts, prepared by Sacramento County Public Works Agency, January 31, 1997.

34. Page 5.11, third paragraph. The at-grade crossing of the railroad at Waterman Road will require approval by the Public Utilities Commission. The EIR should discuss the necessary approval by the PUC.

We have had discussions with Howard Menking at California Traction and Steve Hetland of County Transportation Division regarding the at-grade railroad crossing at Waterman Road. We prepared an application to the PUC for the crossing and submitted it to County Transportation. The Final EIR and Specific Plan will be submitted, along with County Transportation's application, to California Traction to complete their application to the PUC for the crossing.

51. Page 14..5, Wetland Acreage, Table BR-2. Please revise Table BR-2 to reflect wetland acreage within participant and non-participant properties, consistent with Comment 2 above.

In the Biological Resources section, please update acreages and references to participant and non-participant properties, including Plate BR-A, Table BR-2, Plate BR-5, Table BR-6, and Table BR-7. The following is an update of the wetland impacts in the plan area. Enclosed is a worksheet that outlines how wetland acreages (participant/non participant) were calculated.

Table BR-2
Wetland Acreage Within Participant and Non Participant Properties

Waters of the U.S. Category	Participant Acreage	Non Participant Acreage
Vernal Pool	2.93	15.0
Seasonal Wetland	1.88	15.84
Drainage Swale	0	7.44
Perennial Creek	0.75	4.59
Stock Pond	0.26	0
Freshwater Marsh	0	2.09
Total	5.82	44.96

21.17

53. Page 14.28, Trees. The Draft EIR states that 48 trees exist within participating properties. Please revise this section to reflect the change in participating ownerships. Also, see comment 57 related to arborists reports.

Given the change in participating properties, there are a total of 17 trees with a combined diameter of 390 inches (see enclosed tree inventory table dated October 17, 1997). Please revise the discussion on page 14.2 and page 14.28.

54. Page 16.4, Technical Study/Site Assessment. Please revise this section to reflect the Environmental Site Assessment dated March 1996 (see comment 58 below).

Enclosed is a copy of the Environmental Site Assessment dated March 1996.

57. *Technical Appendix D, Arborist Report. The arborist reports in the* technical appendix include data for properties which are no longer considered participating property owners.

For clarification, please use the enclosed tree summary (dated October 17, 1997) as an inventory of trees located on participating properties.

58. Technical Appendix K, Hazardous Materials Assessment, also known as Environmental Site Assessment. The Environmental Site Assessment technical document, prepared by Wallace-Kuhl & Associates, that is included in Appendix K was superseded by a revised document dated March 1996. A copy of the March 1996 document has been provided to DERA previously. Please include the most current version of this document in the Technical Appendix.

Enclosed is a copy of the Environmental Site Assessment dated March 1996.

59. Technical Appendix and throughout EIR. A geotechnical engineering report was prepared for the project by Wallace-Kuhl & Associates (dated May 31, 1995) and submitted to County Planning and DERA for use in preparing the Draft EIR. Information from this technical study should be used in the Draft EIR analysis and the technical report should be included in the Technical Appendices.

Enclosed is the geotechnical engineering report prepared by Wallace-Kuhl & Associates, dated May 31, 1995. The document contains information about the geomorphological conditions of the project area, which may useful

21.18

North Vineyard Station
Specific Plan Proponents

Winncrest Homes
9985 Folsom Boulevard
Sacramento, California 95827
Contact: Mike Winn

North Vineyard Investors
US Home Corporation
2366 Gold Meadow Suite 100
Gold River, California 95670
Contact: Brian Bombeck

Florin Investors
9985 Folsom Boulevard
Sacramento, California 95827
Contact: John Reynen

Cal Maple Development
P.O. Box 19034
Sacramento, California 95819
Contact: Phil Courey

Representative
Law Offices of George E. Phillips
555 University Avenue Suite 100
Sacramento, California 95825
Contact: George Phillips

October 17, 1997

21.20

October 17, 1997

Table 3. North Vineyard Station Specific Plan Area Participants (Waters of the U.S.)

Participating Yes/No		Vernal Pool	Seasonal Wetland	Drainage Swale	Elder Creek	Gerber Creek	Stock Pond	Totals
No —	East Bradshaw/ Gerber Associates	0.84	0.19	0.54	0.00	0.00	0.00	1.57*
Yes —	Courey	0.00	0.00	0.00	0.00	0.00	0.00	0.00+
No —	Morval	2.46	0.88	0.90	0.00	0.00	0.00	4.22*
No —	Saca	3.70	0.79	0.00	0.59	0.00	0.09	5.17*
Yes —	Florin Investors	1.63	0.00	0.00	0.00	0.00	0.00	1.63*
Yes —	U.S. Home Corporation	0.00	0.73	0.00	0.75	0.00	0.00	1.48*
Yes.	Winncrest Homes	1.30	1.15	0.00	0.00	0.26	0.00	2.71*
	Totals	9.93	3.72	1.44	1.34	0.26	0.09	
→	Participating —	2.93	1.88	0	0.75	0.26	0	5.82
	Non Participating —	7.00	1.84	1.44	0.59	0	0.09	10.96
								16.78
	Non Participating (that were previous participants)	7.00	1.84	1.44	0.59	0	0.09	10.96
	Rest of Plan (not participating)	8.0	14.0	6.0	4.0	0	2.0	

* - Acreages have been verified by the U.S. Army Corps of Engineers

\+ - No waters of the U.S. present on-site

North Vineyard Station

Tree Summary
October 17, 1997

Includes native oaks 4" DBH and any significant non oak trees 18" DBH and larger.

Summary

Participating Property Owner	Number of Trees	Total Inches
US Home	7	143
Florin Investors	4	83
Winncrest	4	124
Courey	2	40
Total	**17**	**390**

Property	Tag	Species	Diameter	Cond	Recommendation
US Home APN 065-0052-02, 04 and 065-0080-079					
US Home	21	London Plane	22	Fair	Prune and deep root fertilize
US Home	22	Black Walnut	18	Fair	Prune
US Home	23	Black Walnut	28	Fair	Prune and remove deadwood
US Home	24	Black Walnut	18	Poor	Remove
US Home	25	Black Walnut	19	Poor	Remove
US Home	26	Black Walnut	20	Fair	Prune, install cable.
US Home	27	Black Walnut	18	Fair	Prune to thin
	Total Inches		**143**		
Florin Investors APN 66-100-03					
Florin Inv	1	Fruitless Mulberry	20	Fair	Clean out crown
Florin Inv	2	Fruitless Mulberry	22	Fair	None
Florin Inv	3	Fruitless Mulberry	20	Fair	Clean out crown
Florin Inv	4	Fruitless Mulberry	21	Fair	Clean out crown
	Total Inches		**83**		
Winncrest APN 66-080-04,06,13					
Winncrest	18	Weeping Willow	36	Fair	Clean out crown
Winncrest	19	Weeping Willow	30	Fair	Clean out crown/reduce weight
Winncrest	20	Eucalyptus	23	Poor	Remove
Winncrest	21	Eucalyptus	35	Fair	Clean out crown
	Total Inches		**124**		
Courey APN 066-0070-004, 05, 08, 19					
Courey 20	Monterey Pine	22	Fair	Reduce weight, fertilize	
Courey 21	Monterey Pine	18	Fair	Prune thin, reduce weight, fertilize	
	Total Inches		**40**		

ATTACHMENT 2

NORTH VINEYARD STATION SPECIFIC PLAN

DRAFT EIR ERRATA PAGES

DEIR ERRATA GUIDE

Errata Topic: Errata Item — *Errata Page*

Public Facilities Financing: text edit . . . . . 2.8(rev)
Public Facilities Financing: add Mitigation Measure PFF-1 . . . . . 2.9(rev)
Hydrology & Flooding: text edit . . . . . 2.21(rev)
Hydrology & Flooding: add text *At the discretion of the WRD* . . . . . 2.22(rev)
Water Supply: Water Demand Forecast discussion clarified . . . . . 2.28(rev)
Water Supply: Water Demand Forecast discussion clarified . . . . . 2.29(rev)
Water Supply: SCWA discussion updated . . . . . 2.30(rev)
Sewer Service: typographic error interceptor diameter is 102" . . . . . 2.31(rev)

Land Use: typographic error . . . . . 5.20(rev)

Traffic & Circulation: EP-17 revised . . . . . 8.18(rev)
Traffic & Circulation: EP-18 revised . . . . . 8.19(rev)
Traffic & Circulation: CP-5 revised . . . . . 8.23(rev)
Traffic & Circulation: TR-17 revised . . . . . 8.43(rev)
Traffic & Circulation: TR-17 revised . . . . . 8.44(rev)

Hydrology: HY-3 & HY-6 revised to include WRD review . . . . . 11.45(rev)

Water Supply: SCWA discussion updated . . . . . 12.8(rev)
Water Supply: Water Demand Forecast discussion clarified . . . . . 12.10(rev)
Water Supply: typographic error . . . . . 12.28(rev)

Sewer Service: typographic error interceptor diameter is 102" . . . . . 13.1(rev)

Biological Resources: Complete list of Alternative Drainage Corridor Policies 14.29(rev)
Biological Resources: Complete list of Alternative Drainage Corridor Policies 14.30(rev)
Biological Resources: Complete list of Alternative Drainage Corridor Policies 14.31(rev)
Biological Resources: Complete list of Alternative Drainage Corridor Policies 14.32(rev)
Biological Resources: Complete list of Alternative Drainage Corridor Policies 14.33(rev)
Biological Resources: BR-3 revised to include WRD review . . . . . 14.37(rev)
Biological Resources: BR-4 revised to include mitigation fee per acre option . 14.38(rev)
Biological Resources: BR-6 revised to include WRD review . . . . . 14.39(rev)

3. All residential project shall be designed so that solid waste containers can be hidden from street view.

Implementation of the recommended policies will ensure that impacts from solid waste disposal resulting from development within the project area will be ***less than significant.***

Public Facilities Financing

State Planning and Zoning Laws (California Government Code) require specific plans to identify in detail the essential infrastructure and services needed to support the land uses described in the plan, as well as a program of implementation and financing measures necessary to carry out those improvements (Section 65451).

The project site is not included in any existing Public Facilities Financing Plan area and will therefore require a financing **plan and associated implementation** ~~strategy~~ to fund public facilities needed to serve new development in the Plan Area.

Because the NVSSP does not include any rezoning, a financing plan is not required to be part of the project **at this stage**. In fulfilling this requirement to establish a funding mechanism for public facilities within the Plan Area, the proposed Specific Plan includes a financing strategy that establishes a policy framework for the funding of public improvements and infrastructure required to serve new development in the Plan Area. The purpose of the proposed financing strategy is to lay the ground work for the NVSSP Public Facilities Financing Plan (PFFP), which is yet to be completed, and to give the Board of Supervisors sufficient information to make the General Plan/Community Plan level decision. The financing plan to follow will expand upon the financing strategy and provide greater detail on the phasing of improvements and analyze recommended financing mechanisms.

The Public Infrastructure Planning and Financing Section (PIPFS) will provide input during the formulation of the Financing Strategy. After subsequent cooperative review by the Department of Planning & Community Development and Public Works Agency, the Financing Strategy will go through the public hearing process as a component of the Specific Plan project.

At a minimum, the NVSSP Financing Plan is expected to recommend its funding mechanisms for all development projects that will ultimately be approved within the Plan Area, whether for the Preferred Plan, the -10 % Alternative Plan, or the -15% Alternative Plan.

The Financing Plan is tangible to environmental impacts in that it provides the mechanism

to ensure that needed improvements to mitigate traffic, drainage, water supply and other infrastructure/service impacts can be implemented in a timely manner. To insure that no maps are approved prior to the approval of a Public Facilities Financing Plan for the North Vineyard Station Specific Plan area, the Public Infrastructure Planning and Financing Section is recommending the following mitigation:

> **No rezone shall be approved until a Public Facilities Financing Plan for the North Vineyard Station Specific Plan area has been approved by the Board of Supervisors and no final map shall be recorded until the financing mechanisms identified in the Public Facilities Financing Plan have been implemented.**

Traffic and Circulation

A traffic impact analysis for the proposed project was conducted by Fehr & Peers Associates, Transportation Consultants (October 2, 1996). The study analyzes the impacts of the North Vineyard Station Specific Plan on the existing transportation system in the area. The study assesses the short- and long-term impacts of the project on the local circulation network and describes the improvements required to mitigate operational deficiencies of the transportation system. The technical study is summarized below and is available for review at the offices of the Department of Environmental Review and Assessment.

The transportation study analyzes the impacts of the proposed project on the existing and planned roadway, transit, bicycle, and pedestrian circulation systems. The key findings of the study are summarized below

- Under **Existing** conditions,, the following intersections operate at unacceptable levels (LOS F) during the a.m. and/or p.m. peak hour.
    - South Watt Avenue at Jackson Road;
    - Bradshaw Road at Jackson Road;
    - Elk Grove-Florin Road at Florin Road; and
    - Elk Grove-Florin Road at Gerber Road.
- Five roadway segments currently experience physical deficiencies based on substandard travel lane and shoulder widths. Existing deficiencies resulting from substandard roadway cross-sections are exacerbated with the addition of project traffic.
- The proposed Preferred Plan will generate 84,037 daily trips, 5,460 a.m. peak hour trips, and 8,663 p.m. peak hour trips. Approximately 20 percent of these trips are expected to remain within the project boundaries.
- The project alternatives (10 percent and-15 percent Low Density Alternatives) would not reduce project impacts to less than significant.
- Without roadway improvements, the addition of project traffic would result in operational deficiencies on five roadway segments and at eight study intersections. Improvements under **Existing Plus Project** conditions include widening the

and Gerber Creeks would be deepened to approximately 8 feet, widened to approximately 12-50 feet, and constructed with a meandering naturalized appearance. The modified creek channels within the Specific Plan area would be located within an open space corridor with an average width of 200 feet which will also include a recreational trail system. As a result of the proposed NVSSP DMP, the extent of the 100-year floodplain over the project site would be substantially reduced, reclaiming lands planned for urbanization from the 100-year floodplain, and the 10-year water surface elevation in the creek channels would be low enough to provide gravity drainage service to the proposed project development.

The Specific Plan land use plan identifies the proposed creek channels and associated open space areas as "drainage parkways". It should be noted that there are minor discrepancies between the drainage parkway and detention basin locations shown on the Specific Plan land use plan (Plate PD-B) and those shown on the NVSSP DMP (Plate HY-E). Evolution of the drainage planning process has resulted in the recommended facility locations identified in the NVSSP DMP, which are intended to provide necessary drainage improvements while minimizing impacts upon existing land uses. Therefore, the drainage parkway and detention basin locations shown on the Specific Plan land use plan should be revised to be consistent with those shown on the NVSSP DMP.

The proposed NVSSP DMP improvements, when considered in conjunction with other upstream drainage improvements anticipated under ultimate development conditions, would provide adequate capacity to attenuate and convey drainage from the entire drainage shed without adversely affecting downstream areas. This ultimate condition scenario depends upon a complete system of facilities, including detention throughout the watershed, elimination of the existing Laguna Creek interbasin transfer, and channel and road crossing improvements.

~~Any urban~~ **Urban** development within the NVSSP area will necessitate the construction of channel improvements from the development area downstream to the existing improved channel near Millbrook Circle (approximately ½ mile west of Elk Grove-Florin Road) in order to provide adequate drainage service to the development area. However, it is possible that certain upstream ultimate drainage improvements may not be implemented for many years. Therefore, hydrologic and hydraulic analyses were conducted to determine whether implementation of the proposed NVSSP DMP improvements under interim conditions, absent implementation of ultimate upstream flood control improvements, would provide adequate urban flood protection to the proposed Specific Plan development without adversely impacting downstream areas. These interim analyses determined that there would be increased 100-year water surface elevations and increased out-of-bank flooding in downstream areas along Elder Creek, resulting in potentially significant flooding impacts, unless off-site Detention Basin E20 (downstream of Elk Grove-Florin Road) is constructed. These impacts would occur under either full (stand alone) or phased development of the

proposed NVSSP land uses. The County WRD indicates that construction of Basin E20 should occur with the initial phases of the NVSSP construction. **At the discretion of the WRD, it is possible that a limited upland area in the NVSSP might be developed using local temporary detention and pumping to drain a small development.**

An existing overflow condition along Gerber Creek east of the NVSSP area causes flood flows to spill overland into the NVSSP area, placing a broad swath of the southeast portion of the Specific Plan area within the 100-year floodplain. Development of the proposed NVSSP urban land uses cannot occur in this area until this floodplain area is reclaimed. Such reclamation could be provided by constructing certain ultimate off-site, upstream Gerber Creek channel improvements. Alternatively, a new channel (either interim or permanent) could be constructed across the southeast portion of the Specific Plan to confine the overflow from Gerber Creek in a manner which reduces the extent of the 100-year floodplain over this portion of the site, allowing development of a portion of the proposed NVSSP land uses in this area to proceed.

Development of the proposed NVSSP land uses could result in ***potentially significant on-site and downstream flooding impacts.*** These ***impacts can be reduced to a less than significant level*** by the timely implementation of the proposed NVSSP DMP improvements, including the construction of Detention Basin E20, and flood control improvements which eliminate or reduce the existing overflow condition from Gerber Creek into the NVSSP area. Individual developments within the NVSSP area should be required to demonstrate that they will be adequately protected from flooding, and that they will not increase flood risks to downstream areas.

Funding for construction of the NVSSP DMP drainage facilities (i.e., land acquisition, channel improvements, detention basins, culverts, bridges and maintenance roads), and for the construction of the drainage parkway trail improvements, has been identified in the Capital Improvement Program (CIP) for the Specific Plan. The Specific Plan indicates that ultimately the detention basins and drainage parkways (channel sections and open space/buffer areas) will be owned by the Sacramento County Water Agency. The detention basins and channel sections will be maintained by the Water Agency, while the buffer areas will be maintained by the Southgate Recreation and Park District. However, the Specific Plan does not identify the funding source or mechanism for land acquisition and landscaping improvements within the open space/buffer area portions of the drainage parkways (outside the channel sections). In order to ensure that the intended plans for the buffer area portion of the drainage parkways are implemented, the Specific Plan should be revised to clearly specify the funding source or mechanism for acquisition of the buffer area lands and for construction of the buffer area landscaping improvements.

City of Sacramento American River Place of Use (POU), this geographical area's easterly boundary runs along Bradshaw Road which bisects the Plan Area. The POU extends north of Florin Road and south of Gerber Road, and includes the portion of the plan westerly of Bradshaw Road. Surface water from the City's contractual source could therefore be utilized within the westerly portions of the Plan Area, approximately 945± acres.

In 1987, the Sacramento County Water Agency developed a Zone 40 Master Water Supply Plan Report. The boundaries of that study extended to the southerly boundary of the Specific Plan Area, but did not include it. In late 1995, the Sacramento County Water Agency began a further study, this time to expand the Study Areas associated with the Zone 40 Master Plan Update in response to proposed land planning in areas immediately adjacent to the study area of the Zone 40 Water Master Plan Update. The expanded area involves two individual areas, a northern and southern study area. The Northern Study Area encompasses the North Vineyard Station Specific Plan, as well as areas to the west, north, and east of the Specific Plan Area.

The determination of water demands for the Specific Plan Area provides the basis for water supply and distribution capacity requirements to serve the Specific Plan Area. Annual domestic water demands for the Specific Plan Area have been calculated by MacKay and Somps based upon the water demand factors listed in the Zone 40 Master Plan Update and the Zone 40 Adjacent Areas Master Plan. In addition to determining Average Annual Demands at buildout, Maximum Day Demands and an analysis of Fire Flows have also been provided.

According to MacKay and Somps, the Water Master Plan for Areas Adjacent to the Zone 40 Master Plan Update's Study Area develops and evaluates water supply facilities to serve the demands in the Northern Study Area. Delivery, storage and treatment systems for the area were planned and tentatively sized. Projected water demands within the Northern Study Area, which includes the North Vineyard Station Specific Plan Area, can be supplied with one of the following two alternatives: 1) all surface water; or 2) a combination of ground water and surface water.

MacKay and Somps state that the portion of the Study Area lying entirely within the City's American River POU can be supplied with a firm source of American River surface water. Therefore, they assume that development within the City's American River POU will be supplied with only surface water in both of these alternatives.

In Alternative 1, surface water would **be supplied to** ~~supply the Maximum Day Demand of~~ the entire Study Area, including the North Vineyard Station Specific Plan Area. In Alternative 2, surface water would supply the ~~Maximum Day~~ Demand of the area within the City's POU, and ground water would supply the ~~Maximum Day~~ Demand of the area outside

the POU. ~~Demands in excess of the Maximum Day Demand would be met from storage reservoirs in both alternatives~~.

According to MacKay and Somps, the preferred water supply alternative is Alternative 2, the combination of surface water and ground water. They further state that:

> This alternative will meet water demands of initial phases of development and buildout of the Specific Plan Area while lowering ground water levels only an approximate 1.8 feet in the Specific Plan Area. There may be a slight rise in the ground water level in the area of the Elk Grove cone-of-depression as a result of this water supply alternative. Also, the feasibility of Alternative 1, surface water only, is speculative at this time because there is no current firm source of surface water for areas of the portion of the Specific Plan that are east of Bradshaw Road.

Six potential surface water supply options could be considered to meet demands in the Zone 40 Master Plan Update Northern Study Area, including the Specific Plan Area. According to MacKay and Somps, of these six supply elements, two were identified for full allocation in the study of the Zone 40 Master Plan Update at buildout, and one is too speculative to plan for at this time. The three remaining surface water supply elements which could be used to meet demands in the Northern Study Area, including the Specific Plan Area, are S1-Intermittent "Winter Water", S5- "Firm" Surface Water Transfers from North Sacramento River Basin, and S7-Agency Purchase of Sacramento Water.

According to MacKay and Somps, the ground water supply elements identified in the Zone 40 Master Plan Update which could be used to meet demands for the Northern Study Area, including the Specific Plan Area, include element G1-Additional Ground Water, and elements G6/G7-Injection.

The phasing of proposed development within the Specific Plan Area will dictate the feasibility of implementing the Water Supply Master Plan. According to MacKay and Somps:

> Development within the Plan Area may begin in the construction year immediately following adoption of the Specific Plan document. Because of the physical layout of many of the other infrastructure services, such as sewer and drainage, it is anticipated that development may commence in the westerly portions of the Plan Area. This Area is within the City American River POU which is ultimately planned to be

supplied with 100% surface water. Because of the estimated costs of providing surface water to the Northern Study Area, an initial, possibly interim, alternative is necessary to allow any approved development to proceed.

To implement the Water Master Plan, the Plan Area will need to be annexed into the existing Zone 40 of the SCWA in order for Zone 40 to provide major water facilities described in their report. MacKay and Somps further indicate that the Specific Plan Area should also be annexed to the Sacramento County Water Maintenance District which will allow the District to purvey water to developments within the Specific Plan Area.

The following summary has been provided by MacKay and Somps:

Conjunctive use water supply for the County of Sacramento and surrounding regions is a very complex and multi-faceted matter that has received intense attention in the last few years from all of the areas water purveyors, environmental interests and governments. Solutions should not be pursued on a project-by-project level. They should be achieved on a regional scale. This effort takes time, and is now demonstrating a high probability of success in the foreseeable future.

Many interim solutions enhancing water supply have been implemented. Temporary surface water supplies are now being provided to areas which were entirely dependent upon ground water. Agreements are being completed which will provide significant long-term surface water supplies. This PL 101-514 water supply of 15,000 acre-feet of surface water is approaching reality with a DEIR due out prior to the approval of the North Vineyard Specific Plan, and scheduled final EIS/EIR for fall of 1997, prior to expected implementation of the Public Facilities Financing Plan for this project. It is therefore probable that long-term surface water contracts providing a more than adequate surface water supply will be in place prior to any possible start of development within the Specific Plan Area.

Initial water supply may be dependent upon ground water for the first few developments. This initial supply will likely come from ground water facilities which are constructed to become an integral part of the ultimate system, enhancing and supplementing the assurance of long-term reliable water supply for this comprehensively planned community.

Implementation of the North Vineyard Station Specific Plan Water Master Plan, as outlined by MacKay and Somps, would result in less than significant water supply impacts. However, the implementation of the NVSSP Water Master Plan is contingent on the implementation of the ~~Water Master Plan for~~ Areas Adjacent to the Zone 40 Water Supply

Master Plan Update's Study Area, as well as fulfillment of the City of Sacramento American River Place of Use (POU). Until all agreements are in place to wheel "firm" surface water supplies to the Specific Plan area, the project will contribute to the incremental decline in ground water levels. This incremental decline and the dewatering of private wells is a regional issue, beyond the scope of this current project. However, the project will add to the ***significant adverse cumulative impacts*** that regional development has on ground water supplies.

Mitigation:

None required.

Sewer Service

Currently, there are no public sewer facilities within the North Vineyard Station Specific Plan (NVSSP) area. Existing development within the project site is served by private septic systems. Public sewer service will be required to serve the proposed urban land uses. The NVSSP area lies within the Spheres of Influence of the Sacramento Regional County Sanitation District (SRCSD) and County Sanitation District No. 1 (CSD-1), which provide public sewer service within Sacramento County. CSD-1 provides local sewage collection and transport from its facilities to the regional sewage transmission, treatment and disposal facilities operated by SRCSD. SRCSD and CSD-1 are administered by the Water Quality Division of the Sacramento County Public Works Agency, which provides engineering and planning services to these sewer districts and operates and maintains district facilities. In order to receive public sewer service, the NVSSP area must be annexed to SRCSD and CSD-1.

Development of the proposed NVSSP project and upstream areas will contribute an estimated 16.92 million gallons per day of peak wet weather sewage flows to the regional sewer system. There is an existing ~~108~~ 102-inch sewer interceptor located in Elk Grove-Florin Road, approximately ½ mile west of the Specific Plan area, but this facility is nearing capacity. However, the Bradshaw Interceptor is planned for construction in ~~1997-1998~~ 1999-2000 through the western portion of the Specific Plan area which will provide sufficient capacity to accommodate the proposed project's sewage flows. Specific Plan development will be required to construct the trunk and lateral facilities needed to convey project sewage flows to the Bradshaw Interceptor. Because planned facilities will be sufficient to accommodate sewage flows from the proposed land uses, the project's impacts upon

Mixed Use Development Ratios per Policy LU-12			
Use	Commercial	Office	Residential
Retail	50-70%	10-30%	10-30%
Office	0-20%	50-70%	0-30%
Residential	20-40%	0-30%	50-80%
Public	10-30%	10-30%	10-30%
NOTE: Commercial uses refer to the LC and SC zones. Office uses refer to the BP and MP zones. Residential uses refer to the RD-5 through RD-50 zones.			

The County General Plan supports balanced, mixed use development. As noted in Policy LU-12, the balance mixture of land uses depends on the emphasis of the proposed development. In this case, the emphasis of the Preferred Plan and Plan Alternatives is residential development. According to LU-12, a balanced residential based development should include about 10-30% retail use/area, 10-30% office use/area and 10-30% public use/area. For the 1,595± acre Specific Plan area, compliance with the Policy LU-12 table would require a 160-480 acres of retail use/area, 0-480 acres of office use/area, and 160-480 acres of public use/area. As currently proposed, the Preferred Plan contains 28.6 gross acres (1.7%) of designated commercial, 10.1 gross acres ~~(96%)~~ **(0.6%)** of Business and Professional, and 214.7 acres (13.5%) integrated as "public use" (excludes transportation and drainage facilities).

The intent of Policies LU-10, LU-11, and LU-12 is also to enhance neighborhood character and minimize automobile travel by promoting mixed-use development that combines residential uses with commercial, office and public uses on the same site. Providing home, job, shopping and recreation destinations near each other will shorten most automobile trips, and eliminate some altogether by promoting foot and bicycle travel.

The Specific Plan document provides the following "Commercial Concept" statement:

> The North Vineyard Station Specific Plan includes a limited amount of commercial and business/professional development primarily for the convenience of future residents of the Plan and nearby areas. Commercial development designated within the Plan area is not intended to meet all of the retail commercial needs of Plan area residents and is not intended to include major shopping and employment facilities for the larger South County area. Instead, the Plan designates a small portion (less than 2 percent) of the

Improvement EP-16 Modify the **Elk Grove-Florin Road/Gerber Road** intersection to include the following lane configurations:

- Dual left turn lanes, two through lanes, and a separate right turn lane on the northbound and southbound approaches;

- One left turn lane, one through lane, and a separate right-turn lane on the eastbound approach; and

- One left turn lane, one through lane, and a shared through/right-turn lane on the westbound approach.

The provision of northbound dual left turn lanes will require widening of the westbound departure leg on Gerber Road to two lanes before merging to a single travel lane in each direction. The length and merging distance for these lanes will be approved by Sacramento County Transportation Division staff

These improvements would improve operations at this intersection to LOS D and LOS E in the a.m. and p.m. peak hours, respectively Improvements should be implemented when the intersection operates unacceptably based on Sacramento County standards.

Improvement EP-17: Modify the **Bradshaw Road/Gerber Road** intersection to include the following lane configurations:

- Dual left turn lanes, ~~two~~ **one** through lanes, and a separate right turn lanes on the eastbound and westbound approaches; and

- One left turn lane, two through lanes, and a separate right-turn lane on the northbound and southbound approaches.

The provision of **two** southbound ~~dual left turn~~ **through** lanes **and a dual westbound left-turn lanes** will require widening of the ~~eastbound~~ **southbound** departure leg on ~~Gerber~~ **Bradshaw** Road to two lanes before merging to a single travel lane in each direction. The length and merging distance for these lanes shall be approved by Sacramento County Transportation Division staff.

These improvements would improve operations at this intersection to LOS D and LOS C in the a.m. and p.m. peak hours, respectively.

Under cumulative conditions without the project, eight of the 21 study intersections are projected to operate at an unacceptable level (LOS F) during one or both peak hours. These locations and the affected peak hour(s) are listed below .

- South Watt Avenue at Jackson Road (a.m. and p.m. peak hour)
- Bradshaw Road/Jackson Road (a.m. and p.m. peak hour)
- Jackson Road/Excelsior Road (a.m. and p.m. peak hour)
- S. Watt Avenue/Elder Creek Road (a.m. peak hour)
- Bradshaw Road/Elder Creek Road (p.m. peak hour)
- Elk Grove-Florin Road/Florin Road (a.m. and p.m. peak hour)
- Bradshaw Road/Florin Road (a.m. and p.m. peak hour)
- Elk Grove-Florin Road/Gerber Road (a.m. and p.m. peak hour)

All other intersections operate at LOS E or better during both peak hours under cumulative conditions without the proposed project.

With the addition of project-generated traffic, three additional study intersections are projected to operate at LOS F during one or both peak hours. These locations include the following.

- Excelsior Road/Elder Creek road (a.m. and p.m. peak hour)
- Florin Road/Excelsior Road (a.m. peak hour)
- Elk Grove-Florin Road/Calvine Road (p.m. peak hour)

Intersection Deficiencies Under Cumulative Plus Project Conditions:

CP-5: Implementation of the project would ~~result in LOS F operations in the a.m. peak hour~~ **exacerbate LOS F operations at the South Watt Avenue/Jackson Road** intersection~~; however it does not worsen conditioning compared to operations under cumulative no project conditions~~.

CP-6: Implementation of the project would exacerbate LOS F operations at the **Bradshaw Road/Jackson Road** intersection during the a.m. and p.m. peak hour.

CP-7: Implementation of the project would exacerbate LOS F operations at the **Jackson Road/Excelsior Road** intersection during the a.m. and p.m. peak hour.

CP-8: Implementation of the project would exacerbate LOS F operations at the **South Watt Avenue/Elder Creek Road** intersection during the a.m. peak hour, and would cause p.m. peak hour operations to deteriorate from LOS E to F.

- One left turn and one shared through/right-turn lane on the eastbound approach; and

- One shared left-turn/through lane and one separate right turn lane on the westbound approach.

TR-15 Modify the Bradshaw Road/Florin Road intersection to include the following lane configurations:

- Dual left turn lanes, two through lanes, a separate right turn lane on the northbound and southbound approaches; and

- One left turn lane, two through lanes, and a separate right-turn lane on the eastbound and westbound approaches.

TR-16 *Modify the Elk Grove-Florin Road/Gerber Road intersection to include the* following lane configurations:

- Dual left turn lanes, two through lanes, and a separate right turn lane on the northbound and southbound approaches;

- One left turn lanes, one through lane, and a separate right-turn lane on the eastbound approach; and

- One left turn lane, one through lane, and a shared through/right-turn lane on the westbound approach.

The provision of northbound dual left turn lanes will require widening of the westbound departure leg on Gerber Road to two lanes before merging to a single travel lane in each direction. The length and merging distance for these lanes shall be approved by Sacramento County Transportation Division staff.

TR-17 Modify the Bradshaw Road/Gerber Road intersection to include the following lane configurations:

- Dual left turn lanes, ~~two~~ **one** through lanes, and a separate right turn lanes on the eastbound and westbound approaches; and

- One left turn lane, two through lanes, and a separate right-turn lane on the northbound and southbound approaches.

The provision of **two** southbound ~~dual left turn~~ **through** lanes **and a dual westbound left-turn lanes** will require widening of the ~~eastbound~~ **southbound** departure leg on ~~Gerber~~ **Bradshaw** Road to two lanes before merging to a single travel lane in each direction. The length and merging distance for these lanes shall be approved by Sacramento County Transportation Division staff.

TR-18 Install a signal at the South Watt Avenue/Elder Creek Road intersection and modify the lane configurations to the satisfaction of the Sacramento County Transportation Division.

TR-19 Install a signal at the Elk Grove-Florin Road/Florin Road intersection and modify the lane configurations to the satisfaction of the Sacramento County Transportation Division.

The following improvements are required to improve operating conditions under **Cumulative With Project** conditions:

TR-20 Access on Bradshaw Road shall be strictly limited between Florin Road and Elder Creek Road. With the exception of signalized intersections, limited driveway access shall be permitted along this roadway segment.

TR-21 Widen Elder Creek Road between South Watt Avenue and Excelsior Road to include 12-foot travel lanes and minimum 6-foot shoulders to meet Sacramento County design standards for rural arterials.

TR-22 Widen Excelsior road between Jackson Road and Calvine Road to include 12-foot travel lanes and minimum 6-foot shoulder to meet Sacramento County design standards for rural arterials.

TR-23 Widen Gerber Road between Vineyard Road and Excelsior Road to include 12-foot travel lanes and minimum 6-foot shoulders to meet Sacramento County design standards for rural arterials.

TR-24 Construct dual right turn lanes on the eastbound approach and triple left turn lanes on the northbound approach of the Bradshaw Road/Jackson Road intersection. Installation of these improvements should occur when the V/C ratio exceeds 1.00 or the peak hour volume for either movement exceeds roughly 950 vehicles.

TR-25 Modify the northbound and southbound approaches to the Jackson Road/Excelsior Road intersection to include a second through lane. Since

of the Specific Plan area, as described in the Drainage Study for the North Vineyard Station Specific Plan (MacKay and Somps Engineers, February 1997) (see Plate HY-E of the DEIR). Detailed plans for the design and construction of all proposed drainage and water quality facilities, consistent with the NVSSP DMP, shall be submitted to the County Water Resources Division (WRD) for review and approval.

Construction of the NVSSP DMP improvements may be phased, subject to the approval of the County WRD, so long as the project proponent(s) provide hydrologic/hydraulic analyses which demonstrate that the phased improvements will provide adequate urban flood protection to the proposed on-site development, and will not increase flood risks in downstream areas. Such analyses shall verify that the phased improvements will result in no **substantial** increase in peak 100-year flows on Elder Creek at the City/County boundary, and no significant increased 100-year out-of-bank flows in the existing improved channel downstream of the Specific Plan area. **Any phasing must also provide the necessary system reliability and be approved by the Water Resources Division.**

HY-4. Future development shall comply with the County Land Grading and Erosion Control Ordinance.

HY-5. Future development shall provide stormwater quality source and treatment control measures consistent with Volume 5 of the Draft City/County Drainage Manual. The final design of such source and treatment control measures shall be subject to the approval of the County WRD.

HY-6. Implementation of the proposed NVSSP Drainage Master Plan (DMP) improvements, including construction of Detention Basin E20 and construction of a mitigating solution for the existing Gerber Creek overflow condition upstream of the Specific Plan area, shall not occur until the following items have been submitted to the **Water Resources Division and the** Sacramento County Board of Supervisors for review and approval.

a. A wetland delineation for the improvement area verified by the U.S. Army Corps of Engineers.

b. A detailed mitigation plan for wetlands to be impacted by the proposed improvements which specifically describes the measures which will be implemented to achieve no net loss in wetland habitat acreage and values.

c. Determinate surveys for the improvement area for potentially occurring special status species.

as well as areas to the west, north, and east of the Specific Plan Area.

A Final Draft of this document titled "Water Master Plan for Areas Adjacent to Zone 40 Water Supply Master Plan Update's Study Area" (Adjacent Area Water Master Plan) ~~was published in~~ **dated** September of 1996 **will be completed by SCWA. SCWA intends to finalize this document in 1998.** It includes final demand analysis, an assessment of existing water supplies and treatment facilities, and an evaluation and conceptual design of the Northern Study Area water system. The North Vineyard Station Specific Plan comprises 1,595 acres of the 5,596 acre Northern Study Area, or approximately 28.5%. Environmental documentation of the Water Master Plan for Areas Adjacent to Zone 40 Water Supply Master Plan Update's Study Area will begin after completion of the environmental documentation for the PL 101-514 Surface Water Contract and the Water Forums Agreement.

Surface Water Supply

In several reports back to the Board of Supervisors dated September 5, 1995, November 7, 1995 and July 16, 1996, SCWA outlined the progress made toward acquisition of surface water supplies:

> *Substantial progress has been made toward acquiring surface water supplies which would help to reduce ground water depletion and make possible the integrated use of ground water and surface water supplies in a conjunctive use program. Many of these efforts are a direct result of the success of the Sacramento Area Water Forum's process.*
>
> *The staff of SCWA has been negotiating with City staff as part of the Sacramento Area Water Forum process. Upon agreement to have the City wheel-treated surface water available to Zone 40 for use in areas within the City's POU, draft agreements between the City and SCWA have been developed.*
>
> *SCWA staff is working on the environmental documentation and contract negotiations necessary to allow the SCWA to enter into a long-term municipal and industrial water service contract with the United States Bureau of Reclamation as intended by Congress in Public Law 101-514. The contract will be for 22,000 acre-feet of water annually of which 7,000 acre-feet will be subcontracted to the City of Folsom. The Draft Environmental Impact Report is expected to be complete in*

resources for both human and natural systems.

As noted earlier under the Regulatory Environment discussion, the General Plan also states two policies relative to water supply for areas of new urban growth, CO-20 and CO-21 These policies require that a Water Supply Master Plan be prepared for areas of new urban growth and that such a plan consider alternate conservation measures, achieve safe yields of ground water supply and formulate monitoring programs to review water supply progress. In the following, MacKay and Somps presents a summary of their analysis of water supply needs, facilities, financing and phasing to achieve sufficient water supply to serve the needs of the NVSSP Area, consistent with the above noted policies.

Water Demand Forecast:

According to MacKay and Somps:

> The determination of water demands for the Specific Plan Area provides the basis for water supply and distribution, capacity requirements to serve the Specific Plan Area Annual domestic water demands for the Specific Plan Area have been calculated based upon the water demand factors listed in the Zone 40 Master Plan Update and the Zone 40 Adjacent Areas Master Plan. The demands and unit demands for North Vineyard Station Specific Plan Area appear in Table 2 [Table WS-2 of this EIR] They are consistent with the values determined in the Zone 40 Adjacent Areas Master Plan Study Report for their portion of the Northerly Study Area.

MacKay and Somps have provided a second table, included in this EIR as Table WS-3, which includes adjustments to demands based on the implementation of conservation measures, and state the following:

> Average Day Demands at buildout are reduced by 19%, as determined in the Zone 40 Master Plan Update, to account for conservation measures.

A list of conservation measures has been provided by MacKay and Somps (see Table WS-4). **Demands in WS-2 are not adjusted to reflect conservation; demands in WS-3 are adjusted to reflect effects of conservation measures listed in WS-4**

In addition to determining Average Annual Demands at buildout, Maximum Day Demands have been calculated:

> Maximum Day Demands are computed from the average annual demands that have been reduced by 19% to account for conservation measures by multiplying by a factor of 2.0. Peak Hour Demands are then calculated at two times Maximum Day Demands for transmission main sizing, or a factor of 1.8

Sacramento Regional County Sanitation District's 5 million gallon a day wastewater reclamation facility, currently under design. Surface water sources included PL 101-514 water, SMUD assignment water, "winter" water, City water within the existing POU, and other unidentified surface water transfers as needed.

SCWA staff recommends that the Master Plan Update be forwarded to the County Department of Environmental Review and Assessment (DERA) to commence preparation of CEQA documentation once the Water Forum Agreement is completed. It is SCWA staff's intent that the recommended alternative of the Master Plan Update be adjusted accordingly as the Water Forum's Solution Agreement becomes more clarified and that the environmental documentation of the Master Plan Update be closely coordinated with CEQA documentation for the Forums' Solution Agreement.

The regional Water Forum recently published a Working Group Draft Agreement. A DEIR on this project is expected in Fall of 1997, a final Agreement in December of 1997, and a final EIR in the winter. Once this is complete, the SCWA's Zone 40 Master Plan Update Draft EIR can be completed and the Master Plan Update adopted in summer of 1998.

SCWA staff have initiated master planning efforts for the Areas Adjacent to the Zone 40 Master Plan Area, which include the East Franklin, Laguna Ridge, and Lent Ranch Specific Plans and Poppy Ridge Comprehensive Plan in the Laguna Area; and the North vineyard Station Specific Plan and Florin Station Comprehensive Plan in the Vineyard Area. These master plans will be combined with the Zone 40 Master Plan Update and will build on the water supply sources.

Summary of Impacts and Recommendations.

MacKay and Somps Civil Engineers, Inc. have prepared a **The** ~~*Preliminary*~~ *Master Water Supply and Water Distribution System Report* (May 1997) for the North Vineyard Station Specific Plan. The purpose of this report was to develop long-term, permanent water supply alternatives and to identify water facilities needed to serve the North Vineyard Station Specific Plan Area (NVSSP Area). Their report is based on several other studies. The Sacramento County Public Works Agency, Water Resources Division (WRD) has conducted an evaluation of groundwater impacts of the Specific Plan area. Their report, entitled *North Vineyard Station Specific Plan, Evaluation of Groundwater Impacts* (January 31, 1997), has been included as Appendix A of the MacKay and Somps report. Other sources include the Zone 40 Master Water Supply Plan Report (1987), the Vineyard Water Distribution Study

Sewer Service

Setting.

Currently, there are no public sewer facilities within the North Vineyard Station Specific Plan (NVSSP) area. Existing development within the project site is served by private septic systems. Public sewer service will be required to serve the proposed urban land uses. The NVSSP area lies within the Spheres of Influence of the Sacramento Regional County Sanitation District (SRCSD) and County Sanitation District No. 1 (CSD-1), which provide public sewer service within Sacramento County. CSD-1 provides local sewage collection and transport from its facilities to the regional sewage transmission, treatment and disposal facilities operated by SRCSD. Treated effluent from the Sacramento urban area is ultimately discharged to the Sacramento River at SRCSD's Regional Wastewater Treatment Plant, located approximately six miles southwest of the Specific Plan area near Freeport. SRCSD and CSD-1 are administered by the Water Quality Division of the Sacramento County Public Works Agency, which provides engineering and planning services to these sewer districts and operates and maintains district facilities. In order to receive public sewer service, the NVSSP area must be annexed to SRCSD and CSD-1.

CSD-1 and SRCSD classify sewer pipelines carrying 10 million gallons per day (mgd) or more as "interceptors". Sewer pipes carrying between 1 mgd and 10 mgd are known as "trunks". Sewer pipes carrying less than 1 mgd are referred to as "laterals". The cost of interceptor and trunk facilities are reimbursable or creditable against sewer fees.

There is an existing ~~108~~ 102-inch sewer interceptor located in Elk Grove-Florin Road, approximately ½ mile west of the Specific Plan area. However, this interceptor is nearing capacity. In November of 1996, the SRCSD and CSD-1 Board of Directors approved the Sacramento Sewerage Expansion Master Plan project (Control No: 93-PWE-0834), which identifies the interceptor and trunk sewer projects which will be needed to remedy deficiencies in the existing system and to accommodate planned growth within the General Plan Urban Service Boundary through the year 2014 (see Plate SS-A). The EIR for the Master Plan provides a policy/program level analysis for the overall Master Plan improvements, and a project specific construction level analysis for several near term interceptor projects including the Bradshaw, Sunrise and Folsom East Interceptors.

The NVSSP area will be served by the Bradshaw Interceptor, which will generally follow the alignment of Elder Creek through the project area as shown on Plate SS-B. The Bradshaw Interceptor is needed to relieve the existing interceptor in Elk Grove-Florin Road, and to serve planned future growth in the northeast portion of the County. According to the EIR prepared for the Sacramento Sewerage Expansion Master Plan, the Bradshaw Interceptor project will be constructed in phases, with construction of the

oak tree, the utility line shall be bored and jacked under the supervision of a certified arborist.

8. The construction of impervious surfaces within the driplines of oak trees shall be stringently minimized. When it is absolutely necessary, porous materials shall be used and/or a piped aeration system shall be installed under the supervision of a certified arborist.

9. No sprinkler or irrigation system shall be installed in such a manner that it sprays water or requires trenching within the driplines of oak trees. An above-ground drip irrigation system is recommended.

10. Landscaping beneath oak trees may include non-plant materials such as bark mulch, wood chips, boulders, etc. The only plant species which shall be planted within the driplines of oak trees are those which are tolerant of the natural semi-arid environs of the trees. A list of such drought-tolerant plant species is available from the Sacramento County Department of Environmental Review and Assessment (DERA). Limited drip irrigation approximately twice per summer is recommended for the understory plants.

The Specific Plan proposes to further protect trees through the following policy:

- *Make every effort to protect and preserve non-oak native (excluding cottonwoods), including heritage trees (trees with a diameter at breast height (dbh), of 19 inches of greater) and/or landmark trees (as defined by the County Tree Ordinance). Native trees other than oaks, which cannot be saved or are removed shall be replaced with in-kind species in accordance with established tree planting specifications and the established replacement/compensation ratio of one 15-gallon tree for every inch dbh of tree removed.*

Implementation of the above mitigation measures would reduce potential impacts to native oak and non-oak native trees to ***less than significant*** levels.

Alternative Drainage Corridor Policies:

During development of the Specific Plan, representatives of the environmental community Environmental Council of Sacramento (ECOS), Urban Creeks Council, Audubon Society, Sacramento Open Space and California Native Plant Society), formulated 16 alternative drainage corridor policies for Elder and Gerber creeks **as listed on the pages that follow. Of** ~~14 of~~ those policies 14 address biological resources and are discussed below. These proposed

policies were developed during a series of meetings with the project applicants and County staff (Planning and Community Development Department and Water Resources Division).

As described previously, the proposed project includes a 150 to 240-foot wide drainage parkway intended to serve the dual purpose of conveying stormwater drainage and providing linear open space for recreational use. The following elements are proposed within the corridor:

- A channel bottom area with a width of 12 to 50 feet, including a meandering low-flow channel.

- A buffer area, with an average width of 50 feet on each side of the channel bottom. This area would include sloped (3:1 to 4.5:1) channel sides, a 10- foot wide paved maintenance road/pedestrian and path on one side, and drought tolerant trees, shrubs, and annual grassland.

Of the four drainage parkway policies proposed by the Specific Plan, one addresses the biological function and appearance of the parkway.

- The Drainage Parkways (i.e., Elder Creek and Gerber Creek) shall be designed as natural-appearing corridors, serving to enhance wetlands and riparian habitats, act as natural flood water detention areas, and function as water quality enhancement features. The Drainage Parkways shall be designed to permit the growth of vegetation that does not impede the design flow characteristics. Periodic clearing is allowed to maintain channel function.

The Specific Plan's conceptual plan for the creek corridors would provide limited opportunities to establish wetland and riparian vegetation with functional wildlife values. This deficiency is related to the narrow corridor width (maximum 240 feet overall) and the recreational uses proposed within the corridor. After accounting for the creek channel, the average buffer width would average approximately 50 feet. This buffer, would contain the creeks' side slopes (banks), a 10-foot wide pedestrian/bicycle/maintenance path, and drought tolerant landscaping (unspecified species). At this width, the corridor would function more as a park, than a functional habitat area. Notwithstanding this limitation, the proposed channel would adequately mitigate the loss of wetlands from the creeks(in terms of acreage).

The environmental community's alternative policies propose to expand the physical dimensions of the proposed creek corridors and include recommendations to enhance and manage the open space. Alternative policies 2 through 7 **and 13 through** 15 pertain directly to the biological resources of Elder and Gerber Creeks.

SACRAMENTO ENVIRONMENTAL COMMUNITY[1] ALTERNATIVE DRAINAGE CORRIDOR POLICIES FOR ELDER & GERBER CREEKS

It shall be the policy of Sacramento County to:

1. Provide flood control along Elder and Gerber Creek to accommodate peak flow conditions and normal drainage requirements; giving consideration to the overall watershed requirements for any proposed flood control measures. A multi-objective approach to planning channel modifications for flood damage reduction will consider hydrologic, geomorphic, and biological factors that influence stream hydraulics.

2. Maintain streamside resource values along Elder and Gerber Creeks, considering resource protection, recreation, education, flood damage reduction requirements and public safety.

3. Carry out an integrated design that provides an open space corridor along Elder and Gerber Creeks of sufficient size to enhance biodiversity, accommodate wildlife movement, sustain healthy ecosystems, and provide mitigation for loss of habitat and open space. Urban runoff from residential/commercial development has been shown to be toxic to aquatic organisms. State and federal water quality regulations increasingly require communities to prevent toxic urban runoff from impacting aquatic habitats at potentially tremendous public expense. Designing developments with pollution prevention in mind is the most economical and effective approach in urban creek settings. Wide vegetation buffers, an average of 600 feet, will increase the options available to water quality managers to remove harmful sediment, nutrients, pesticides, metals and other chemicals from non-point source runoff, before they reach the streams.

4. The drainage parkways of Elder and Gerber Creeks shall be designed and maintained as a natural appearing corridor, serving to enhance wetlands and riparian habitats, act as natural flood water detention areas, function as water quality enhancement features, and provide wildlife habitat and wildlife corridors. The channel design should take into account the benefits of more natural channel morphology. The parkway's channel and banks should be designed with appropriate roughness factors and width to permit mature growth of native riparian and native hydrophytic (wetland) vegetation yet still

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[1] *Sacramento Environmental Community organizations involved in the preparation of these alternative policies include representatives from the Urban Creeks Council (UCC), Audubon Society, California Native Plant Society (CNPS), Environmental Council of Sacramento (ECOS), Sacramento Open Space (SOS), Urban Streams Restoration Program (State of California), Institute for Ecological Health Sierra Club, and Southgate Recreation and Park District.*

convey regular flood flows. The use of native plant species and locally native materials is encouraged both inside and in the corridor outside the channel.

5. To the maximum extent practical, retain and create topographic diversity and variation when channels are realigned or modified, including maintaining meandering characteristics, varied berm width, naturalized and varied side slopes (i.e , 3 1 to 5:1), and a varied channel bottom elevation. Channel width should be sufficient to provide room for natural stream movement over time. The materials comprising stream bottoms and banks shall be the same or similar to those found in comparable natural streams (particularly reference streams selected by the California Department of Fish and Game for the purposes of biological assessment). Likewise, a natural array of riffles, runs and pools shall be preserved or created to provide habitats which support a diverse aquatic community.

6. Avoid direct discharge of sediment laden storm runoff to stream waters. Excess sediment deposition in streams destroys the natural assemblage of aquatic organisms that would otherwise inhabit a healthy ecosystem. To avoid physical aquatic habitat degradation, sediment control shall be an element of stream corridor design standards and runoff management. Detention basins or other catchment systems which settle out sediment shall be accessible for routine sediment removal to ensure the long-term viability of these systems.

7. Provide for monitoring of the ecological health of the streams. Baseline water quality monitoring shall be conducted at least quarterly in the year prior to commencement of stream modifications, land grading or building construction. Biological assessment techniques shall be a component of this initial monitoring, as well as subsequent monitoring, to measure the suitability of water quality and habitat for benthic (bottom dwelling) invertebrates, algae and fish. Quarterly monitoring shall continue for a minimum of five years, or until 75% of the development in the watershed is completed, whichever is longer. Throughout this period, incidence of perturbations in stream quality shall be investigated using appropriate biological, chemical or toxicity testing to identify and remediate the source(s) of the problem(s).

8. **Long stretches of backup lots along parkways and open space corridors are discouraged. Effective patrolling requires the utmost visibility for foot and vehicular patrols. The use of front on streets is preferred, with side yard lotting patterns and open-ended cul-de-sacs being less appropriate. Backup lots, side yard lotting patterns, and open-ended cul-de-sacs will be restricted to 25% of the parkway length within the Specific Plan area. Through appropriate planning, a need for backup lots and side yard lotting patterns could be further reduced. An**

outreach program should educate the neighborhood about the benefits of the creeks and corridors and how to protect them, e.g. no dumping, no independent planting in the corridor, creek study, and other appropriate recreational activities.

9. Development located adjacent to the open space corridors of Elder and Gerber Creeks shall incorporate the corridor into the design of the project with attention given to minimizing the frontage that is blocked off from public view. Development proposals adjacent to the open space corridor shall have a public street paralleling at least one side of the corridor with vertical curbs, gutters, footpath, street lighting and post and cable barriers to prevent vehicular access. It may be appropriate to alternate the public street frontage from one side of the corridor to the other to maintain aesthetics for residential lots on the corridor, but resulting in not less than 75% of corridor having street frontage within the Specific Plan area.

10. Residential lots which back up or have a side yard orientation to the open space corridor shall employ the use of open fencing (e.g., wrought iron or decorative iron) to enhance surveillance of the corridor and provide a visual amenity. A 3-foot solid wall with 3 feet of open fencing on top is acceptable, while 6 feet of wrought iron is preferred for surveillance purposes. (Note: Chain link fencing is not an acceptable fencing material.)

11. Require that prior to the approval of any rezone or tentative map entitlement within or adjacent to the currently designated floodplain of Elder or Gerber Creek, or modified floodplain as recognized by FEMA, a comprehensive open space corridor management plan (including revegetation, vegetation maintenance, and 5-year monitoring plans) shall be prepared and approved by the Board of Supervisors for that portion of the Creek included in the planning proposal, and extending 100 feet both up/down stream. The management plan shall include:

    a. A precise proposal encompassing the flood channel and open space corridor which adheres to the above stated policies and addresses the biological, aesthetic, and recreational qualities of the open space corridor;

    b. An appropriate interface between the open space corridor and adjacent development with respect to aesthetics, access, maintenance and security;

    c. An appropriate funding mechanism to establish, operate and maintain the open space corridor. A funding mechanism which is provided for a public entity

should be given priority. As sections of the trail system are improved, they should be dedicated to Southgate Recreation and Park District for ongoing maintenance.

12. **To the extent feasible, the storm water detention basins located within the North Vineyard Station Planning Area should be designed in a manner which allows the joint use of the facility for detention and recreation purposes. Guidelines should be followed as outlined in Volume 4 of the City/County Drainage Manual, and development plans should be coordinated with the Southgate Parks and Recreation District.**

Elder and Gerber Creek Corridors

13. Establish a permanent open space corridor with a width of 600 feet along Elder and Gerber Creek extending from the City Limits northeastward to the upstream watershed boundaries (if and when development occurs upstream). The width of the open space corridor may vary depending on:

    a. unavoidable physical or man-made constraints occurring in the immediate area;

    b. quality and quantity of existing and planned habitat;

    c. presence of species, as well as their sensitivity to human interaction;

    d. areas required for vegetation regeneration;

    e. desire for community greenways;

    f. nature of planned uses adjacent to corridor;

    g. corridor for wildlife habitat linkage.

    However, the absolute minimum width for the open space corridor shall be 150 feet on each side of the drainage canal outside of easements and detention basins and between detention basins and roads. The width of the open space corridor shall be made sufficient to accommodate broad and architecturally diverse native vegetation capable of: !1) trapping sediment and detoxifying pollutants from non-point sources such as neighboring yards; (2) providing habitat for native fauna; (3) competing against non-native invasive plant species; and (4) shading at least 75% of the surface at all

times of the day, to maintain cooler water temperatures and associated, higher dissolved oxygen levels for aquatic organisms. To ensure adequate area for trails and other open space uses, the corridor widths and delineation will be determined after mitigation requirements from the various regulatory agencies (Army Corps of Engineers, Fish and Wildlife, Fish and Game) have been decided. If regulatory requirements take up the entire corridor, the width will need to be increased to allow for these planned open space uses.

14. **When detention basins (water quality and/or flood control) are adjacent to the drainage canal, the open space corridor shall begin at the outside edge of the detention basin. When detention basins are adjacent to roads, the open space/habitat corridor shall continue between the road and the basin in order to maintain the integrity of the corridor.**

    Constraint - If no woody vegetation is permitted within the 50 foot interceptor easement, the corridor shall begin outside the interceptor easement.

15. The corridor shall have a meandering appearance, and shall offer a variety of environments including: natural areas, revegetated/woodland areas, open grass fields/glades and passive recreation park land (not part of Quimby requirement). The corridor shall also be designed to accommodate interpretive areas, bike/pedestrian pathways, an equestrian trail, walkways, and a natural habitat corridor. These improvements shall be paid by the developer. There is a need for separation of some uses to maintain the integrity of the uses, e.g. horse trail must be separate from pedestrian trail.

    The location of the drainage channel within the open space corridor may vary providing character and uniqueness as long as flood damage reduction measures are not negatively impacted.

16 Where the drainage canal flows under a road, that area should be of sufficient width and depth to include the trail, bike/maintenance trail, and habitat corridor. This allows for safe crossings (under as opposed to at road grade level). It also allows for better flood damage reduction. Where depth isn't sufficient for a bike trail, additional width for the habitat corridor should be included. Large floods can carry large amounts of debris such as uprooted vegetation and trees, fences, and parts of structures. This, combined with sediment, could impede or block the efficiency of medium sized culverts. Partial obstructions at bridges and culverts can cause significant increases in upstream flood elevations. If at-grade crossings are necessary, crossing lights, stop signs, and/or crosswalk markings shall be funded by the Specific Plan finance plan.

long-term maintenance of compensation areas to assure that the wetlands are maintained in a natural state. Long-term maintenance shall include restricted recreational use, erosion control, and maintenance trails, or other similar structures.

At the time the applicant obtains a permit to impact wetlands, alternative strategies may have been adopted to mitigate for wetland impacts. The above measures do not preclude the implementation of these new alternatives. The final acreage of offsite mitigation will be determined by the U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service when specific development projects are permitted by those agencies.

BR-2. If the On-site Wetland Preserve is approved, an On-site Wetland Preservation Plan shall be prepared that preserves at least 200 contiguous acres as a wetland preserve east of Bradshaw Road. Preservation shall focus on those wetlands with the highest habitat values. A map showing the wetland preserve boundaries shall be prepared, including the rationale for the preserve boundaries. The plan shall address all aspects of wetland preservation including buffering of incompatible land uses, access, maintenance, monitoring, and mitigation banking. The required Plan shall be submitted to the Sacramento County Department of Environmental Review and Assessment, U.S. Army Corps of Engineers, U.S Fish and Wildlife Service and California Department of Fish and Game for approval prior to its implementation..

All vernal pools and seasonal wetlands outside the preserve area shall be mitigated offsite at an agency approved mitigation bank to the satisfaction of the U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service.

BR-3. A Wetland Mitigation Plan for Elder and Gerber Creeks shall be prepared and incorporated into the Specific Plan. This plan shall address phasing of channel modifications, establishment of wetlands (i.e., passive, active, combination), species composition, maintenance and monitoring. The plan shall require channel bottom and bank materials to be substantially the same as comparable natural streams. Natural arrays of riffles, runs and pools shall be incorporated into the design of the creek channels. The required Plan shall be submitted to the Sacramento County Department of Environmental Review and Assessment, **County Water Resources Division,** U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service and California Department of Fish and Game for approval prior to its implementation.

BR-4. ~~To mitigate for the potential loss of 1600± acres of Swainson's hawk foraging habitat, implement one of the following alternatives:~~ **Prior to the approval of Improvement Plans or Building Permits, whichever occurs first, implement one of the following options to mitigate for the loss of 1,595± acres of Swainson's hawk foraging habitat:**

a. The project proponent shall preserve 0.50 acre of similar habitat for each acre lost within a 10-mile radius of the project site. This land shall be protected through fee title or conservation easement (acceptable to the California Department of Fish and Game);

b. The project proponent shall enter in the formal consultation with the California Department of Fish and Game pursuant to ~~the Fish and Game Code,~~ Section 2081 **of the California Fish and Game Code**. A California Endangered Species Act (CESA) Memorandum of Understanding (MOU) and Management Agreement shall be ~~completed prior to issuance of any building permits for the site.~~ **provided as evidence of the formal consultation.**

c. The project proponent shall submit payment of a Swainson's hawk impact mitigation fee per acre impacted to the Department of Planning and Community Development in the amount as set forth in Chapter 16.130 of the Sacramento County Code as such may be amended from time to time and to the extent that said Chapter remains in effect.

~~c.~~ **d.** Should the County Board of Supervisors adopt a Swainson's hawk mitigation *policy/program (which may include a mitigation fee)* ~~*payable prior to issuance of building permits)*~~ prior to the implementation of one of the measures above, the project proponent may be subject to that program instead.

Note: Actual habitat loss will occur when rezones and related land use entitlements are granted. Implementation of this mitigation measure will occur *on a project-by-project basis with each rezone application.*

BR-5. Using protocol acceptable to the regulatory agencies with authority over these species, determinate surveys for potentially-occurring special-status species or their habitat shall be conducted prior to development and permitting within the Specific Plan area If any of the species or their habitat are indicated, project/plan-specific mitigation measures shall be developed in consultation with Sacramento County, the California Department of Fish and Game, and/or the U.S. Fish and Wildlife Service to mitigate those impacts to less than significant levels, if possible. The mitigation plan(s) developed for species or habitat preservation shall emphasize a multi-species approach, to the maximum extent possible.

- Where impacts include taking of a federally-listed species, a Section 10, Incidental Take permit, or a Biological Opinion resulting from Section 7 Consultation with

another federal agency shall be obtained, and permit conditions implemented

- Where impacts include taking of a California-listed species, a Section 2081 Management Agreement shall be negotiated with the California Department of Fish and Game, and conditions of that management agreement implemented

BR-6. In conjunction within the required Wetland Mitigation Plan for the creeks, a Drainage Parkway Plan for Elder and Gerber Creeks shall be prepared. This plan shall provide the following information:

a. A map that depicts the configuration of the creek corridors, including overall width, low-flow channel width, bank slopes, and buffer widths;

b. The location of all trails, bikeways, maintenance roads and channel access points, street crossings, water quality basins and other structures within the corridors;

c. Designations of all lands uses, including recreation (passive or active), mitigation, natural area, water quality, storm water detention, etc.,

d. Policies addressing public access into the corridors, including limitations on use;

e. A policy statement requiring the use native plants within the corridor, including a planting palette of acceptable species;

f. Maintenance and monitoring requirements for the creek channels and mitigation areas;

g An appropriate funding mechanism to establish, operate and maintain the creek corridors, and;

h. All requirements of State and Federal regulatory agencies pertaining to the preservation and management of special status species.

If the proposed project is approved, the corridor width shall be in substantial compliance with that proposed in the Specific Plan (150 to 420 feet). Adoption of the Alternative Drainage Corridor Policies would increase the corridor width to 600 feet Widths of this alternative may be reduced based on unavoidable physical constraints, however, the minimum width shall be 150 feet on each side of the drainage channel bottom. These alternatives are not intended to preclude other alternatives for the drainage parkway corridors. Such changes may involve combinations of different channel widths, corridor configurations and policies. The Drainage Parkway Plan shall be submitted to the **County Water Resources Division and the** Sacramento County Board of Supervisors for approval, prior to approval of development of the Specific Plan area.

ATTACHMENT 3

NORTH VINEYARD STATION SPECIFIC PLAN

FINANCING STRATEGY AND CAPITAL IMPROVEMENT PROGRAM

ECONOMIC & PLANNING SYSTEMS
Real Estate Economics / Regional Economics / Public Finance / Land Use Policy

Draft Report

NORTH VINEYARD STATION SPECIFIC PLAN FINANCING STRATEGY

Volume I

Prepared by:

Economic & Planning Systems, Inc.

February 17, 1998

EPS #7163

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I. INTRODUCTION AND OVERVIEW

The NVSSP area is located on approximately 1,595 acres in southern Sacramento County. The Specific Plan area is bounded on the north by Florin Road, on the south by Gerber Road, and on the east by the extension of Vineyard Road. Elder Creek roughly constitutes the west boundary of the Specific Plan area. **Map 1** shows the location of the project in the Sacramento region.

PURPOSE

This Financing Strategy for the North Vineyard Station Specific Plan (NVSSP) establishes a policy framework to guide the overall financing strategy for the major public facilities required to serve the proposed land uses in the Specific Plan. This financing strategy lays the groundwork for development of the future NVSSP Financing Plan and provides the Board of Supervisors with information needed in making the NVSSP land use decisions.

This financing strategy will:

- Establish a policy framework for financing the required major public infrastructure;
- Identify the major roadway, storm drainage, sanitary sewer, water supply, park improvements, fire protection, library, school, and transit facilities required for the specific plan area to develop;
- Estimate the costs for the identified facilities;
- Allocate the facility costs between the various land uses;
- Identify phasing constraints of the required major facilities;
- Identify existing and potential funding sources that may be used to fund the range of required facilities, and,
- Identify a range of potential strategies to fund the unfunded major required public facilities.

This financing strategy is being prepared in conjunction with the Specific Plan. A detailed financing plan will be required concurrent with the approval of the first zoning entitlements in the NVSSP. The financing plan will build upon this financing strategy and will include: an updated phasing analysis, a detailed land use development base and anticipated absorption schedule, and a recommendation to implement one or more financing mechanisms.

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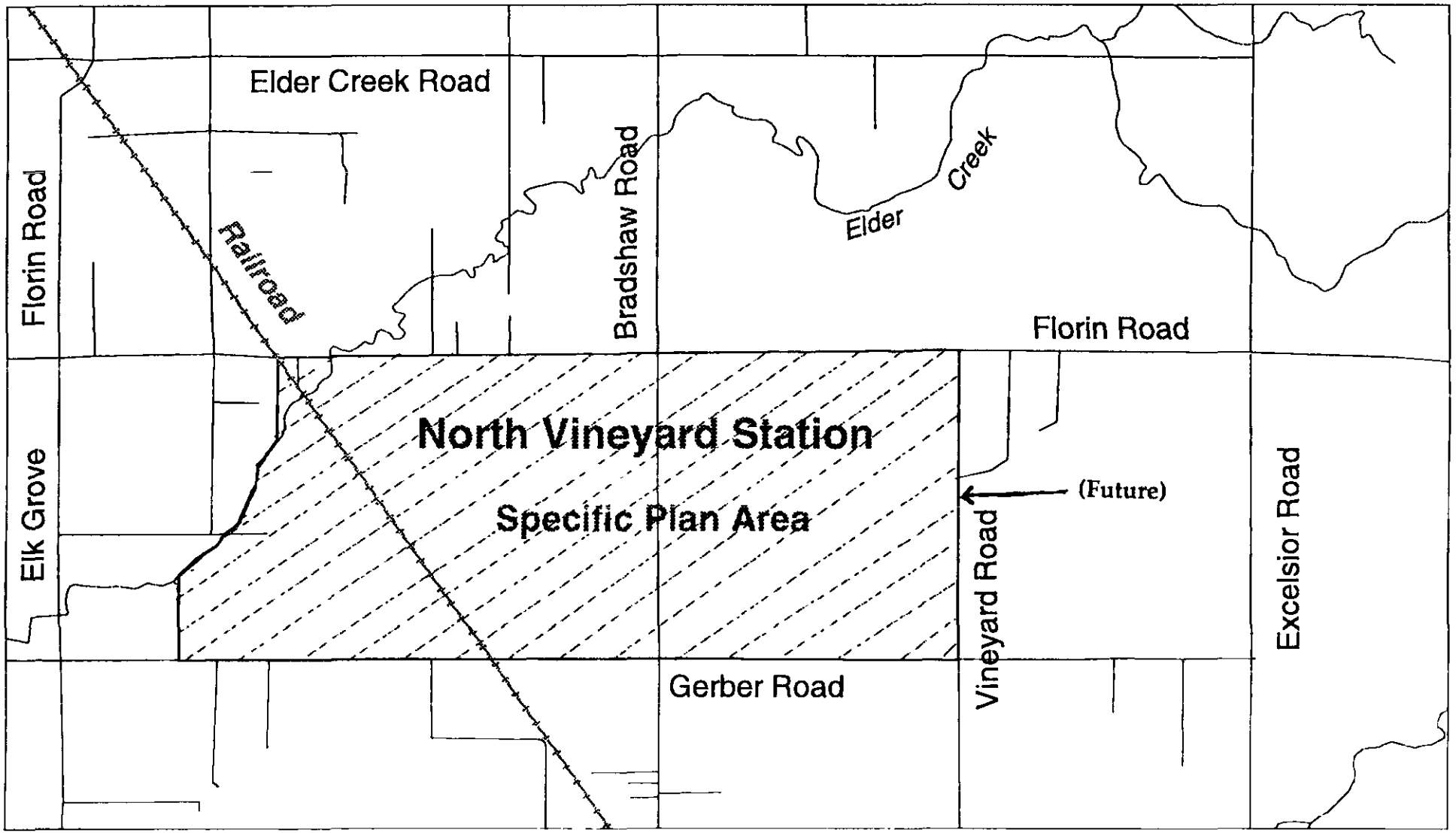
Map 1
North Vineyard Station Specific Plan
Project Area



CONTEXT OF THE INFRASTRUCTURE FINANCING STRATEGY

The facility financing strategy is based upon a series of planning and engineering studies prepared by a team of consultants. Additional future studies will also be required with the implementation of the Specific Plan. The following text provides an overview of the planning context of the financing strategy.

SPECIFIC PLAN

The financing strategy is based on the proposed land use designations shown on the preferred land use plan for the NVSSP area. The costs of infrastructure for each of the land use alternatives were based on a series of studies performed by the MacKay & Somps led consulting team. The technical reports used to determine major facility cost estimates are included in Section 12.0 of the NVSSP. The financing strategy, while prepared as a stand-alone document, is a part of the NVSSP.

FUTURE PLANNING EFFORTS

In addition to the NVSSP and the technical studies supporting it, additional planning efforts will be required prior to development of Specific Plan land uses. These efforts include:

- the development of a detailed financing plan prior to the approval of any rezone;
- the submission of tentative maps for each major subdivision; and,
- implementation of financing mechanisms prior to the recordation of final maps.

The financing plan will recommend the establishment of several financing mechanisms. In addition to existing funding sources and a NVSSP project-specific fee, these mechanisms could include Mello-Roos Community Facilities Districts, Assessment Districts, and/or Landscape and Lighting Districts.

SUMMARY OF RECOMMENDED FINANCING STRATEGY

The underlying premise of the recommended financing strategy is that backbone infrastructure should be funded through impact and connection fees unless timing considerations and cost require the sales of municipal bonds in order to provide the required infrastructure.

The following financing strategy is recommended:

- Establish NVSSP project-specific fees to fund all of the major backbone facilities not included in existing fee programs.
- Establish bond financing districts as necessary to provide up-front funding.

STRUCTURE OF THE REPORT

Following this introduction and overview, **Chapter II** discusses the policy context of the plan.

Chapter III provides an overview of the Specific Plan's proposed land uses.

Chapter IV summarizes the facility needs and costs that have been estimated in the technical studies associated with the Specific Plan.

Chapter V describes the potential sources of funding that could be used for the Plan area's facility needs. In addition, a preliminary allocation of Plan area costs are made

Chapter VI proposes an overall financing and implementation strategy for the Specific Plan.

Chapter VII provides a qualitative discussion of the potential economic impact of the Specific Plan's infrastructure financing on non-developing landowners within the NVSSP area.

Appendix A provides the summary cost estimates for the Capital Improvement Program (CIP) prepared by MacKay & Somps. The full CIP is published separately as Volume II of the Financing Strategy report. **Appendix B** provides the detailed EDU calculations.

II. POLICY CONTEXT OF THE PLAN

Implementation of the adopted North Vineyard Station Specific Plan will require the implementation of various facility funding mechanisms. The policy context in which the County will determine which funding mechanisms to use, when funding mechanisms are implemented, and who pays for public facilities is critical in ensuring that revenues are available when needed to fund public infrastructure needs within the North Vineyard Station Specific Plan area.

This chapter provides the current policy context of facility financing in the North Vineyard Specific Plan area and proposes an additional policy framework for the implementation of the financing strategy.

COUNTY GENERAL PLAN

The overriding General Plan policy related to public facility financing is LU-8. That policy states:

> *Infrastructure financing plans that specify the extent, timing, and estimated cost of all necessary infrastructure shall be adopted by the Board of Supervisors prior to the approval of zoning entitlements in urban growth areas. The resulting financing mechanisms shall be implemented prior to the approval of entitlements in urban growth areas.*

This policy ensures that as development entitlements are granted, detailed facility financing plans will be completed. The implementation of this policy currently follows these three major milestones:

- Financing Strategy – concurrent with the NVSSP
- Detailed Financing Plan – prior to approval of zoning
- Implementation of Financing Mechanisms – prior to approval of first final map

RECOMMENDED ADDITIONAL POLICIES

In addition to the General Plan financing policies, several Specific Plan policies are proposed for the long-term implementation of the financing strategy. These policies include:

- **Infrastructure should be funded on a pay-as-you-go basis.** To the extent possible, development of project-related facilities should be funded on a pay-as-you-go basis through the payment of development impact fees or private financing. Implementation of this policy will require development of detailed phasing plans for major public facilities.

- **The use of public bonding should be minimized.** The use of public financing districts—such as Mello-Roos CFD's or Assessment Districts (ADs)—should be utilized when pay-as-you-go fee funding is not sufficient to fund required public facilities.

- **Non-developing landowners will be excluded from any public financing districts.** While the development impact fee districts will include the entire Specific Plan area, public financing districts will exclude non-developing landowners. Properties receiving discretionary land use approvals subsequent to the formation of any financing districts should be required to annex into these districts if they benefit from district facilities. (Note: In addition, project-specific fees will only be levied when building permits are pulled; therefore, non-developing landowners who do not pull building permits will not be required to pay fees.)

III. LAND USE

The North Vineyard Station Specific Plan area is located in the south central portion of Sacramento County, approximately thirteen miles southeast of downtown Sacramento and five miles north of the commercial district of the community of Elk Grove. The 1,595 acres is bounded on the north by Florin Road, on the south by Gerber Road, and on the east by the extension of Vineyard Road. Elder Creek roughly constitutes the west boundary of the Specific Plan area.

Existing land uses within and surrounding the Specific Plan area are generally Agricultural-Residential and Agricultural with approximately ten small commercial enterprises along the periphery of the Specific Plan boundary. The preferred land use plan for the Specific Plan area includes 1,173 acres, and 6,339 dwelling units, of residential development; 39 acres of commercial and business professional development; and 383 acres of Public Use areas including schools, parks and parkways, open space, drainage, major streets, and public services.

Figure 1 provides a summary of the proposed land uses for the Specific Plan area.

The NVSSP provides an overview of two alternative land use plans. Each of these plans would provide a lower-density alternative for the residential land uses. The overall financing strategy is not affected by these alternative land use plans; however, the lower-density land use alternatives could result in increased development impact fees to the extent that Specific Plan facilities are not equally reduced. Any changes related to decreased density will be addressed in the future Financing Plan.

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Figure 1
North Vineyard Specific Plan
Preferred Land Use Alternative

Land Use Description	North Vineyard Station Specific Plan			
	Average Density [1]	Gross Acreage (acres)	Net Acreage (acres)	Dwelling Units
Residential:				
Low Density (SFR/1-3)	2	150.4		301
Low Density (SFR/3-5)	5	644 5		3,222
Low Density (SFR/4-7)	6	287 3		1,724
Medium Density (MDR/7-14)	10	45 4	44.2	442
Multi-Family (MFR/14-22)	18	39 7	35 4	637
Existing Residential	-	6.0		13
Subtotal Residential		**1,173.3**		**6,339**
Non-Residential:				
Commercial		28.6	28 5	
Business Professional		10.1	9 5	
Subtotal Non-Residential		**38.7**		
Public / Recreational:				
Schools		21.7	20 0	
Parks		104.7	99 5	
Golf Course		19 9	19 8	
Parkway		6 4	6 3	
Drainage Parkway		62.0	61 3	
Open Space/ SWD		79.2	76 6	
Major Streets		58.0	58 0	
Transit Center		11.1	10 0	
Public Services		4.9		
Railroad		14.6		
Subtotal Public / Recreational		**382.5**		
TOTALS		**1,594.5**		**6,339**
Developable Acres		1,212.0		
Developable Acres as a Percent of Total Acres		76 0%		

"land_use"

(1) The average density is used to calculate estimated dwelling yields. Medium and Multi-family densities are based on net acreage; Single Family low-densitues are based on gross acreage.
(2) From Table 3.2 of the NVSSP, dated May 28, 1997.

IV. FACILITY NEEDS AND PHASING

Buildout of the Specific Plan will require construction of additional major backbone infrastructure (e.g., roads, water, sewer, and drainage) and facilities to provide additional public services (e.g., fire, libraries, parks, and schools). This chapter provides an overview of the facility requirements for the preferred Specific Plan land use alternative and summarizes the estimated facility costs for this alternative. The major public infrastructure costs associated with development of the NVSSP in 1997 dollars are:

Major Public Infrastructure:	1997 Dollars
Major Roadways	**$28,005,000**
Internal Roadways (along public lands)	**$1,552,000**
Sanitary Sewer	**$5,212,000**
Drainage	**$33,182,000**
Water	**$29,184,000**
Park and Recreation Facilities	**$6,904,000**
Fire Protection Equipment	**$1,795,000**
Library (contribution)	**$896,000**
Transit Facilities	**$2,138,000**
Public Schools	**$67,712,000**
TOTAL	$176,580,000

Figure 2 provides a more detailed breakdown of these costs. The implementation of the Financing Plan will include the development of Capital improvement Programs for various types of facilities that will be funded by financing mechanisms that will be identified in the future NVSSP Financing Plan. Financing mechanisms will be recommended to allow facilities to be constructed as they are needed to serve new development.

DESCRIPTION OF FACILITIES

The above cost summary table shows the major categories of required facilities. The cost estimates have been derived from preliminary engineering data. Detailed cost estimates for the NVSSP infrastructure facilities are provided in **Appendix A**. The following section briefly describes each of the major infrastructure facility categories. A detailed discussion of phasing issues is provided in the following section. Potential credits and reimbursements will be discussed in a later chapter of this report.

MAJOR ROADWAYS

The NVSSP provides a comprehensive transportation network designed to meet anticipated traffic volumes and travel demands of the Specific Plan land uses within the context of the regional transportation system outlined in the County General Plan. The NVSSP roadway CIP provides a prioritized list of road projects that the Plan area should fund. These projects, and associated costs, are subject to change prior to the completion of the NVSSP Financing Plan.

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Figure 2
NORTH VINEYARD STATION SPECIFIC PLAN
Summary of NVSSP Facility Cost Estimates

FACILITY TYPE	NOTES	NVSSP FACILITY COST (1)
		1998 $'s
Major Roadways		**$28,005,000**
Internal Roadway	(2)	**$1,552,000**
Sanitary Sewer	(2)	**$5,212,000**
Drainage	(2)	
Channel Related Items		$12,916,000
Detention Basin Construction		$12,041,000
Trunk Drainage Serving 30 Acres or More		$3,059,000
Wetland Mitigation		$5,166,000
Subtotal Drainage		**$33,182,000**
Water	(2)	**$29,184,000**
Parks & Recreation		
DrainageParkway		$720,000
Park Development	(3)	$6,112,000
Linear Parkway Development		$72,000
Subtotal Parks & Recreation		**$6,904,000**
Fire Protection	(4)	**$1,795,000**
Transit		**$2,138,000**
Library	(5)	**$896,000**
School	(6)	**$67,712,000**
Total Facilities Cost		**$176,580,000**

(1) Costs do not include off-site facilities that are funded through existing County fee programs or have otherwise been determined to be beyond the responsibility of the Specific Plan.
(2) Costs based on a combination of unit prices used in EGWV PFFP, in EEG PFFP, County agency reimbursement schedules, and preliminary engineering estimates.
(3) Costs based on preliminary estimates provided by Southgate Rec. and Park District.
(4) Costs based on preliminary estimate provided by American River Fire District.
(5) Costs based on information provided by the Sacramento Public Library Master Plan.
(6) Costs based on information provided by the Elk Grove Unified School District.

The *Transportation Analysis for the North Vineyard Station Specific Plan* identifies the facilities needed to mitigate the impacts of the full buildout of the Specific Plan area on the existing road system. The $28.0 million in Major Roadway facilities includes: 1) roadway facilities adjacent to or through the Plan area; and 2) the NVSSP area's share of regional roadway facilities.

INTERNAL ROADWAYS

The estimated cost of $1.55 million for the Internal Roadways includes half-street frontage improvements for collector roadways that are:

- adjacent to open space corridors;
- adjacent to park areas;
- adjacent to drainage parkway;
- adjacent to linear parkways; or,
- adjacent to drainage facilities.

These facilities may be funded through a project-specific fee or may be funded privately along with the other intract development costs.

SANITARY SEWER

Sanitary sewer facilities required to serve the Plan area are presented in Section 9.0 of the NVSSP and the Technical Appendix, *North Vineyard Station Specific Plan Sanitary Sewer Study*. The Specific Plan area is currently within the Spheres of Influence of the Sacramento County Sanitation District No. 1 (CSD 1) and the Sacramento Regional County Sanitation District (SRCSD). Developing areas will need to annex to these districts. The SRCSD 1 plans to construct the Bradshaw/Folsom Interceptor Project in 1998/99. The Sewer Master Plan prepared for the Plan defines sub-areas that will contribute flow to the proposed Bradshaw/Folsom Interceptor at three points.

Development within the Specific Plan area will require the construction of sewer trunk lines and sewer laterals in major streets. The approximately $5.2 million of trunk sewer facilities included in the overall cost estimates is comprised primarily of the major sanitary sewer trunk lines along Florin and Gerber Roads.

DRAINAGE

The NVSSP area lies within the drainage sheds of Elder and Gerber Creeks The NVSSP Technical Appendix, *NVSSP Master Drainage Study*, describes the following proposed drainage facilities for the Specific Plan area:

- Channel Improvements
- Flood Control Detention
- Bridge and Culvert Improvements
- Storm Water Quality Improvements
- Gravity Storm Drainage Pipelines
- Drainage Parkway Improvements
- Wetland Mitigation Costs

These components are consistent with the County of Sacramento Elder and Gerber Creeks Drainage Master Plan.

Extension of the upstream non-trunk storm drainage pipe network by other development projects will be necessary to complete the overall drainage system. Identification of this extended system is beyond the scope of the Specific Plan process.

The estimated $33.2 million in drainage costs include: channel-related improvements, detention basin construction, trunk drainage facilities, and limited land acquisition. Arterial road crossing costs are included where future drainage flow is greater than existing flows. The drainage parkway includes an open space buffer and a joint use trail system that will serve as a drainage maintenance path and a pedestrian bike path. The costs for the paving of the joint use trail and associated landscaping improvements are included in the Park CIP. The open space areas will be funded by adjacent development.

Additional drainage related facilities for bridges and culverts as well as for arterial frontage improvements adjacent to drainage parkway and drainage facilities are included in the NVSSP Roadway CIP. Half-street frontage improvements at collector and minor roadways adjacent to drainage parkway and drainage facilities are included in the NVSSP's Internal Roadway costs.

WATER SUPPLY

The estimated cost of the water system improvements required to serve the NVSSP is $29.2 million. The NVSSP Technical Appendix, *Master Water Supply and Distribution Summary Report for NVSSP*, describes the water supply and distribution facilities required to serve the project site. NVSSP area falls within the Zone 40 Northern Study Area. The portion of the Specific Plan area located west of Bradshaw Road is within the City of Sacramento's American River Place of Use (POU). Surface water from this City source could be utilized within the westerly 945 +- acres of the Plan area. The eastern portion of the Specific Plan will rely upon groundwater as its primary water source.

Facilities listed in the Water CIP that are Zone 40 facilities include:

- Off-site transmission main (Power Inn to W. Boundary)
- On-site Water transmission mains;
- On-site Storage, pumping, and interim wells within the POU; and,
- Off-site Wells, treatment, and storage outside the POU.

The Water CIP does not include internal distribution mains except for those Zone 40 mains required to complete the transmission grid as shown on the NVSSP Water Master Plan. Together, the facilities listed in the CIP and the internal distribution mains will provide adequate domestic water service to all areas of the Specific Plan area.

PARKS & RECREATION

The NVSSP area is located within the Southgate Recreation and Park District (SRPD). The NVSSP includes active-use parks, parkways, and open space sufficient to meet the area's Quimby Act dedication requirement of 5 acres of active park per 1,000 population. Parks and recreation facilities are presented in Sections 6.0 and 8.0, Open Space and Public Facilities and Services of the NVSSP.

The total cost of the active-use parks is estimated to be $6.1 million. This amount includes basic turf and irrigation improvements, fifteen tot lots, and the construction of a Community Center. In addition, $792,000 is included for the development of pedestrian/bike paths and landscaping within the linear parkway and the drainage parkway for a total system cost of $6.9 million.

Arterial roadway frontage improvements at parks, open space, and parkways are included in the Major Roadway costs. Half-street frontage improvements at collector and minor roadways adjacent to parks, open space, and parkways are included in the Internal Roadway costs. The trail system along the drainage corridor is a joint use facility serving as a drainage maintenance path and a pedestrian/bicycle path. The Drainage CIP includes costs to fund the construction of a gravel drainage maintenance road. The Park CIP includes the costs to pave the gravel maintenance road so that it can be used as a pedestrian/bicycle trail. The park CIP also includes costs to fund landscaping for the trail system.

FIRE PROTECTION

The NVSSP area is within American River Fire Protection District. American River Fire Protection District has indicated that increased emergency call volume associated with development of the Specific Plan will require the initial re-opening of Station 52 on Elder Creek Road near Bradshaw. Before buildout of the plan, this station will need to be re-constructed. In addition, Station 52 will need to be equipped with an engine/water tender, wildland interface engine, and ambulance. The existing property will meet the needs of a new station. The cost for these facilities was estimated by the Fire District to be approximately $1.8 million.

TRANSIT

A 10-acre transit center/park-and-ride facility has been designated in the Specific Plan area to provide for the use of carpools and buses and to facilitate the possible future extension of light rail transit into the Specific Plan area, as described in Section 7.0 of the NVSSP. The cost estimate for park-and-ride facility is $2.1 million. Bus stops and bus shelters will be funded and constructed by adjacent development along with the street frontage improvements These costs are not included in the CIP. The NVSSP also includes joint use park and rides to be located in the parking lots of commercial development.

LIBRARY

The Sacramento Public Library Master Plan calls for the construction of an Elk Grove Regional Library at the intersection of Elk Grove Boulevard and Williamson Road. No additional library facilities are anticipated for the NVSSP area; however the Specific Plan indicates that the 4.9-acre Public Services site with the Plan could accommodate a branch library.

For purposes of estimating the cost impacts of this area on the library system, a share of the Elk Grove Regional Library cost was calculated. The cost of the Elk Grove Regional Library was estimated by Sacramento Public Library to be $11,417,100 in 1997 dollars ($7,939,200 for construction and interior furnishings and $3,477,900 for an initial book collection). The regional portion of this facility was estimated in the Elk Grove/West Vineyard (EGWV) Public Facility Financing Plan to be 50% of the total costs, or $5,708,550.

The NVSSP area's projected buildout population of 15,847 (based on the Public Review Draft of the NVSSP dated 5-28-97) is 15.7% percent of the total 101,071 buildout population (includes 85,224 population in the adjusted EGWV area) of the NVSSP and EGWV areas Based on this revised buildout population, the revised estimated plan area cost is $896,000 (15.7% of the $5,708,550 EGWV Community Portion).

SCHOOL

The Specific Plan area is located within the Elk Grove Unified School District. School facilities are presented in more detail in Section 8.0, Public Facilities and Services, of the NVSSP. As requested by Elk Grove Unified School District, two elementary school sites are identified within the Specific Plan area to serve students from new development. The District will accommodate middle and high school students in existing or new facilities located outside the Specific Plan area. The $67.7 million for school facilities needed to serve new development within the NVSSP area was estimated by Elk Grove Unified School District staff.

FACILITY PHASING

Land development within the Specific Plan Area will occur over an extended period of time. Master Planned facilities must be phased to coincide with the level of development at any given time. The manner in which facilities are phased has a significant impact on the overall financing mechanisms that are used to fund these facilities. Major facilities needed prior to major development generally require bond funding or up-front developer funding. To the extent facilities can be incrementally constructed, fee revenues may be used. The following discussion provides an overview of the major phasing issues and how they might affect the overall financing strategy.

ROADWAYS

In conjunction with the County of Sacramento Transportation Division, the Roadway CIP projects will be prioritized based on the results of the traffic study, the availability of other funding sources, and the County's overall transportation priorities. As development progresses within the Specific Plan area, development fees will generate revenue to fund projects based on the project prioritization. The CIP does not provide an exact phasing plan at this time. The phasing of road facilities will be determined in conjunction with completion of the Financing Plan and other planning processes associated with new development.

There are no significant phasing constraints for the roadway CIP identified at this time. At the time that the Financing Plan is developed, additional analysis of phasing of the roadway facilities will be provided. If at such time significant phasing constraints are discovered, financing mechanisms will be defined in detail.

SANITARY SEWER

Phasing of sanitary sewer facilities is driven by the phasing of individual development projects within the area. The first project will require extension of the trunk and lateral facilities necessary to serve it and other upstream developments in accordance with the NVSSP Sewer Master Plan. Current County development standards require the extension of these facilities to the upstream boundary of the project phase constructing them.

The sanitary sewer facilities serving the Specific Plan area will be funded by the project developer with credits or reimbursements from the Sacramento CSD-1 and/or Regional Sanitation District's Fee programs or other private sources.

DRAINAGE

Improvements to the drainage system are necessary to serve development as it occurs. Developing lands will pay County Zone 11A Drainage Fees to fund drainage facilities. The drainage facilities included in the NVSSP Drainage CIP are consistent with the UNET analysis that has been prepared for the County of Sacramento Drainage Master Plan for Elder and Gerber Creeks. The drainage facilities are part of a complete shed wide and regional drainage system that benefits an area larger than the NVSSP area The paragraphs below provide a discussion of the potential phasing of drainage facilities.

Phased Development with Temporary Facilities

Initially, there is a potential that small, isolated development could occur in certain areas of the Plan, outside of the existing flood plain, by providing temporary detention basins. It is also possible that small isolated areas in the eastern portions of the Plan area could develop and gravity discharge to the existing drainage channels provided they do not increase the flood risk to neighboring and downstream projects. Temporary detention basins could occur in areas not constrained by the existing flood plain. The temporary facilities are not

included in the Drainage CIP and are not reimbursable items. While the NVSSP Drainage Master Plan includes the potential for temporary detention facilities, it is policy of the Sacramento County's Water Resources Division (WRD) not to allow temporary facilities. Such use would require WRD approval.

Phased Development with Gravity Facilities

The relatively flat topography of the Specific Plan area and shallow existing creeks dictate that deepening and widening existing drainage channels is necessary to provide a gravity outfall and to lower the ten-year water surface elevation to meet basic county design standards. Development is likely to proceed from west to east in the Plan Area due to the proximity to other urban services, such as sanitary sewer and water, and because this scenario presents the greatest potential to reduce initial drainage improvement costs

First phase development is likely to include the following facility improvements.

Channels

Channel improvements of both Elder Creek and Gerber Creek will be required with any first phase development that will construct permanent Master Plan Channel Facilities. Due to the depth of the ultimate channels, the channel will need to be constructed from the Specific Plan Area approximately 5,000 lineal feet downstream to the existing improved channel near Millbrook Circle in order to daylight. To allow phasing of facilities to coincide with initial levels of development, partial-cross-section channels could be constructed. Constructing these reduced channels will allow a reduction in the length of offsite downstream channel construction required from 5,000 lineal feet to approximately 3,000 lineal feet.

Crossings

As channel improvements are constructed, crossings will need to be improved. Box culvert crossings located in areas where partial depth channel improvements are constructed can be constructed at ultimate depths and capacity. Water will pond at these locations until the channel is constructed to its ultimate depth. Alternatively, the culverts can be constructed at the higher, partial depth elevation, and some or all of the culverts will be relocated at the time the channel is deepened to the ultimate depth. Bridge improvements at crossings located in areas where partial depth channel improvements are constructed will be designed for ultimate depth and capacity and constructed temporarily at partial depth.

Basins

To mitigate for increased drainage flows from initial development, drainage basin facilities will need to be constructed as identified in the CIP. The location and size of those facilities still needs to be determined by the WRD and the developers. The drainage basin solution will need to demonstrate that phased improvements will provide adequate urban flood protection to the proposed on-site development, and will not increase flood risks in downstream areas.

Trunk Pipe System

Trunk and/or non-trunk gravity pipelines will need to be constructed from the Plan area's point of discharge at the upstream channel required to serve the new development and other proposed upstream developments. Current County development standards require the extension of these facilities to the upstream boundary of the project constructing them. These improvements may require funding from a future bond financing district; however, since these facilities are also a part of the regional drainage facilities, funding could also come from accumulated Zone 11A fee revenues if available.

The cost of the initial drainage facilities is dependent upon the amount and location of development as well as the ultimate drainage solution. The estimated range of the first phase of drainage costs is $12.0 to $15.5 million. These costs include channel land acquisition costs and may be reduced when a more detailed study of the extent of existing easements becomes available. Because fee funding may not be available at the time of construction, Mello-Roos CFD bonding, or some other upfront funding mechanism may be required.

WATER

Because of the estimated high cost of providing surface water to the Northern Study area, it is likely that the first phase of development will make use of a proposed transmission main at the intersection of Elk Grove-Florin Road and Gerber Road projected to be constructed in 1998. Extension of a Zone 40 transmission main eastward along Gerber Road to the NVSSP boundary would be feasible as a first phase. As an alternative or adjunct, the first phase could include installation of wells, treatment facilities, and transmission mains that will become an integral part of the ultimate system if the Elk Grove Florin transmission main is not yet constructed.

As development progresses and water demands increase, additional facilities will be required. These facilities include a connection with the City of Sacramento's system to serve the portion of the NVSSP area within the City's American River Place of Use and the construction of transmission mains, booster pumps, wells, storage, treatment facilities, connections to existing systems, and distribution mains.

Funding for the water supply, treatment, storage, and transmission facilities is anticipated to be generated from Zone 40 development impact fees, On-site distribution facilities will be constructed by new development. If it is necessary for new developments to construct Zone 40 facilities, reimbursement will be provided by Zone 40 no later than five years from the date of acceptance by the agency.

FIRE

Phasing of the fire facilities will be dependent on the location and intensity of development within the plan area. The American River Fire District will need to monitor the calls for

service and response times in order to determine the need to re-open and/or reconstruct Station 52. It is anticipated that early development will be served from existing fire stations; however, it is likely that a new facility will be needed prior to the availability of fee funding Since Station 52 serves an area greater than the NVSSP, funding from future development served by Station 52 could be used to accommodate phasing requirements.

TRANSIT

Phasing of the bus stop facilities will be dependent upon the construction of adjacent projects with frontage on these major arterial or thoroughfare roadways. Regional transit (RT) will determine the construction timing of the transit center/park-and-ride facility based on RT's implementation of bus routes and possible extension of light rail to serve the area. RT does not see the need for the park-and-ride in the early stages of development. In addition, this facility could be constructed in stages consistent with fee collections and may be sited at a different location than that shown on the land use plan. The park-and-ride could also be split into several smaller park-and-rides. If it is ultimately determined that all, or a portion, of the transit center/park-and-ride facility will not be required, then the fee proceeds may be used for other public transit related improvements that serve the NVSSP area include, but not limited to, light rail facilities.

PARKS

Park development phasing will be the responsibility of SRPD. The level of park improvements will correspond to the intensity of development. Historically, development has not fronted the cost of park improvements within the Southgate Recreation & Park District. Agreements for developer-funded park improvements will be determined on a case-by-case basis with the SRPD.

Historically, properties along creeks and drainage channels have been obtained for open space uses through project dedication and condition of approval. The open space portion of the drainage parkway, which are required as mitigation for environmental impacts, will be dedicated by individual abutting NVS property owners as a condition of project approval. The open space area will be implemented incrementally as properties are dedicated by development.

Ultimately, the open space areas will include the joint use trail system that will serve as a drainage maintenance path and a pedestrian bicycle path. The gravel maintenance road improvements that are in the Drainage CIP and are funded by Water Agency Zone 11A fees will be constructed concurrently with the construction of the drainage channel improvements. The SRPD will construct the joint use trail system and landscaping from park fee proceeds after sufficient development has occurred so that large stretches of the trail can be constructed at one time. The extent of frontage improvements adjacent to parks, open space, and parkways required for each project will be determined as each project is processed for tentative map approval.

PLANNING AND ENGINEERING COSTS

The planning and engineering costs associated with the development of the Specific Plan are considered to be part of the overall project costs. As such, these costs will be apportioned to all landowners and recovered as development occurs.

V. SOURCES OF FUNDING & FINANCING STRATEGY

SOURCES OF FUNDING

A variety of financing mechanisms may be used to fund the infrastructure facilities required to serve the North Vineyard Specific Plan development and mitigate potential impacts on surrounding areas. The type of financing mechanisms used to fund a given facility will be dependent on the type of land use it is serving, when the facility is needed, and the phasing of facility construction.

This chapter describes the existing and potential sources of facility financing, estimates total revenues from existing fees, compares existing fee revenues with estimated facility costs, and estimates potential increases in overall fees required to fully fund facility costs for new development. **Figure 3** provides an overview of the facility costs and the potential sources of facility funding. Unless required for timing considerations, it is recommended that facilities be funded through development impact fee collections.

EXISTING FUNDING SOURCES

Development Impact Fees

Development impact fees are set under the conditions of Government Code 66000 *et seq.*, also known as AB1600 fees. These code sections set forth the procedural requirements for establishing and collecting development impact fees. The AB1600 procedures require that "a reasonable relationship or nexus must exist between a governmental exaction and the purpose of the condition."[1] Specifically, each local agency imposing a fee must:

- identify the purpose of the fee;
- identify how the fee is to be used;
- determine how a reasonable relationship exists between the fee's use and the type of development project on which the fee is imposed;
- determine how a reasonable relationship exists between the need for the public facility and the type of development project on which the fee is imposed; and
- demonstrate a reasonable relationship between the amount of the fee and the cost of public facility or portion of the public facility attributable to the development on which the fee is imposed.

The following existing development impact fees will be collected from development in the North Vineyard Station Specific Plan area.

[1] Public Needs & Private Dollars; William Abbott, Marian E. Moe, and Marilee Hanson, page 109

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Figure 3
NORTH VINEYARD STATION SPECIFIC PLAN
RECOMMENDED COST ESTIMATES AND FUNDING SOURCES

(All numbers rounded to the nearest thousand)

		Potential Funding Sources					
		Existing County Fees			Proposed		
Facility Type	**Estimated NVSSP Facility Cost**	SRCSD & CSD-1	Sac Co Zone 40 Water Agency	Sac Co Zone 11A Drainage Fee	NVSSP Project-Specific Fees [5]	EGUSD School Impact Fees	Other
	1998 $'s						
Roadway	$28,005,000				$28,005,000		
Internal Roadway	$1,552,000				$1,552,000		
Sanitary Sewer	$5,212,000	$5,212,000					
Drainage	$33,182,000			$33,182,000			
Water	$29,184,000		$28,239,000				$945,000
Parks & Recreation [1]	$6,904,000				$6,904,000		
Fire Protection [2]	$1,795,000				$1,795,000		
Transit	$2,138,000				$2,138,000		
Library [3]	$896,000				$896,000		
School [4]	$67,712,000					$33,392,000	$34,320,000
Total Facilities	**$176,580,000**	**$5,212,000**	**$28,239,000**	**$33,182,000**	**$41,290,000**	**$33,392,000**	**$35,265,000**

(1) Costs based on preliminary estimates provided by Southgate Rec. and Park District. The total cost for the community center has been included in the Park and Recreation CIP and is shown to be funded by the park and recreation component of the NVS PFF
(2) Costs based on preliminary estimate provided by American River Fire District
(3) Costs based on information in the Sacramento Public Library Master Plan.
(4) Costs based on information provided by the Elk Grove Unified School District. Potential "other" funding sources could be the State School Building program, and other unidentified programs
(5) The Project-Specific Fees will fund facilities not covered by existing County fee programs Due to timing constraints, these facilities may also be funded by up-front financing mechanisms

Soure: MacKay & Somps

Sacramento County

The County of Sacramento collects a set of fees to finance its capital facilities requirements. Most development impact fees are paid at the time a building permit is issued. Credits or reimbursements for facilities otherwise funded by the County fee programs may be available if developers fund and construct fee-funded facilities. Fee credits and reimbursements are available within different time frames depending upon the type of facilities constructed. The capital facility fees for Specific Plan facilities include the following:

Sewer Fee: The County of Sacramento Water Quality Division collects two fees from new development to fund expansion of the existing system: the CSD -1 Trunk Fee and the SRCSD Capital Investment Equalization (CIE) Fee. These fees are used to fund all needed treatment capacity and major trunk line improvements required as a result of new development. The developer may initially fund the construction of the trunk facilities with an existing system of credits against future CSD-1 trunk connection fees and reimbursement for amounts beyond those credits. Alternatively, the County may construct the facilities.

Typically, CSD-1 is reimbursing developers for trunk facilities upon acceptance of facilities. CSD-1 does not reimburse developers for the construction of sewer laterals.

Drainage Fee: The Sacramento County Water Agency Zone 11A fees provide funding for on- and off-site regional drainage improvements. The Zone 11A fees from planned NVSSP development will fund approximately 37 percent of the total onsite and offsite drainage facilities included in the Drainage CIP; however, the area of benefit for these facilities extends well beyond the NVSSP area. Though Zone 11A will ultimately fund the drainage improvements, the County WRD has indicated that Zone 11A does not have, nor is projected to have, sufficient funds to construct the required major drainage facilities when needed. Additionally, funds may not be available to reimburse up-front funding for the construction of drainage facilities within a five-year time period. The Financing Plan will address these issues and provide a funding solution.

Roadway Fee: The North Vineyard area is in Zone IV of the Sacramento County Transportation Development Fee Program. These fees are meant to fund major roadway improvements necessary to handle the traffic generated by new development in unincorporated Sacramento County.

Water Agency Zone 40: Water fees collected from the NVSSP area will fund the estimated $27 6 million of Sacramento County Water Agency Zone 40 water supply, treatment and transmission facilities included in the Water CIP. Two hundred dollars of the Zone 40 water fees is paid prior to improvement plan approval. The remainder of the fee is paid prior to building permit issuance.

The Sacramento County Water Agency usually constructs the necessary water facilities. In some cases developers may need to advance fund facilities and receive fee credits or reimbursements. If developers construct Zone 40 water facilities, they are subject to reimbursement within a five-year time period.

Developer Funding

Private funding from project developers is generally used to construct the in-track roads, sewer, water, and drainage improvements. Developer funding may also be used on an interim basis to fund major backbone infrastructure facilities. Such funding would be subject to fee credits or reimbursements from future fee collections or bond sales

Elk Grove Unified School District

The Specific Plan area is located within the boundaries of the Elk Grove Unified School District. The District currently charges a school mitigation fee of $3.17 per square foot for residential development anc. $0.30 per square foot for non-residential development This fee is authorized by County Ordinance and includes the fees authorized by AB2926 (currently $1.84 per square foot of residential development and $0.30 per non-residential square foot) plus a supplemental developer fee. The development impact fees cover approximately half of the total school impacts. The remaining amounts will be funded through a combination of State funding and Mello-Roos bond proceeds.

The current bond authorization for the EGUSD Mello-Roos CFD has nearly been reached. The EGUSD is in the process of reviewing its funding options. A reauthorization of the Mello-Roos CFD will be put before the District voters in 1998. Such a reauthorization will increase the overall bonding authorization and will increase the special taxes for development approved after June 1, 1999. If not passed, other funding sources will be required to meet school needs.

Measure A Sales Taxes

Sacramento County voters passed the Measure A ballot initiative in 1988 that authorized the creation of the Sacramento Transportation Authority (STA) and instituted a one-half cent sales tax for the provision of countywide transit and transportation improvements over a 20-year timeframe. Several projects included in the Roadway CIP are funded in part by Measure A.

POTENTIAL NEW FUNDING SOURCES

NVSSP Project-Specific Fees

Many of the facilities identified for development of the NVSSP area are not included in existing fees programs; therefore, project-specific fees for the NVSSP will need to be established in order to determine fair-share funding levels for project land uses The NVSSP project-specific fees will include:

- Major Roadways
- Internal Roadways
- Parks and Recreation Facilities
- Fire Protection Facilities and Equipment
- Library Facilities
- Transit Facilities

A preliminary allocation of these facility costs is provided in the Cost Allocation section of this Chapter and in **Appendix B**.

Alternative Funding Sources

Bond financing is often used to fund public facilities needed prior to the collection of fees or other revenue sources. The use of bond financing for infrastructure within the NVSSP will be determined in the Financing Plan. It is likely that bond financing will be used to fund some of the major roadway, water, and drainage facilities needed to accommodate new development. The following discussion provides an overview of the major public financing mechanisms used to incur land-based debt.

- Mello-Roos CFD -- Mello-Roos CFDs could be used to fund improvements that provide general benefit to a subarea within the Specific Plan and may be subject to reimbursement agreements or fee credits. Mello-Roos CFD's repayment structure allows flexibility in determining who pays special taxes and when; therefore, payment of these facilities can be tied more directly to who is gaining development benefit from having them in place. The permanent drainage system, road, water, wastewater, and park development are improvements that could be funded with this source.

- Assessment Districts – Assessment Districts could be used to fund facilities that are needed at the start of development and provide direct benefit to specific parcels. These include roadway, drainage, water, or wastewater improvements. Assessment Districts are subject to provisions under the recent Proposition 218 ballot initiative. Proposition 218 requires that all future assessment districts be subject to a vote of the property owners being assessed with voting weighted by the amount of assessment for a given parcel.

- Landscape and Lighting Districts – A Landscape and Lighting District could be used to fund ongoing maintenance for landscape corridors and/or area parks in addition to park capital requirements. Such a District would be subject to the voting provisions established under Proposition 218.

Mello-Roos Community Facilities District (CFD)

The 1982 Mello-Roos Community Facilities District Act enables cities, counties, and special districts to establish CFDs and to levy special taxes to fund a wide variety of facilities and services. The proceeds of the Mello-Roos special tax can be used for direct funding and/or to retire bonds. A series of CFDs could be implemented based on the specific financing considerations within proposed new developments. Mello-Roos CFD bonds are generally used for facility costs that cannot be deferred or funded on a pay-as-you-go basis.

The establishment of Mello-Roos CFDs requires a two-thirds affirmative vote of the CFD electorate. For CFDs with fewer than twelve registered voters, a land-owner election is held with each acre of land representing one vote. For CFDs with twelve or more registered voters, a registered-voter election is held.

Assessment District (AD)

California statutes give local governments the authority to levy a number of special assessments for specific public improvements such as streets, storm drains, sewers, street lights, curbs, gutters, and sidewalks. The County can create a special assessment district that defines both the area to benefit from the improvements and the properties that will pay for the improvements. Thereafter, each property within the district will be assessed a share of the cost of improvements that is proportional to the benefit it receives from those improvements.

There are a variety of assessment district acts available to finance public facilities The most likely act to fund improvements for the Plan Area would be the Improvement Bond Act of 1915. This Act also provides a vehicle for issuing assessment bonds for assessments authorized under the 1911 and 1913 Benefit Assessment Acts.

Facilities in the North Vineyard Specific Plan area that could be funded by Assessment Districts include major roads, sewer, water, , and drainage improvements where there is direct benefit to specific parcels. The establishment of Assessment Districts will be subject to the provisions of Proposition 218 that was adopted in November of 1996. These provisions, among other things, require a vote of property owners being assessed with the vote weighted by the amount of property assessment.

Landscape and Lighting District

The Landscape and Lighting District Act of 1972 allows for placing assessments on property to fund ongoing maintenance of parks, landscape corridors, and street lighting. On a limited basis, Landscape and Lighting Districts (LLDs) can also be used to fund capital expenditures. LLDs are most likely to be considered for the landscape and corridor maintenance associated with new subdivisions. LLDs are subject to the provisions of the recently passed Proposition 218 which limits the use of these types of assessments and requires a vote of the assessed property owners at a district's inception or with an increase in assessments.

FINANCING STRATEGY

Implementation of the financing for Specific Plan infrastructure will occur over several years. This Financing strategy provides an overview of the type of financing mechanisms that may be utilized fund future facility costs. The Financing Plan will recommend the actual financing mechanisms that will be used. The actual implementation of these mechanisms will be based on the amount of overall development, the location of development, and the ability to phase major project infrastructure and will be fully analyzed in the Financing Plan.

The current financing strategy includes two major elements:

Develop Project-Specific Fees: The foundation of the overall funding strategy is the establishment of project-specific fees that fairly allocate the costs of project infrastructure to

all benefiting land uses. The establishment of these fees ensures that each development will pay its fair share of backbone infrastructure costs. The project-specific fees also provide a way to calculate each development's total cost burden for backbone infrastructure. This determination will be utilized in formation of financing districts and the calculation of fee credits or reimbursements for any oversizing of facilities by a project developer.

Establish Bond Financing Districts (as necessary): Bond financing will be utilized when the cost of required backbone infrastructure is not able to be funded from accumulated fee revenues. As a general rule, financing districts are required to fund the infrastructure needed to open up new development phases. For example, the initial phases of development will require the construction of new roads and drainage facilities. Since the cost of these facilities will be incurred prior to any development fees being collected, a Mello-Roos CFD or assessment district may be formed to provide the required up-front financing.

COST ALLOCATIONS

In order to assess the potential impact and feasibility of funding the estimated cost of facilities required to implement the Specific Plan, EPS and MacKay & Somps have performed a preliminary cost allocation of the project-specific facility costs to each of the land uses in the preferred land use alternative. The allocations of costs are provided in order to assess the potential impact and feasibility of the Specific Plan facilities on future development. A detailed allocation of facility costs for purposes of establishing project-specific development impact fees will need to be performed once the Specific Plan's land uses are approved and additional detailed facility studies are performed.

OVERVIEW OF COST ALLOCATION APPROACH

Cost allocations are made between land uses based on relative benefit received by those land uses. The facilities considered in this cost allocation are only those related to the Specific Plan technical studies and do not include those already covered by Countywide fees (e.g., wastewater fees), school mitigation, or other funding sources. The allocation of costs within these existing fee programs is a part of the nexus studies developed to set those fees.

The costs of the backbone infrastructure facilities and community facilities will be apportioned over all the developable parcels within the North Vineyard Specific Plan area. Cost allocations for backbone infrastructure and community facilities have been made using dwelling-unit equivalent (DUE) factors. These use factors vary by type of facility and land use. This methodology results in cost allocations that are specific to the type and intensity of development proposed within the Specific Plan. Detailed allocation assumptions are provided in **Appendix B**

Based on this methodology, the construction costs estimated for the Specific Plan have been apportioned to the proposed land uses for each type of improvement included in the

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Figure 4
NORTH VINEYARD STATION SPECIFIC PLAN
ESTIMATED PROJECT-SPECIFIC FEES PER DUE*

Facility Type	North Vineyard Station Specific Plan		
	Facility Cost	Estimated DUEs	Estimated Fee Per DUE
	1998 $'s		
Roadway	$28,005,000	6,081	**$4,605**
Internal Roadway	$1,552,000	6,081	**$255**
Parks & Recreation	$6,904,000	6,120	**$1,128**
Fire Protection	$1,795,000	6,354	**$282**
Transit	$2,138,000	8,837	**$242**
Library	$896,000	6,042	**$148**
Total	**$41,290,000**		**$6,661**

(1) The fees shown here are to be used for estimating purposes only.
* DUE = Dwelling Unit Equivalent

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Figure 5
NORTH VINEYARD STATION SPECIFIC PLAN
ESTIMATED PROJECT-SPECIFIC & COUNTY FEES PER UNIT

		Average Residential Fee / D.U.		Average Non-Residential Fee / Acre		
		Single Family	Multi Family	Neighborhood Commercial	Convenience Commercial	Business Professional
		(1,800 s.f. resid.)	(850 s.f. resid.)	(0.25 FAR)	(0.28 FAR)	(0.40 FAR)
Existing Fees:						
County of Sacramento	[3]					
Sewer (CSD-1 & SRCSD)		$2,674	$2,006	$14,707	$14,707	$14,707
Water (Zone 40)	[1]	$2,224	$2,224	$4,210	$4,210	$4,210
Drainage (Zone 11A)		$1,750	$540	$13,060	$13,060	$13,060
Roadway (District IV)		$749	$567	$23,762	$26,596	$30,450
Transit (District IV)		$117	$238	$5,559	$6,222	$8,178
Affordable Housing Fee	[2]	$0	$0	$8,393	$9,394	$16,878
Subtotal County Fees		**$7,514**	**$5,575**	**$69,691**	**$74,189**	**$87,483**
Elk Grove Unified School District	[5]	**$5,562**	**$2,627**	**$3,270**	**$3,660**	**$5,220**
Subtotal Existing Fees		**$13,076**	**$8,201**	**$72,961**	**$77,849**	**$92,703**
NVS PFFP Development Fees:	[4]					
Roadway		$4,145	$2,763	$75,065	$75,065	$62,170
Internal Roadway		$230	$153	$4,160	$4,160	$3,445
Parks & Recreation		$1,128	$776	$0	$0	$0
Fire Protection		$282	$194	$2,006	$2,006	$3,277
Transit		$226	$166	$12,774	$12,774	$8,927
Library		$148	$102	$0	$0	$0
Subtotal NVS PFFP Development Fees		**$6,159**	**$4,155**	**$94,004**	**$94,004**	**$77,819**
TOTAL FEES PER UNIT or PER ACRE		**$19,235**	**$12,356**	**$166,965**	**$171,853**	**$170,522**
TOTAL FEES PER BUILT S.F.		**$10.69**	**$12.79**	**$15.32**	**$14.09**	**$9.80**

NOTES

(1) Fees subject to 25% increase in March 1, 1998. Assumes a 10-acre site for non residential. The fee is based on $3,320 per acre plus $6,896 for a 2" meter per site.

(2) Based on Ordinance 0801 which charges $0.97 per s.f. of office space and $0.77 per s.f. of commercial space.

(3) The existing County fees are based on available information provided by the various agencies.

(4) The NVS PFFP development fees are estimates only. The actual fees will be determined at the time development occurs.

(5) The residential EGUSD fees are based $3.09/s.f. and assumes 1,800 s.f. residences for all single family and 850 s.f. residences for medium density and multi family. The commercial EGUSD fees are based on 0.30/s.f. Mello-Roos CFD bonds are not shown here.

VI. IMPACT OF SPECIFIC PLAN FACILITIES FINANCING ON NON-DEVELOPING LANDOWNERS

The purpose of this section is to clarify that non-developing landowners will not be required to pay for the cost of facilities serving new development. This chapter addresses this issue on a qualitative basis.

Funding of the facilities related to implementation of the North Vineyard Station Specific Plan will not burden non-developing landowners. Safeguards built into the funding mechanisms and County planning process will be used to assure that the funding of Specific Plan facilities is limited to the development benefiting from those improvements. The establishment of project-specific development impact fees will ensure that adequate funding is available for the long-term construction of Specific Plan facilities.

LIMITATIONS TO USE OF FINANCING MECHANISMS

Each of the financing mechanisms that will be used to fund infrastructure for new development are limited in their application and impact on existing development. The limitations associated with each of these sources are discussed below.

AB1600 FEES

Development impact fees, or nexus fees, will be the primary mechanism used to fund long-term infrastructure needs in the Specific Plan area. These fees will only apply to new construction within the plan area based on a particular development's benefit from the facility being funded. In this regard, development in the urban growth areas will be responsible for funding those facilities needed to support buildout of the adopted land use plan. Development impact fees are not paid prior to receiving development approvals or pulling building permits.

PUBLIC FINANCING DISTRICTS

Public financing districts are likely to be used in situations where specific backbone or public service facilities are required ahead of AB1600 fee funding availability. The ability to include existing development within the boundaries of public financing districts is extremely limited. This has recently been further limited by the provisions of Article XIIIC and XIIID of the State Constitution (Proposition 218). The following discussion provides an overview of Proposition 218 followed by a discussion of the limitations of specific financing districts.

Proposition 218 Safeguards

Proposition 218 was approved by the California voters on November 5, 1996. Entitled the "Right to Vote on Taxes Act," Prop. 218 provide several new safeguards against owners of existing property paying for the cost of new development via financing districts The primary safeguards include:

- Any tax or assessment determined to be for general governmental services must be approved by a majority of the electorate as a general tax.
- Any new assessment costs must be determined to be property-related by an engineer certified by the State of California.
- Any new assessments must be voted on by the property owners being assessed. The vote is weighted by the amount of assessment for each parcel.
- Property owners must be noticed of any new or increased fees or charges along with an explanation of the basis for the amount of the proposed fee or charge The fee or charge can be overturned by a majority protest of the owners of identified parcels

The primary safeguard from Proposition 218 is that new assessment districts must be formed by a vote of the assessed property owners and not on a protest-proceeding basis as they were before Proposition 218.

Assessment Districts

As discussed above, assessment districts are subject to a majority vote of property owners being assessed. Assessment districts are still viable financing tools and will not be included in any assessment unless there is an identifiable specific benefit received by these land uses for the facilities to be financed. However, assessment districts are subject to the provisions of Proposition 218, and are limited in their applicability. The facilities anticipated for the NVSSP land uses are those required for new development and are not designed to benefit non-developing land uses.

Mello-Roos Community Facility Districts (CFDs)

Mello-Roos CFDs were enacted by the State Legislature in 1982. Mello-Roos CFDs are special taxing districts; therefore, they are subject to a two-thirds majority vote to form. Any CFD with more than twelve registered voters is subject to a registered voter election. CFDs with fewer than twelve registered voters are subject to a landowner election with one vote awarded per acre of land.

Mello-Roos CFDs have been formed primarily in developing areas prior to the occupancy of any new homes because of the CFD voting requirements. The use of Mello-Roos CFDs are only anticipated in the areas zoned for urban development. It is not anticipated, and unlikely, that any Mello-Roos CFD would be proposed in an area that has not received some level of development approval.

SAFEGUARDS BUILT INTO THE PLANNING PROCESS

In addition to the overall safeguards that exist in the financing mechanisms that will be used to fund Specific Plan infrastructure, there are additional safeguards to impacts on existing development built into the ongoing planning process within the County.

DETAILED FINANCING PLANS

County General Plan policy requires detailed financing plans and implementation of financing mechanisms prior to the granting of entitlements for new development. This means that the mechanisms used to fund overall infrastructure will be reviewed in detail as development plans advance. This process will allow community members opportunities to review and comment on the implementation of the financing plans and further evaluate the potential impact of proposed funding mechanisms on the existing community.

RIGHT TO VOTE ON NEW ASSESSMENTS OR FEES

As discussed above, the recent passage of Proposition 218 has increased the ability of property owners to limit the use of assessment districts, landscape and lighting districts, or general taxes without the consent of those paying the assessments, fees, or taxes.

APPENDICES

Appendix A – Summary Cost Estimates

Appendix B – DUE Calculations

APPENDIX A

Summary Cost Estimates

(Provided by MacKay & Somps)

Appendix A-1	Roadway Summary (2 pages)
Appendix A-2	Internal Roadways
Appendix A-3	Sewer Summary
Appendix A-4	Drainage Summary (2 pages)
Appendix A-5	Parks and Recreation Summary
Appendix A-6	Cost Detail Sheet

Figure A-1

Mackay Somps
Job No 7536-0

NORTH VINEYARD STATION SPECIFIC PLAN
CIP
ROADWAY
SUMMARY

Roadwy3A xls
2/17/98

MITIGATION MEASURE	Project Number	Roadway Segment/ Item	Project Description	On-site or Off-site	Total Estimated Cost	% Funded by Other Sources	Other Funding Sources	Reimb Available	Cummulative Total Estimated Net Cost
TR 3	R3 3	Florin Road- CCTC RR (Project Boundary) to Waterman	6 Lane 108' R/W center sect w/ med (excludes outside 11' pvmt & flg)	On	$670 000	0 00%		$0	$670 000
TR 3	R3 11	Florin Road- CCTC RR Crossing	Reconstruct at-grade RR crossing (108' R/W)	On	$225 000	0 00%		$0	$1 095 000
TR 3	R3 12	Florin Road Crossing at Elder Creek	New Bridge Construction (108' R/W)	On	$858 000	0 00%		$0	$1 953 000
	R29	Florin Rd at Waterman Rd	6 X 4 Intersection Widening & Signalization, 3-way (Incl 450' Intx leg imps)	On	$589 000	0 00%		$0	$2 542 000
	R8 12	Elk Grove-Florin Road- Elder Creek Crossing	New Bridge Construction (108' R/W)	Off	$801 000	0 00%		$0	$3 343 000
TR 4	R4 3	Gerber Road- Project Boundary to Waterman	4 Lane 84' R/W center sect w/ med (excludes outside 11' pvmt & flg)	On	$570 000	0 00%	50% Reimb from Vineyard Springs	$285 000	$3 628 000
	R34	Gerber Rd at Waterman Rd	4 X 4 Intersection Widening & Signalization, 4-way (Incl 450' Intx leg imps)	On	$680 000	0 00%	50% Reimb from Vineyard Springs	$340 000	$3 968 000
	R60	Gerber Rd at Collector	4 X 2 Intersection Signalization 3-way	On	$140 000	0 00%		$0	$4 108 000
	R4 3 1	Park Frontage Imps -Gerber Road- (Project Bndry to Waterman)	11' Pavement 3 C&G 6' Sidewalk = 20'	On	$9 000	0 00%		$0	$4 117 000
	R4 3 2	Ex Resid Frtg Imps -Gerber Rd -(Proj Bndry to Waterman No Side Only)	11' Pavement 3' C&G 6' Sidewalk = 20' Soundwall	On	$53 000	0 00%		$0	$4 170 000
	R7 3	Waterman Road- Gerber (Project Bndry) to Florin (Project Bndry)	4 Lane 84' R/W center sect w/ med (excludes outside 11' pvmt & flg)	On	$1 378 000	0 00%		$0	$5 548 000
	R7 12	Waterman Road- Gerber Creek Crossing	2 8' X 6' Box Culverts With Headwalls (84 R/W)	On	$159 000	0 00%		$0	$5 707 000
	R7 13	Waterman Road- CCTC RR Crossing	Const new at grade RR crossing (84 R/W)	On	$200 000	0 00%		$0	$5 907 000
	R7 3 1	Drain Parkway Frontage Imps -Waterman Road- (Gerber to Florin)	11' Pavement, 3' C&G 6' Sidewalk = 20'	On	$46 000	0 00%		$0	$5 953 000
	R7 3 2	Open Space Frontage Imps Waterman Road- (Gerber to Florin)	11 Pavement 3' C&G 6' Sidewalk = 20'	On	$41 000	0 00%		$0	$5 994 000
	R7 3 3	Park Frontage Imps Waterman Road- (Gerber to Florin)	11' Pavement 3' C&G 6' Sidewalk = 20'	On	$205 000	0 00%		$0	$6 199 000
	R53	Waterman Rd at Collector	4 X 2 Intersection Signalization, 4-way	On	$140 000	0 00%		$0	$6 339 000
	R54	Waterman Rd at Collector	4 X 2 Intersection Signalization, 3-way	On	$140 000	0 00%		$0	$6 479 000
	R55	Waterman Rd at Collector	4 X 2 Intersection Signalization, 4-way	On	$140 000	0 00%		$0	$6 619 000
TR 2	R8 3	Bradshaw Road- Gerber (Project Bndry) to Florin (Project Bndry)	6 Lane 108' R/W center sect w/ med (excludes outside 11' pvmt & flg)	On	$1 628 000	100 00%	Meas A Dev Fees Fair Share Assess D	$0	$8 619 000
TR 17	R35	Gerber Rd at Bradshaw Rd	4 X 6 Intersection Widening & Signalization 4-way (Incl 450' Intx leg imps)	On	$785 000	60 00%	60% see above 20% Reimb Vineyard Sprin	$157 000	$8 776 000
	R8 13	Bradshaw Road- Gerber Creek Crossing	2-8' X 5' Box Culverts With Headwalls (108' R/W)	On	$192 000	0 00%		$0	$8 968 000
	R8 3 1	Drain Parkway Frontage Imps Bradshaw Road- (Gerber to Florin)	11' Pavement 3' C&G 6' Sidewalk = 20'	On	$29 000	0 00%		$0	$8 997 000
	R8 3 2	Ex Resid Frontage Imps -Bradshaw Road-(Gerber to Florin)	11' Pavement 3' C&G, 6' Sidewalk = 20' Soundwall	On	$165 000	0 00%		$0	$7 162 000
	R8 3 3	Ex Comm Frontage Imps Bradshaw Road-(Gerber to Florin)	11' Pavement, 3' C&G, 6' Sidewalk = 20'	On	$100 000	0 00%		$0	$7 262 000
	R56	Bradshaw Rd at Collector	6 X 2 Intersection Signalization 4-way	On	$140 000	0 00%		$0	$7 402 000
	R57	Bradshaw Rd at Collector	6 X 2 Intersection Signalization, 4-way	On	$140 000	0 00%		$0	$7 542 000
	R58	Bradshaw Rd at Collector	6 X 2 Intersection Signalization 4-way	On	$140 000	0 00%		$0	$7 682 000
TR-1	R6 6	South Watt- Fruitridge to Jackson	6 Lane 108' R/W center sect w/ med (excludes outside 11' pvmt & flg)	Off	$1 721 000	80 00%	Co Dev Fees City?	$0	$8 026 200
TR-12	R21	Jackson Rd at South Watt Ave	4 X 4 Intersection Widening 4-way (Incl 450' Intx leg imps)	Off	$600 000	100 00%	Unidentified	$0	$8 026 200
TR 2	R8 5A	Bradshaw Road- Elder Creek to s/o Morrison Creek Crossing	6 Lane 108' R/W center sect w/ med (excludes outside 11' pvmt & flg)	Off	$1 554 000	100 00%	Meas A, Dev Fees	$0	$8 026 200
TR 14	R26	Elder Creek Rd at Bradshaw Rd	4 X 6 Intersection Widening 4-way (Incl 450' Intx leg imps)	Off	$705 000	60 00%	Meas A Dev Fees	$0	$8 306 200
TR 2	R8 16	Bradshaw Road- Tributary to Elder Creek Crossing	Bridge/Culvert Improvements	Off	$190 000	100 00%	Meas A Dev Fees	$0	$8 306 200
TR 2	R8 5B	Bradshaw Road- s/o Morrison Creek Crossing to Jackson	6 Lane 108' R/W center sect w/ med (excludes outside 11' pvmt & flg)	Off	$555 000	0 00%		$0	$8 863 200
TR-2	R8 15	Bradshaw Road- Morrison Creek Crossing	Bridge/Culvert Improvements	Off	$1 012 000	100 00%	Reed Fund I S T E A	$0	$8 863 200
TR-13 TR 24	R22	Jackson Rd at Bradshaw	Upgrade signalized 4 X 4 to 6 X 6 Intx 4-way (Incl 450' Intx leg imps)	Off	$350 000	100 00%	Unidentified	$0	$8 863 200
TR-1	R6 5	South Watt Elder Creek to Fruitridge	6 Lane 108' R/W center sect w/ med (excludes outside 11' pvmt & flg)	Off	$1 795 000	80 00%	Co Dev Fees City?	$0	$9 222 200
TR-1	R6 4	South Watt- Florin to Elder Creek	6 Lane 108' R/W center sect w/ med (excludes outside 11' pvmt & flg)	Off	$1 628 000	80 00%	Co Dev Fees City?	$0	$9 547 800
TR 19	R28	Florin Rd at Elk Grove-Florin Rd	6 X 6 Intersection Widening & Signalization 4-way (Incl 450' Intx leg imps)	Off	$1 059 000	80 00%	Meas A, Other Sales Tax Co Rd Dev F	$0	$9 759 600
TR 18	R25	Elder Creek Rd at South Watt Ave	4 X 6 Intersection Widening & Signalization 4-way (Incl 450' Intx leg imps)	Off	$785 000	80 00%	Co Roadway Dev Fees	$0	$9 916 600
TR-2	R8 4	Bradshaw Road- Florin (Project Bndry) to Elder Creek	6 Lane 108' R/W center sect w/ med (excludes outside 11' pvmt & flg)	Off	$1 628 000	100 00%	Meas A, Dev Fees	$0	$9 916 600
TR 2	R8 14	Bradshaw Road- Elder Creek Crossing	Bridge/Culvert Improvements	Off	$259 000	0 00%		$0	$10 175 600
TR 3	R3 4	Florin Road- Waterman to Bradshaw	6 Lane 108' R/W 4 Lanes & center sect w/ med (excludes outside lanes & fl	On	$1 147 000	0 00%		$0	$11 322 600
TR-15	R30	Florin Rd at Bradshaw Rd	6 X 6 Intersection Widening & Signalization 4-way (Incl 450' Intx leg imps)	On	$1 059 000	50 00%	Meas A Dev Fees	$0	$11 852 100
	R50	Florin Rd at Collector	6 X 2 Intersection Signalization 4-way	On	$140 000	0 00%		$0	$11 992 100
TR 4	R4 4	Gerber Road- Waterman to Bradshaw	4 Lane 84' R/W center sect w/ med (excludes outside 11 pvmt & flg)	On	$1 325 000	0 00%	50% Reimb from Vineyard Springs	$662 500	$12 654 600
TR 4	R4 11	Gerber Road- CCTC RR Crossing	Reconstruct at grade RR crossing (84 R/W)	On	$200 000	0 00%	50% Reimb from Vineyard Springs	$100 000	$12 754 600
TR 4	R4 12	Gerber Road- Gerber Creek Crossing No 4	2 8' X 6' Box Culverts With Headwalls (84' R/W)	On	$202 000	0 00%	50% Reimb from Vineyard Springs	$101 000	$12 855 600
TR 4	R4 13	Gerber Road- Gerber Creek Crossing No 3	2 8' X 6' Box Culverts With Headwalls (84 R/W)	On	$185 000	0 00%	50% Reimb from Vineyard Springs	$92 500	$12 948 100
	R61	Gerber Rd at Collector	4 X 2 Intersection Signalization 3-way	On	$140 000	0 00%		$0	$13 088 100
	R62	Gerber Rd at Collector	4 X 2 Intersection Signalization 3-way	On	$140 000	0 00%		$0	$13 228 100
	R4 4 1	Open Space Frontage Imps Gerber Road- (Waterman to Bradshaw)	11' Pavement, 3' C&G 6' Sidewalk = 20'	On	$14 000	0 00%		$0	$13 242 100
	R4 4 2	Drain Parkway Frontage Imps -Gerber Road- (Waterman to Bradshaw)	11' Pavement 3' C&G, 6' Sidewalk = 20'	On	$35 000	0 00%		$0	$13 277 100
	R4 4 3	Detention Basin Frontage Imps-Gerber Road- (Waterman to Bradshaw)	11' Pavement 3' C&G 6' Sidewalk = 20'	On	$27 000	0 00%		$0	$13 304 100
	R4 4 4	Ex Resid Frtg Imps -Gerber Rd -(Waterman to Bradshaw No Side Only)	11' Pavement, 3' C&G 6' Sidewalk = 20', Soundwall	On	$278 000	0 00%		$0	$13 582 100
	R4 3F	Gerber Road-Exist Resid Front -(Proj Bndry to Waterman So side only)	Outside Travel Lane 11' pavement width with 6' shoulder at Existing Resident	Off	$80 000	0 00%	100% Reimb from Vineyard Springs/ EGWV	$80 000	$13 582 100
TR 3	R3 2	Florin Road- Elk-Grove Florin to CCTC RR (Project Boundary)	6 Lane 108' R/W center sect w/ med (excludes outside 11' pvmt & flg)	Off	$1 277 000	0 00%		$0	$14 859 100
	R4 12F	Drainage Frontage Imps -Gerber Road Crossing #4 (So Side Only)	11' Pavement 3' C&G 6' Sidewalk = 20'	Off	$14 000	0 00%	100% Reimb from Vineyard Springs/ EGWV	$14 000	$14 859 100
	R4 13F	Drainage Frontage Imps -Gerber Road Crossing #3 (So Side Only)	11' Pavement 3' C&G 6' Sidewalk = 20'	Off	$14 000	0 00%	100% Reimb from Vineyard Springs/ EGWV	$14 000	$14 859 100
	R4 4F	Gerber Road-Exist Resid Front -(Waterman to Bradshaw South side only)	Outside Travel Lane 11' pavement width with 6' shoulder at Existing Resident	Off	$65 000	0 00%	100% Reimb from Vineyard Springs/ EGWV	$65 000	$14 859 100
TR-1	R6 3	Elk Grove-Florin Road- Gerber to Florin	6 Lane 108' R/W center sect w/ med (excludes outside 11' pvmt & flg)	Off	$1 628 000	80 00%	See Co Roadway Dev Fee	$0	$15 184 700
TR 4	R4 2	Gerber Road- Elk-Grove Florin to Project Bndry	4 Lane 84' R/W center sect (excludes outside 11' pvmt & flg)	Off	$437 000	0 00%	50% Reimb from Vineyard Springs	$218 500	$15 403 200
TR 16	R33	Gerber Rd at Elk Grove-Florin Rd	4 X 6 Intersection Widening 4 way (Incl 450' Intx leg imps)	Off	$705 000	100 00%	Meas A Dev Fees O S T Fair Share SL	$0	$15 403 200

STREETS_SUM

Figure A-1

Mackay Somps
Job No 7536 0

NORTH VINEYARD STATION SPECIFIC PLAN
CIP
ROADWAY
SUMMARY

Roadway1A.xls

MITIGATION MEASURE	Project Number	Roadway Segment/ Item	Project Description	On-site or Off-site	Total Estimated Cost	% Funded by Other Sources	Other Funding Sources	Reimb Available	Cummulative Total Estimated Net Cost
	R4 2F	Gerber Road-Exist Residential Frontages (E G Florin to Proj Bndry)	Outside Travel Lane 11' pavement width with 6' shoulder at Existing Resident	Off	$27 000	0 00%	50% Reimb from Vineyard Springs	$13 500	$15 416 730
	R9 2	Vineyard Road- Gerber (Project Bndry) to Florin (Project Bndry)	4 Lane 84 R/W center sect w/ med (excludes outside 11 pvmt & flg)	On	$1 166 000	0 00%		$0	$15 542 730
	R36	Gerber Rd at Vineyard Rd	4 X 4 Intersection Widening & Signalization 4-way (incl 450' intx leg imps)	On	$680 000	0 00%	50% Reimb from Vineyard Springs	$340 000	$16 522 730
	R31	Florin Rd at Vineyard Rd	6 X 4 Intersection Widening & Signalization 3-way (incl 450' intx leg imps)	On	$589 000	0 00%		$0	$17 511 730
	R59	Vineyard Rd at Collector	4 X 2 Intersection Signalization 3-way	On	$140 000	0 00%		$0	$17 651 730
TR-8	R3 5	Florin Road- Bradshaw to Vineyard (Project Bndry)	6 Lane 108 R/W center sect w/ med (excludes outside 11 pvmt & flg)	On	$1 628 000	0 00%		$0	$19 279 730
	R51	Florin Rd at Collector	6 X 2 Intersection Signalization 3-way	On	$140 000	0 00%		$0	$19 419 730
	R52	Florin Rd at Collector	6 X 2 Intersection Signalization 3-way	On	$140 000	0 00%		$0	[illegible]
	R4 5	Gerber Road- Bradshaw to Vineyard (Project Bndry)	4 Lane 84 R/W center sect w/ med (excludes outside 11' pvmt & flg)	On	$1 166 000	0 00%	50% Reimb from Vineyard Springs	$583 000	$20 142 730
	R4 14	Gerber Road- Gerber Creek Crossing No 2	2 8' X 5 Box Culverts With Headwalls (84 R/W)	On	$179 000	23 00%	23% Drain Fee Reimb 50%Reimb Vineyd Sp	$68 915	$20 211 615
TR 5	R1 2	Jackson Road- South Watt to Bradshaw	6 Lane 108' R/W center sect w/ med (excludes outside 11 pvmt & flg)	Off	$3 848 000	100 00%	Unidentified	$0	[illegible]
	R4 5 1	Drain Parkway Frontage Imps Gerber Road- (Bradshaw to Vineyard)	11 Pavement 3' C&G 6' Sidewalk = 20'	On	$15 000	0 00%		$0	[illegible]
	R4 5 2	Detention Basin Frontage Imps-Gerber Road- (Bradshaw to Vineyard)	11' Pavement 3 C&G 6' Sidewalk = 20'	On	$20 000	0 00%		$0	$20 246 615
	R3 3 1	Drain Parkway Frontage Imps-Florin Road- (CCTC RR to Waterman)	11' Pavement 3 C&G 6' Sidewalk = 20'	On	$34 000	0 00%		$0	[illegible]
	R3 3 2	Detention Basin Frontage Imps-Florin Road- (CCTC RR to Waterman)	11 Pavement 3 C&G 6' Sidewalk = 20'	On	$79 000	0 00%		$0	[illegible]
TR 25	R23	Jackson Rd at Excelsior	6 X 4 Intersection Widening no & so bound only (incl 450' intx leg imps)	Off	$353 000	100 00%	Unidentified	$0	$20 359 615
TR 23	R4 6	Gerber Road- Vineyard (Project Boundary) to Excelsior	Widen shoulders to provide minimum pavement width	Off	$485 000	0 00%	50% Reimb from Vineyard Springs	$242 500	$20 832 115
	R4 15	Gerber Road- Gerber Creek Crossing No 1	Bridge/Culvert Improvements	Off	$461 000	0 00%	50% Reimb Vineyard Springs	$230 500	$20 832 615
TR 7 TR 22	R11 3	Excelsior Road- Gerber to Florin	Widen shoulders to provide minimum pavement width	Off	$485 000	0 00%		$0	$21 317 615
TR-8	R3 6	Florin Road- Vineyard (project Boundary) to Excelsior	Widen shoulders to provide minimum pavement width	Off	$440 000	0 00%		$0	$21 757 615
	R3 13	Florin Road- Tributary No 1 to Gerber Creek Crossing	Bridge/Culvert Improvements	Off	$86 000	0 00%		$0	$21 843 615
TR-10	R9 1	Vineyard Road- CalMine to Gerber (Project Boundary)	Widen shoulders to provide minimum pavement width	Off	$970 000	0 00%	100% Reimb from Vineyard Spngs/ EGWV	$970 000	$21 843 615
TR-6 TR 21	R2 3	Elder Creek Road- Bradshaw to Excelsior	Widen shoulders to provide minimum pavement width	Off	$1 015 000	0 00%		$0	$22 858 615
TR 7 TR 22	R11 4	Excelsior Road- Florin to Elder Creek	Widen shoulders to provide minimum pavement width	Off	$485 000	0 00%		$0	$23 343 615
	R11 15	Excelsior Road- Tributary to Elder Creek Crossing	Bridge/Culvert Improvements	Off	$86 000	0 00%		$0	$23 429 615
TR 11	R5 5	CalMine Road- Vineyard to Excelsior	Widen shoulders to provide minimum pavement width	Off	$440 000	0 00%	100% Reimb from Vineyard Spngs/ EGWV	$440 000	$23 429 615
TR 7 TR 22	R11 5	Excelsior Road- Elder Creek to Jackson	Widen shoulders to provide minimum pavement width	Off	$245 000	0 00%		$0	[illegible]
TR 7 TR 22	R11 2	Excelsior Road- CalMine to Gerber	Widen shoulders to provide minimum pavement width	Off	$1 015 000	0 00%	100% Reimb from Vineyard Spngs/ EGWV	$1 015 000	[illegible]
TR-6 TR 21	R2 2	Elder Creek Road- South Watt to Bradshaw	Widen shoulders to provide minimum pavement width	Off	$970 000	0 00%		$0	$24 644 615
TR 11	R5 3	CalMine Road- 1300' East of Waterman to Bradshaw	Widen shoulders to provide minimum pavement width	Off	$310 000	0 00%	100% Reimb from Vineyard Spngs/ EGWV	$310 000	$24 644 615
TR-11	R5 4	CalMine Road- Bradshaw to Vineyard	Widen shoulders to provide minimum pavement width	Off	$440 000	0 00%	100% Reimb from Vineyard Spngs/ EGWV	$440 000	$24 644 615
	R44A	Florin Rd at Sunrise Blvd	Interim Intersection Improvements 3-way(inc 450' intx leg imp s)	Off	$307 000	75 00%	Sac Aggregates/Sunrise/Douglas C	$0	$24 721 615
	R44B	Florin Rd at Sunrise Blvd	Ultimate Intersection Improvements 3-way(incl 450' intx Leg imp s)	Off	$668 000	66 70%	Sunrise/Douglas Com Plan/Spec	$0	$24 943 615
	R12	Offsite Arterial Frontage Improvements	Class "A" Frontage Improvements	Off	$624 000	0 00%		$0	$25 345 615
	R101	Right of Way Acquisition for Onsite Arterials	ROW land acquisition	On	$1 558 000	0 00%		$0	[illegible]
	R100	Right of Way Acquisition for Offsite Arterial	ROW land acquisition	Off	$1 101 000	0 00%		$0	[illegible]
	Preparation of P F F P and Technical Studies				$0	0 00%		$0	$28 004 615
		Grand Total Roadway			$55,911 000			$6 782 915	$28 005 000

Note Roadway segment lengths exclude 450' intersection leg widening included in CIP Regional Identified Intersections (except where intersection projects have not made the cut off (above the thick line)

Figure A-2

TABLE 10 2-2
NORTH VINEYARD STATION SPECIFIC PLAN CIP
INTERNAL ROADWAYS

NORTH VINEYARD STATION SPECIFIC PLAN
PRELIMINARY CAPITAL IMPROVEMENT ITEMS LISTING
Internal Roadway Improvements Listing & Cost Estimate

Project Number	Item	Project Description	On-site or Off site	Detail Sheet Linked?	Quantity	Unit	Unit Price	Total Estimated Cost
Internal Collector Frontage Improvements at Parks, Open Space, Drainage Parkway & Facilities								
IR1	Park 1/2 Street Fig Imps -Onsite Collector Roads 56' R/W	Complete Half Section - 21' Pavement, 3' C&G, 6' Sidewalk = 30'	On	Yes	6 780	L F	$110	$745 800
IR2	Park 1/2 Street Fig Imps -Onsite Collector Roads 50' R/W	Complete Half Section - 18' Pavement, 3' C&G 6' Sidewalk = 27'	On	Yes	2 100	L F	$103	$216 300
IR3	Drain Parkway/Det Basin 1/2 Street Fig Imps -Onsite Collector Roads 56' R/W	Complete Half Section - 21' Pavement, 3' C&G, 6' Sidewalk = 30'	On	Yes	4 000	L F	$110	$440 000
IR4	Drain Parkway/Det Basin 1/2 Street Fig Imps -Onsite Collector Roads-50' R/W	Complete Half Section - 18' Pavement, 3' C&G 6' Sidewalk = 27'	On	Yes	865	L F	$103	$89 100
IR5	Open Space Parkway 1/2 Street Fig Imps -Onsite Collector Roads 56' R/W	Complete Half Section - 21' Pavement, 3' C&G, 6' Sidewalk = 30'	On	Yes	550	L F	$110	$60 500
IR6	Right of Way Acquisition for Collector Frontage Improvements		On	No	0	Acres	$70 000	$0
	Total for Internal Collector Frontage Improvements				**14,295**	L F		**$1,552,000**
Total Internal Roadway Facilities								**$1,552,000**

PRELIMINARY DUE CALCULATIONS

Preliminary Roadway DUE's =	**6,124**
Preliminary Internal Roadway Fee per DUE =	**$263**

Figure A-3

NORTH VINEYARD STATION SPECIFIC PLAN
CIP
SEWER SUMMARY

NORTH VINEYARD STATION SPECIFIC PLAN
PRELIMINARY SEWER CAPITAL IMPROVEMENT ITEMS LISTING

Project Number	Project Name	On-site or Off site	Project Description	Detail Sheet Linked	Total
SANITARY SEWER IMPROVEMENTS					
Trunk Systems Carrying 1 MGD or Greater					
2.1	**TRUNK SANITARY SEWER - FLORIN ROAD, SHED C**				
2 1a	TRUNK SS - FLORIN ROAD (INTERCEPTOR TO WATERMAN)	On	36"/27" TRUNK SAN SEWER CONST	Yes	$256 000
2 1b	TRUNK SS - FLORIN ROAD (WATERMAN TO BRADSHAW)	On	27" TRUNK SAN SEWER CONST	Yes	$750 000
2 1c	TRUNK SS - FLORIN ROAD (BRADSHAW TO VINYARD)	On	24"/18" TRUNK SAN SEWER CONST	Yes	$820 000
2.2	**TRUNK SANITARY SEWER - GERBER ROAD, SHED A**				
2 2a	TRUNK SS - GERBER ROAD (INTERCEPTOR TO WATERMAN)	On	42"/39" TRUNK SAN SEWER CONST	Yes	$905 000
2 2b	TRUNK SS - GERBER ROAD (WATERMAN TO BRADSHAW)	On	39"/33" TRUNK SAN SEWER CONST	Yes	$1 482 000
2 2c	TRUNK SS - GERBER ROAD (BRADSHAW TO VINYARD)	On	24" TO 15" TRUNK SAN SEWER CONST	Yes	$974 000
Subtotal Trunk Systems Carrying 1 MGD or Greater					**$5,187,000**
Lateral Sewer Systems Carrying Less Than 1 MGD					
2 3	LATERAL SS PASSILIS LANE (AT INTERCEPTOR)	On	LATERAL SAN SEWER CONST (INTERCEPTOR CONNECT)	Yes	$25 000
Subtotal Lateral Systems Carrying Less Than 1 MGD					**$25,000**
Total Sanitary Sewer Costs					**$5,212,000**

Figure A-4

Mackay Somps
Job No 7536-0

Drainage xlw
2/17/98

NORTH VINEYARD STATION SPECIFIC PLAN
CIP
DRAINAGE
SUMMARY

NORTH VINEYARD STATION SPECIFIC PLAN
PRELIMINARY DRAINAGE CAPITAL IMPROVEMENT ITEMS SUMMARY

Project Number	Project Name	On-site or Off-site	Project Description	Detail Sheet Linked	Total
DRAINAGE IMPROVEMENTS					
(See also Roadway Section for Additional Bridges/Culverts)					
Channel Related Items					
3.1	**Elder Creek Reach 3 (Improved Channel to W Bndry)**				
3 1 1 A	ELDER CREEK REACH 3A - OFF-SITE CHANNEL IMPS	Off	OFF-SITE CHANNEL CONSTR (APPROX 1,830 L F)	Yes	$947 000
3 1 1 B	ELDER CREEK REACH 3B - OFF-SITE CHANNEL IMPS	Off	OFF-SITE CHANNEL CONSTR (APPROX 3 020 L F)	Yes	$1,572,000
3.2	**Elder Creek Reach 1A (W. Bndry to Florin Rd.)**				
3 2 1 A	ELDER CREEK REACH 1A (a) - CHANNEL IMPROV'S	On	CHANNEL CONSTR (APPROX 2,650 L F)	Yes	$1 1 13 000
3 2 1 B	ELDER CREEK REACH 1A (b) - CHANNEL IMPROV'S	On	CHANNEL CONSTR (APPROX 2,910 L F)	Yes	$1 10 000
3 2 2	ELDER CREEK REACH 1A - DRAINAGE PARKWAY	On	CHANNEL PARKWAY CONSTR (APPROX 5,560 L F)	Yes	$132 000
3 2 3	ELDER CREEK REACH 1A (a) - McCOY LANE CROSSING	On	(3) 8'x6' BOX CULVERT CONSTR w/ HEADWALLS (+/- 40' R/W)	Yes	$152 000
3 2 4	ELDER CREEK REACH 1A (b) - CCTC RR BRIDGE CROSSING	On	CONST NEW BRIDGE @ ELDER CREEK & CCT RxR CROSSING	Yes	$367 000
3 3	**Elder Creek Reach 1B (Upstream of Florin Rd)**				
3 3 1	ELDER CREEK REACH 1B - OFF-SITE CHANNEL IMPROV'S	Off	CHANNEL CONSTR (APPOX 1,400 L F)	Yes	$756 000
3 4	Left Blank For Additions	—	—	—	—
3.5	**Gerber Creek Reach 2A (W. Bndry to Gerber Rd. Crossing No. 4)**				
3 5 1 A	GERBER CREEK REACH 2A (a) - CHANNEL IMPROV'S	On	CHANNEL CONSTR (APPROX 3 350 L F)	Yes	$1 599,000
3 5 1 B	GERBER CREEK REACH 2A (b) - CHANNEL IMPROV'S	On	CHANNEL CONSTR (APPROX 3,750 L F)	Yes	$1 669 000
3 5 2	GERBER CREEK REACH 2A - DRAINAGE PARKWAY	On	CHANNEL PARKWAY CORR CONSTR (APPROX 7,100 L F)	Yes	$168,000
3 5 3	GERBER CREEK REACH 2A (a) -PASSALIS LN CROSSING (WEST)	On	(3) 8'x6' BOX CULVERT CONST w/ HEADWALLS (56' R/W)	Yes	$167 000
3 5 4	GERBER CREEK REACH 2A (b) -PASSALIS LN CROSSING (EAST)	On	(3) 8'x6' BOX CULVERT CONSTR w/ HEADWALLS (56' R/W)	Yes	$167,000
3 5 5	GERBER CREEK REACH 2A (b) - CCTC RR BRIDGE CROSSING	On	CONST NEW BRIDGE @ ELDER CREEK AND CCTC RxR	Yes	$294,000
3 6	**Gerber Creek Reach 2B (Gerber Rd Crossing 4 to Crossing 3)**				
3 6 1	GERBER CREEK REACH 2B - OFF-SITE CHANNEL IMPS	Off	CHANNEL CONSTR (APPROX 2,030 L F)	Yes	$984 000
3 7	**Gerber Creek Reach 2C (Gerber Rd Crossing 3 to Crossing 2)**				
3 7 1	GERBER CREEK REACH 2C CHANNEL IMPROVEMENTS	On	CHANNEL CONSTR (APPROX 3,680 L F)	Yes	$1 331 000
3 7 2	GERBER CREEK REACH 2C - DRAINAGE PARKWAY	On	DRAINAGE PARKWAY CORR CONST (APPROX 3,680 L F)	Yes	$87,000
3 8	**Arterial Roadway Drainage Crossings** (also identified in Roadway CIP)	Off	Portion of Arterial Roadway Drainage Crossings (Roadway Proj No 4 14)	No	$41 000
Subtotal Channel Related Items					**$12,916,000**

Figure A-4

NORTH VINEYARD STATION SPECIFIC PLAN
CIP
DRAINAGE
SUMMARY

NORTH VINEYARD STATION SPECIFIC PLAN
PRELIMINARY DRAINAGE CAPITAL IMPROVEMENT ITEMS SUMMARY

Project Number	Project Name	On-site or Off-site	Project Description	Detail Sheet Linked	Total
Detention Basin Construction					
3 9	DETENTION BASIN E24B (ELDER CREEK REACH 1A (a))	On	3 7 AC WATER QUALITY DETENTION BASIN CONST	Yes	$545 000
3 10	DETENTION BASIN E26 (ELDER CREEK REACH 1A (b))	On	18 3 AC FLOOD CONTROL/W Q DET BASIN CONST	Yes	$2 790 000
3 11	DETENTION BASIN E24A (GERBER CREEK REACH 2A (a))	On	12 AC FLOOD CONTROL/W Q DET BASIN CONST	Yes	$1 918 000
3 12	DETENTION BASIN G41 (GERBER CREEK REACH 2A (b))	On	10 6 AC FLOOD CONTROL/W Q DET BASIN CONST	Yes	$1 705 000
3 13	DETENTION BASIN G46 (GERBER CREEK REACH 2C)	On	16 AC FLOOD CONTROL/W Q DET BASIN CONST	Yes	$2 627 000
3 14	OFFSITE DETENTION BASIN E20 (ELDER CREEK REACH 3)	Off	16 AC OFFSITE FLOOD CONTROL BASIN CONST	Yes	$2 456 000
Subtotal Detention Basin Construction					**$12,041,000**
Trunk Drainage Serving 30 Acres or More					
3 15	TRUNK DRAINGE, SHED L	On	TRUNK DRAIN FAC (DISCHARGE TO BASIN E24B)	Yes	$55 000
3 16	TRUNK DRAINGE, SHED H	On	TRUNK DRAIN FAC (DISCHARGE TO ELDER CREEK, REACH2B)	Yes	$93 000
3 17	TRUNK DRAINGE SHEDS D & E	On	TRUNK DRAIN FAC (DISCHARGE TO BASIN E26)	Yes	$739 000
3 18	TRUNK DRAINGE SHED G	On	TRUNK DRAIN FAC (DISCHARGE TO BASIN E26)	Yes	$135 000
3 19	TRUNK DRAINGE, SHED K	On	TRUNK DRAIN FAC (DISCHARGE TO GERBER CREEK, REACH 2A)	Yes	$53,000
3 20	TRUNK DRAINGE, SHED J	On	TRUNK DRAIN FAC (DISCHARGE TO GERBER CREEK, REACH 2A)	Yes	$44 000
3 21	TRUNK DRAINGE SHED F	On	TRUNK DRAIN FAC (DISCHARGE TO GERBER CREEK REACH 2A)	Yes	$497 000
3 22	TRUNK DRAINGE SHED C	On	TRUNK DRAIN FAC (DISCHARGE TO BASIN G46)	Yes	$508 000
3 23	TRUNK DRAINGE SHEDS A & B	On	TRUNK DRAIN FAC (DISCHARGE TO BASIN G46)	Yes	$935 000
Subtotal Trunk Drainage Construction					**$3,059,000**
Wetland Mitigation					
3 100	WETLAND MITIGATION—ONSITE	On	Onsite Wetland Mitigation for Drainage Improvements		$2 735 000
3 101	WETLAND MITIGATION—OFFSITE	Off	Offsite Wetland Mitigation for Drainage Improvements		$2 431 000
					$6,166,000
Total Drainage Costs					**$33,182,000**

Figure A-5

Mackay Somps
Job No 7536-0

NORTH VINEYARD STATION SPECIFIC PLAN CIP
PARKS AND RECREATION SUMMARY

Parks xls
2/17/98

NORTH VINEYARD STATION SPECIFIC PLAN
PRELIMINARY CAPITAL IMPROVEMENT ITEMS LISTING
Park & Recreation Improvements Listing & Cost Estimate

Project Number	Item	Project Description	On-site or Off-site	Detail Sheet Linked?	Quantity	Unit	Unit Price	Total Estimated Cost
Drainage Parkway Facilities								
DP1	Low Flow Pedestrian / Bicycle Path Crossing	Low Flow Crossing at Elder Creek and CCTC Railroad	On	No	1	Each	$25 000	$25 000
DP2	Elder Creek Reach 1A- (Western SPA Bndry to Florin Rd)	Drainage Parkway Landscaping Improvements (Assume On-site area only and 6,950 l f trail)	On	No	6,950 0	L F	$16	$111,000
DP3	Geber Creek Reach 2A- (Confluence w/ Elder Creek to Gerber Rd Crossi	Drainage Parkway Landscaping Improvements (Assume 8,875 l f trail)	On	No	8,875 0	L F	$16	$142 000
DP4	Geber Creek Reach 2C - (Gerber Rd Crossing #3 to #2)	Drainage Parkway Landscaping Improvements (Assume 4,600 l f trail)	On	No	4,600 0	L F	$16	$74 000
DP5	JOINT USE DRAINAGE PARKWAY PED /BIKE TRAIL	JOINT USE DRAINAGE PARKWAY PED /BIKE PATH (Excludes excavation and aggregate base included in Drainage CIP)	On	Yes	20,425	L F	$18	$368,000
DP6	Drainage Parkway Land Acquisition		On	No	20,425 0	AC	$0	$0
	Total For Drainage Corridor Parkway Costs				**20,425 0**	**Acres**		**$720,000**
Park Development								
P1	Basic Park Improvements (0 acres<Quimby Park Acreage<5 acres)	Site Improvements and Engineering	On	Yes	24 0	AC	$52,500	$1 260 000
P2	Basic Park Improvements (5 acres<Quimby Park Acreage<10 acres)	Site Improvements and Engineering	On	Yes	43 5	AC	$43,500	$1 892 000
P3	Basic Park Improvements (10 acres<Quimby Park Acreage)	Site Improvements and Engineering	On	Yes	14 9	AC	$39,000	$581 000
P4	Tot Lots	Tot Lots	On	No	15	Each	$50,000	$750 000
P5	Community Center	Includes Bldg, Site Improv 's, Fees, Landscap , Arch & Eng	On	No	1	Lump Sum	$1 629,000	$1 629 000
	Total For Park Development				**82 4**	**Acres**		**$6,112,000**
Linear Parkway Development								
P20	Linear Parkway Landscaping	Linear Parkway Landscaping	On	No	1,900 0	L F	$16	$30 000
P21	LINEAR PARKWAY PED /BIKE TRAIL	PED /BIKE PATH AT PARKS & LINEAR PARKWAY	On	Yes	1 900	L F	$22	$42 000
P22	Linear Parkway Land Acquisition		On	No	1 900 0	AC	$0	$0
	Total For Linear Parkway Development							**$72,000**
Total Parks and Recreations Facilities								**$6,904,000**

APPENDIX B

DUE Calculations

Appendix B-1	Estimated Dwelling Unit Equivalents (DUEs)
Appendix B-2	Estimate of Roadway DUE's
Appendix B-3	Estimate of Transit DUE's
Appendix B-4	Estimate of Parks and Recreation DUE's
Appendix B-5	Estimate of Fire Protection DUE's
Appendix B-6	Estimate of Library DUE's

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APPENDIX B-1

North Vineyard Station Specific Plan

Estimated Dwelling Unit Equivalents (DUEs)

Facility Type	Estimated RESIDENTIAL DUEs	Estimated NON-RESIDENTIAL DUEs	Estimated DUEs
Roadway	5,488	593	6,081
Internal Roadway	5,488	593	6,081
Parks & Recreation	6,042	79	6,120
Fire Protection	6,042	313	6,354
Transit	6,982	1,855	8,837
Library	6,042	0	6,042
Total	36,084	3,432	39,516

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APPENDIX B-2
North Vineyard Station Specific Plan
Estimate of Roadway DUE's

Land Use	Area (Acres)	Average Density (Units Per Acre)	DUE's per Acre (DUE Factor)	Total Roadway DUE's
Residential:				
Single Family/ 1-3 DU's/acre	150.4	2	2.00	300.8
Single Family/ 3-5 DU's/acre	644.5	5	4.50	2,900.3
Single Family/ 4-7 DU's/acre	287.3	6	5.40	1,551.4
Medium Density/ 7-14 DU's/acre	44.2	10	8.00	353.6
Multi-Family/ 14-22 DU's/acre	35.4	18	10.80	382.3
Subtotal Residential	**1,161.8**			**5,488.4**
Other:				
Commercial	28.5		16.30	464.6
Business Professional	9.5		13.50	128.3
Golf Course	19.8		0.00	-
Public Services	4.9		0.00	-
Totals	**1,224.5**			**6,081.2**

NOTES:

1. This analysis provides a preliminary estimate of North Vineyard Station Specific Plan DUE's for roadway facilities. The DUE factors for each land use are based on DUEs in the EGWV PFFP and the EEG PFFP. The zoning in the EGWV PFFP area varies slightly from the zoning in the NVSSP area; however, it is close enough to be utilized to provide a preliminary estimate of NVSSP area DUEs.
2. Thirteen existing residential parcels are within the NVSSP area. These existing dwelling units are not included in the total dwelling unit equivalent calculations.

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APPENDIX B-3
North Vineyard Station Specific Plan
Estimate of Transit DUE's

Land Use	Area (Acres)	Average Density (Units Per Acre)	DUE's per Acre (DUE Factor)	Total Transit DUE's
Residential:				
Single Family/ 1-3 DU's/acre	150.4	2	2.07	311 3
Single Family/ 3-5 DU's/acre	644.5	5	4.67	3,009.8
Single Family/ 4-7 DU's/acre	287.3	6	5.43	1,560.0
Medium Density/ 7-14 DU's/acre	44.2	10	14.07	621.9
Multi-Family/ 14-22 DU's/acre	35.4	18	41.78	1,479.0
Subtotal Residential	**1,161.8**			**6,982.1**
Other:				
Commercial	28.5		52.80	1,504 8
Business Professional	9.5		36.90	350.6
Golf Course	19.8		0.00	-
Public Services	4.9		0.00	-
Totals	**1,224.5**			**8,837.4**

NOTES·

1. This analysis provides a preliminary estimate of North Vineyard Station Specific Plan DUE's for transit facilities. The DUE factors for each land use are based on DUEs in the EGWV PFFP and the EEG PFFP. The zoning in the EGWV PFFP area varies slightly from the zoning in the NVSSP area; however, it is close enough to be utilized to provide a preliminary estimate of NVSSP area DUEs.
2. Thirteen existing residential parcels are within the NVSSP area. These existing dwelling units are not included in the total dwelling unit equivalent calculations.

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APPENDIX B-4
North Vineyard Station Specific Plan
Estimate of Parks and Recreation DUE's

Land Use	Area (Acres)	Average Density (Units Per Acre)	DUE's per Acre (DUE Factor)	Total Parks & Rec DUE's
Residential:				
Single Family/ 1-3 DU's/acre	150.4	2	2.00	300 8
Single Family/ 3-5 DU's/acre	644.5	5	5.00	3,222 5
Single Family/ 4-7 DU's/acre	287.3	6	6.00	1,723 8
Medium Density/ 7-14 DU's/acre	44.2	10	8.06	356 3
Multi-Family/ 14-22 DU's/acre	35.4	18	12.38	438 3
Subtotal Residential	**1,161.8**			**6,041.6**
Other:				
Commercial	28.5		1.70	48 5
Business Professional	9.5		3.20	30 4
Golf Course	19.8		0.00	-
Public Services	4.9		0.00	-
Totals	**1,224.5**			**6,120.5**

NOTES:
1. This analysis provides a preliminary estimate of North Vineyard Station Specific Plan DUE's for park facilities. The DUE factors for each land use are based on DUEs in the EGWV PFFP and the EEG PFFP. The zoning in the EGWV PFFP area varies slightly from the zoning in the NVSSP area; however, it is close enough to be utilized to provide a preliminary estimate of NVSSP area DUEs.
2. Thirteen existing residential parcels are within the NVSSP area. These existing dwelling units are not included in the total dwelling unit equivalent calculations.

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APPENDIX B-5
North Vineyard Station Specific Plan
Estimate of Fire Protection DUE's

Land Use	Area (Acres)	Average Density (Units Per Acre)	DUE's per Acre (DUE Factor)	Total Fire Protection DUE's
Residential:				
Single Family/ 1-3 DU's/acre	150.4	2	2.0	300.8
Single Family/ 3-5 DU's/acre	644.5	5	5.0	3,222 5
Single Family/ 4-7 DU's/acre	287.3	6	6.0	1,723.8
Medium Density/ 7-14 DU's/acre	44.2	10	8.1	356.3
Multi-Family/ 14-22 DU's/acre	35.4	18	12.4	438 3
Subtotal Residential	**1,161.8**			**6,041.6**
Other:				
Commercial	28.5		7.1	202.4
Business Professional	9.5		11.6	110 2
Golf Course	19.8		-	-
Public Services	4.9		-	-
Totals	**1,224.5**			**6,354.2**

NOTES:
1. This analysis provides a preliminary estimate of North Vineyard Station Specific Plan DUE's for fire facilities. The DUE factors for each land use are based on DUEs in the EGWV PFFP and the EEG PFFP. The zoning in the EGWV PFFP area varies slightly from the zoning in the NVSSP area; however, it is close enough to be utilized to provide a preliminary estimate of NVSSP area DUEs.
2. Thirteen existing residential parcels are within the NVSSP area. These existing dwelling units are not included in the total dwelling unit equivalent calculations.

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APPENDIX B-6
North Vineyard Station Specific Plan
Estimate of Library DUE's

Land Use	Area (Acres)	Average Density (Units Per Acre)	DUE's per Acre (DUE Factor)	Total Library DUE's
Residential:				
Single Family/ 1-3 DU's/acre	150.4	2	2.00	300 8
Single Family/ 3-5 DU's/acre	644.5	5	5.00	3,222.5
Single Family/ 4-7 DU's/acre	287.3	6	6.00	1,723 8
Medium Density/ 7-14 DU's/acre	44.2	10	8.06	356 3
Multi-Family/ 14-22 DU's/acre	35.4	18	12.38	438.3
Subtotal Residential	**1,161.8**			**6,041.6**
Other: (1)				
Commercial	28.5		0.00	-
Business Professional	9.5		0.00	-
Golf Course	19.8		0.00	-
Public Services	4.9		0.00	-
Totals	**1,224.5**			**6,041.6**

NOTES:
1. This analysis provides a preliminary estimate of North Vineyard Station Specific Plan DUE's for library facilities. The DUE factors for each land use are based on DUEs in the EGWV PFFP and the EEG PFFP. The zoning in the EGWV PFFP area varies slightly from the zoning in the NVSSP area; however, it is close enough to be utilized to provide a preliminary estimate of NVSSP area DUEs.
2. Thirteen existing residential parcels are within the NVSSP area. These existing dwelling units are not included in the total dwelling unit equivalent calculations.
3. Non-Residential use properties do not pay library fees.

CAPITAL IMPROVEMENT PROGRAM

for

NORTH VINEYARD STATION SPECIFIC PLAN

VOLUME II
of the
NVSSP FINANCING STRATEGY

February 11, 1998

Prepared by:

MacKay & Somps, Inc.
1771 Tribute Road, Suite E
Sacramento, California 95815

I. INTRODUCTION

The North Vineyard Station Specific Plan (NVSSP) area is located on approximately 1,595 acres in Sacramento County. The NVSSP is both a policy and regulatory document to provide for the orderly and systematic development of the planning area. The Financing Strategy, being prepared in conjunction with the NVS Specific Plan, establishes a policy framework to guide the overall financing strategy for the major public facilities that are required to serve the proposed land uses in the Specific Plan. This Capital Improvement Plan, an appendix to the NVSSP Financing Strategy, identifies the major infrastructure required to serve development in the Plan area, including the estimated costs for the facilities. A detailed financing plan will be required concurrent with the approval of the first zoning entitlements in the NVSSP. The financing plan will build upon this Capital Improvement Program and the Financing Strategy.

The Capital Improvement Program (CIP) is separated into major public facilities categories. The NVSSP CIP Summary lists the individual Capital Improvement Program categories with their associated estimated costs. Each Capital Improvement Program category includes facility information that may include the following:

- Brief description of the major facilities including notes regarding background information or unique features associated with the infrastructure
- Summary listing the major public facilities and their associated costs
- Exhibits showing the location of the projects listed
- Detail sheets for individual project costs

Additional information regarding phasing constraints and funding sources is addressed in the Financing Strategy. The changes to the land plan that have been proposed will result in only minor impacts to the infrastructure identified in the Capital Improvement Program. When the future NVSSP Financing Plan is developed, the CIP can be updated to reflect the approved land plan.

NORTH VINEYARD STATION SPECIFIC PLAN
CIP
SUMMARY

ROADWAY IMPROVEMENTS		
TOTAL ROADWAY IMPROVEMENTS		**$28,005,000**
INTERNAL ROADWAY IMPROVEMENTS		
TOTAL INTERNAL ROADWAY IMPROVEMENTS		**$1,552,000**
SANITARY SEWER IMPROVEMENTS		
TOTAL SANITARY SEWER IMPROVEMENTS		**$5,212,000**
DRAINAGE IMPROVEMENTS		
Channel Related Items	$12,916,000	
Detention Basin Construction	$12,041,000	
Trunk Drainage Serving 30 Acres or More	$3,059,000	
Wetland Mitigation	$5,166,000	
TOTAL DRAINAGE IMPROVEMENTS		**$33,182,000**
WATER IMPROVEMENTS		
TOTAL WATER SYSTEM IMPROVEMENTS		**$29,184,000**
PARKS AND RECREATION		
Drainage Parkway	$720,000	
Park Development	$6,112,000	
Linear Parkway Development	$72,000	
TOTAL PARKS AND RECREATION		**$6,904,000**
FIRE PROTECTION		**$1,795,000**
TRANSIT		**$2,138,000**
LIBRARY		**$896,000**
SCHOOL		**$67,712,000**
TOTAL IMPROVEMENTS		**$176,580,000**

II. ROADWAY

The NVSSP Roadway Capital Improvement Program was developed in conjunction with Sacramento County Transportation Division. The NVSSP Traffic Analysis was used as the basis for development of the NVS Roadway CIP. Other documents, such as the Elk Grove / West Vineyard Springs Public Facilities Financing Plan, the 1997 Sacramento County Transportation C.I.P., and many other documents, also aided in the process.

Development in the NVSSP area will have impacts on the local circulation network. The level of impact varies greatly from facility to facility. Because it is not necessary and unfeasible to construct all roadway facilities, impacted by NVS development, to their ultimate condition, the County Transportation Division has taken a more comprehensive planning approach. As large planning areas are studied, each project area is assigned a financial responsibility to the local transportation system. This financial responsibility total cost is applied toward the roadway facilities that most greatly enhance the system.

This two phase approach was used to develop the NVSSP Roadway CIP. The first phase involved the identification of NVS's project share financial responsibility of all roadway facilities impacted by development in the Plan area. The second phase involved the determination of facilities to be included in the Roadway CIP as well as the prioritization of the facilities. The NVSSP CIP Roadway Exhibit shows the roadway facilities and their cooresponding project CIP identification number.

PHASE I

The project share for a roadway segment was calculated by taking the cumulative plus project trip distribution percentage multiplied by the net trips and dividing by the total calculated cumulative plus project average daily trips. The project share for an intersection was calculated by averaging the project shares of the roadway segments for each leg of the intersection. The project share percentages for each facility, as shown in NVSSP CIP Roadway Phase I Exhibit, were multiplied by the total cost of the ultimate project to determine NVS's project share financial responsibility for that facility. The total NVSSP project share financial responsibility was $28,005,000.

PHASE II

Many sources were used to develop the final Roadway CIP. The prioritized NVSSP Roadway CIP Summary shows a total cost of $28,005,000. The projects were identified and prioritized based on many criteria including but not limited to the following:

- Existing capacity of roadway
- Existing plus project and cumulative plus project requirements
- Draft Environmental Impact Report Mitigation Measures
- County Priorities
- Availability of other funding sources (ie: Vineyard Spring C.P.A., EG/WV PFFP, Meas. A)
- Onsite development is expected to occur from the west to the east

Several assumptions were made to arrive at the right of way land acquisition costs for onsite and offsite arterials (Proj. No.'s R101, and R100). The assumptions are as follows:

- Existing R.O.W. is 50' width
- Ultimate 84' ROW without curb lanes: no additional ROW required
- Ultimate 84' ROW curb lane: additional 20' width required for each side
- Ultimate 108' ROW without curb lanes: additional 18' width required
- Ultimate 108' ROW curb lane: additional 20' width required for each side
- Widen to 36' minimum pavement width: no additional ROW required
- Intersection leg at arterial: 450 l.f. x 38' width = 17,000 s.f. per leg
- Intersection leg at collector: no additional ROW required
- Land value of $100,000 per acre
- Onsite arterial land acquisition reduced by 50% to account for future dedications

Onsite arterial roadway frontage improvements at public uses such as parks, open space, drainage corridor, and detention basins are included in the Roadway CIP. The NVSSP CIP Park/O.S./Drainage Facility/Parkway Frontage at Arterial Roadways Exhibit shows the location of these onsite arterial frontage facilities. An offsite arterial roadway frontage improvement project, (Proj. No. R12), has been included to provide funding for various offsite roadways that are adjacent to existing land uses and public uses such as drainage corridors.

Because of the potential cost sharing for arterial roadway drainage crossing facilities, these projects are identified in both the Roadway CIP and the Drainage CIP. At this time, the arterial drainage crossing facilities are split between the two CIP categories as follows:

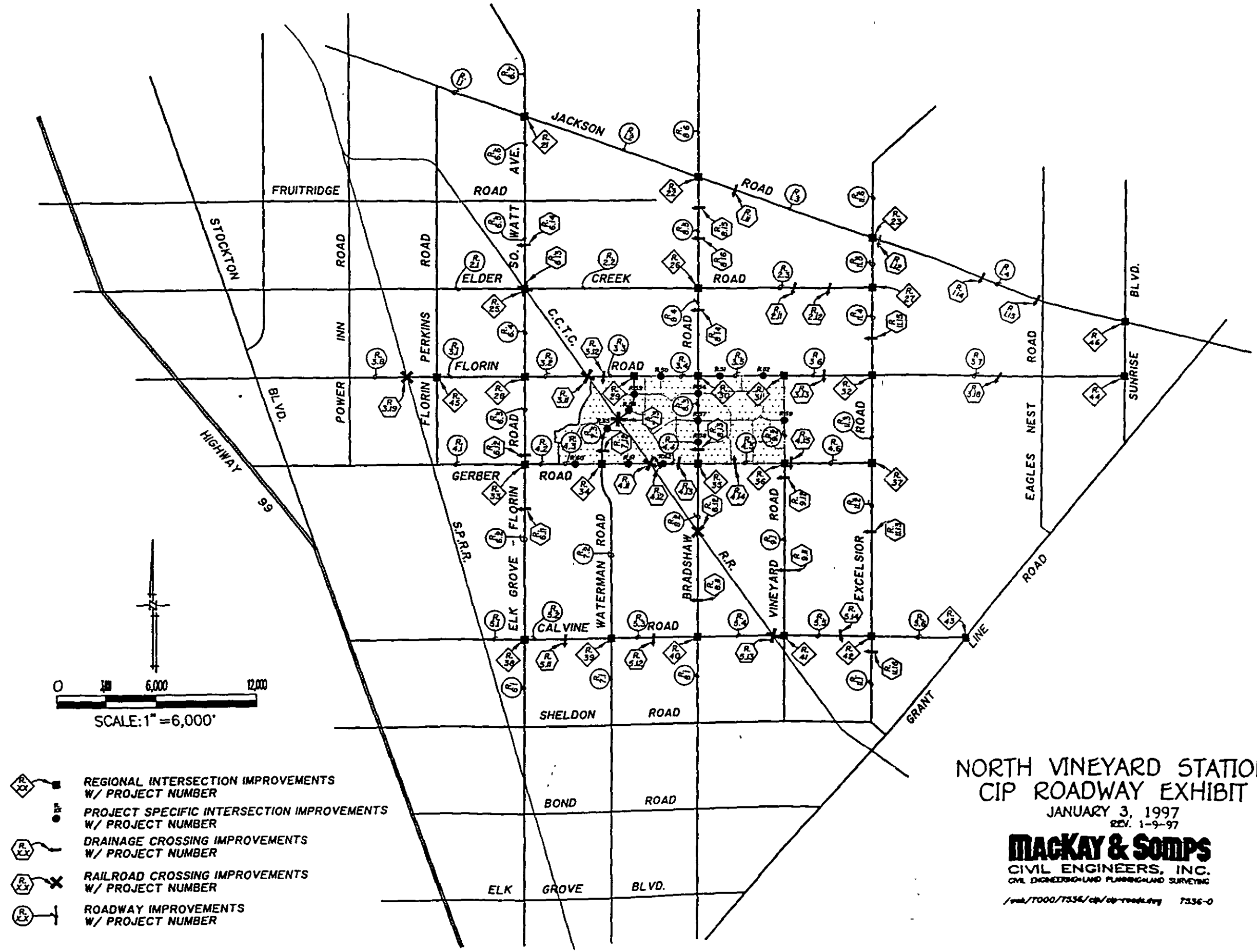
- Cost of providing capacity up to the existing condition 100-year flow is included in the Roadway CIP (based on 1991 conditions as determined by WRD)
- Cost of providing capacity above the existing 100-year flow to the ultimate (watershed build out) condition 100-year flow is included in the Drainage CIP
- The percent of total flow capacity for each category will be the basis for determining the split. For example, assume that the existing flow is 500 cfs and ultiamte flow is 750 cfs at a particular bridge. The cost split would therefore be 67% to the Roadway CIP and 33% to the Drainage CIP.

The arterial roadway drainage crossing projects are listed in the Roadway CIP. If the cost for the project is to be split between the Roadway and Drainage CIP's based on the criteria above, the Roadway CIP shows the project as partially funded by the County Drainage Fee, and the Drainage CIP Summary includes the remainder of the cost.

Estimated costs for arterial roadway drainage crossings were taken from one of the following:

- Morrison Creek Stream Group Drainage Fee Report dated May 23, 1995
- Sacramento County's 1997 Transportation CIP
- Detail sheets developed for and included in this NVSSP Roadway CIP

It is assumed that the NVS Roadway CIP will require updates as development conditions, priorities, and funding opportunities change.



NORTH VINEYARD STATION CIP ROADWAY EXHIBIT

JANUARY 3, 1997
REV. 1-9-97

MACKAY & SOMPS
CIVIL ENGINEERS, INC.
CIVIL ENGINEERING • LAND PLANNING • LAND SURVEYING

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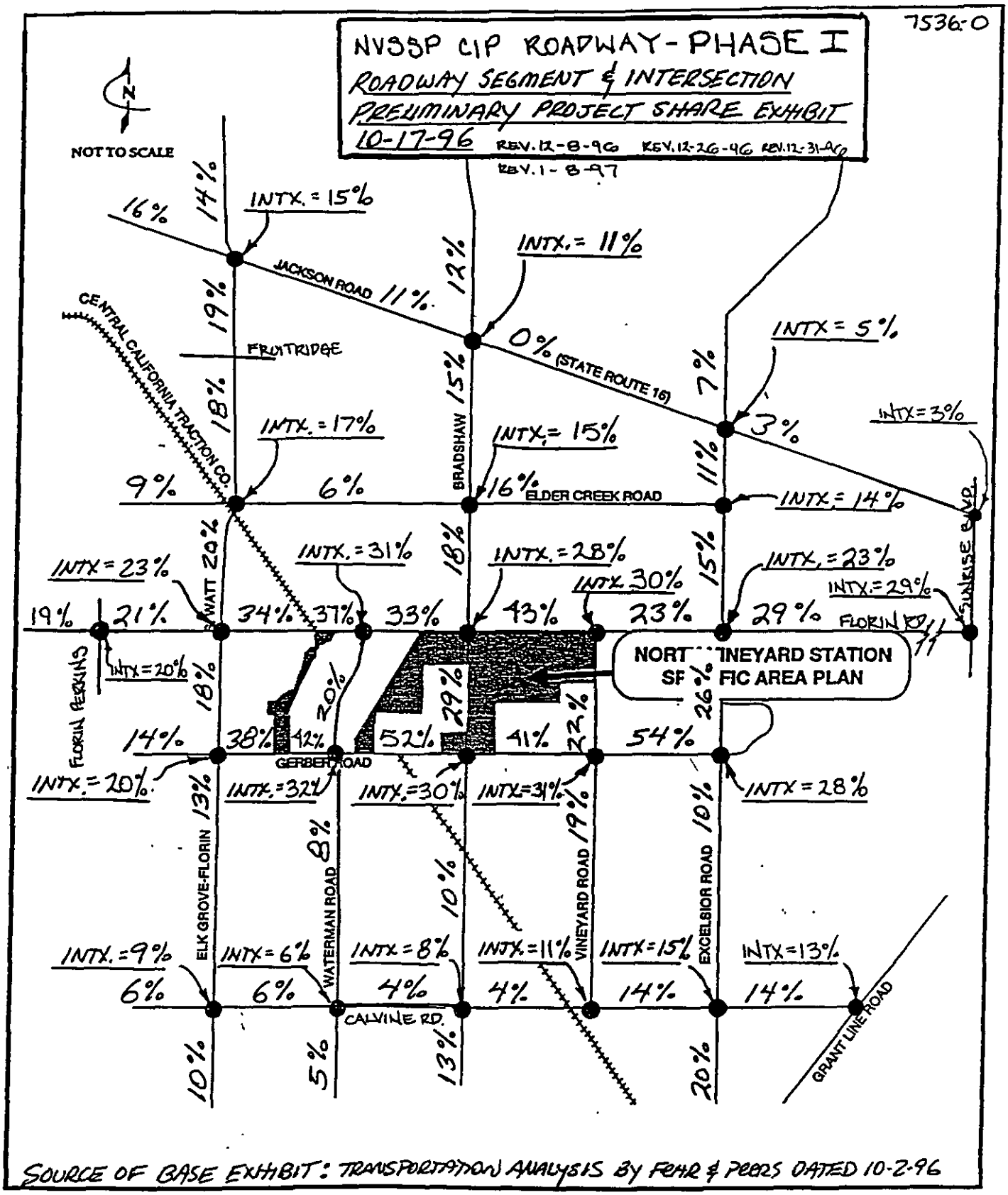

SOURCE OF BASE EXHIBIT: TRANSPORTATION ANALYSIS BY FEHR & PEERS DATED 10-2-96

FIGURE 1	PROJECT LOCATION MAP	Fehr & Peers Associates, Inc. Transportation Consultants

FOR BASIS OF % PROJECT SHARE, SEE PROJECT SHARE CALCULATION SPREADSHEET DATED 1-8-97

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SACRAMENTO CA

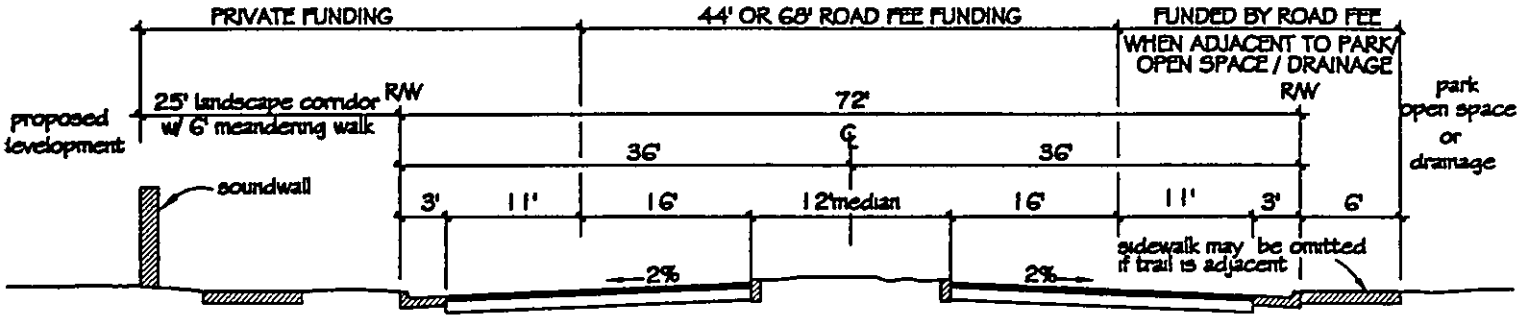
NORTH VINEYARD STATION SPECIFIC PLAN
CIP
ROADWAY
SUMMARY

MITIGATION MEASURE	Project Number	Roadway Segment/ Item	Project Description	On-site or Off-site	Detail Sheet Linked	Quantity	Unit	Unit Price	Total Estimated Cost	% Funded by Other Sources	Other Funding Sources	Reimb. Available	Cummulative Total Estimated Net Cost
TR-3	R3 3	Florin Road- CCTC RR (Project Boundary) to Waterman	6 Lane 108' R/W center sect. w/ med (excludes outside 11' pvmt. & ftg)	On	No	2,350	l f	$370	$870,000	0 00%		$0	$870,000
TR-3	R3.11	Florin Road-CCTC RR Crossing	Reconstruct at-grade RR crossing (108' R/W)	On	No	1	l s	$225,000	$225,000	0 00%		$0	$1,095,000
TR-3	R3.12	Florin Road Crossing at Elder Creek	New Bridge Construction (108' R/W)	On	Yes	1	l s	$858,000	$858,000	0 00%		$0	$1,953,000
	R29	Florin Rd. at Waterman Rd.	6 X 4 Intersection Widening & Signalization, 3-way (incl. 450' intx leg imps)	On	No	1	l s	$589,000	$589,000	0.00%		$0	$2,542,000
	R6.12	Elk Grove-Florin Road- Elder Creek Crossing	New Bridge Construction (108' R/W)	Off	Yes	1	l s	$801,000	$801,000	0 00%		$0	$3,343,000
TR-4	R4.3	Gerber Road- Project Boundary to Waterman	4 Lane 84' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg)	On	No	2,150	l f	$265	$570,000	0 00%	50% Reimb from Vineyard Springs	$285,000	$3,628,000
	R34	Gerber Rd. at Waterman Rd.	4 X 4 Intersection Widening & Signalization, 4-way (incl 450' intx leg imps)	On	No	1	l s	$680,000	$680,000	0 00%	50% Reimb from Vineyard Springs	$340,000	$3,968,000
	R60	Gerber Rd. at Collector	4 X 2 Intersection Signalization, 3-way	On	No	1	Each	$140,000	$140,000	0 00%		$0	$4,108,000
	R4 3.1	Park Frontage Imps.-Gerber Road- (Project Bndry to Waterman)	11' Pavement, 3' C&G, 6' Sidewalk = 20'	On	Yes	100	LF	$91	$9,000	0 00%		$0	$4,117,000
	R4.3.2	Ex. Resid. Ftg. Imps -Gerber Rd.-(Proj Bndry to Waterman, No Side Only)	11' Pavement, 3' C&G, 6' Sidewalk = 20', Soundwall	On	Yes	350	LF	$150	$53,000	0 00%		$0	$4,170,000
	R7.3	Waterman Road- Gerber (Project Bndry) to Florin (Project Bndry)	4 Lane 84' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg)	On	No	5,200	l f	$265	$1,378,000	0 00%		$0	$5,548,000
	R7.12	Waterman Road- Gerber Creek Crossing	2-8' X 6' Box Culverts With Headwalls (84' R/W)	On	Yes	1	l s	$159,000	$159,000	0 00%		$0	$5,707,000
	R7.13	Waterman Road- CCTC RR Crossing	Const. new at-grade RR crossing (84' R/W)	On	No	1	l s	$200,000	$200,000	0 00%		$0	$5,907,000
	R7.3 1	Drain Parkway Frontage Imps.-Waterman Road- (Gerber to Florin)	11' Pavement, 3' C&G, 6' Sidewalk = 20'	On	Yes	500	LF	$91	$46,000	0 00%		$0	$5,953,000
	R7.3.2	Open Space Frontage Imps -Waterman Road- (Gerber to Florin)	11' Pavement, 3' C&G, 6' Sidewalk = 20'	On	Yes	450	LF	$91	$41,000	0 00%		$0	$5,994,000
	R7.3.3	Park Frontage Imps -Waterman Road- (Gerber to Florin)	11' Pavement, 3' C&G, 6' Sidewalk = 20'	On	Yes	2,250	LF	$91	$205,000	0 00%		$0	$6,199,000
	R53	Waterman Rd. at Collector	4 X 2 Intersection Signalization, 4-way	On	No	1	Each	$140,000	$140,000	0 00%		$0	$6,339,000
	R54	Waterman Rd. at Collector	4 X 2 Intersection Signalization, 3-way	On	No	1	Each	$140,000	$140,000	0 00%		$0	$6,479,000
	R55	Waterman Rd. at Collector	4 X 2 Intersection Signalization, 4-way	On	No	1	Each	$140,000	$140,000	0 00%		$0	$6,619,000
TR-2	R8.3	Bradshaw Road- Gerber (Project Bndry) to Florin (Project Bndry)	6 Lane 108' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg.)	On	No	4,400	l f	$370	$1,628,000	100 00%	Meas. A, Dev Fees Fair Share Assess. Dist.	$0	$6,619,000
TR-17	R35	Gerber Rd. at Bradshaw Rd.	4 X 6 Intersection Widening & Signalization, 4-way (incl 450' intx. leg imps)	On	No	1	l s	$785,000	$785,000	60 00%	60% see above,20% Reimb Vineyard Springs	$157,000	$6,776,000
	R8.13	Bradshaw Road- Gerber Creek Crossing	2-8' X 5' Box Culverts With Headwalls (108' R/W)	On	Yes	1	l s	$192,000	$192,000	0 00%		$0	$6,968,000
	R8 3.1	Drain Parkway Frontage Imps.-Bradshaw Road- (Gerber to Florin)	11' Pavement, 3' C&G, 6' Sidewalk = 20'	On	Yes	320	LF	$91	$29,000	0.00%		$0	$6,997,000
	R8.3.2	Ex. Resid. Frontage Imps.-Bradshaw Road-(Gerber to Florin)	11' Pavement, 3' C&G, 6' Sidewalk = 20', Soundwall	On	Yes	1,100	LF	$150	$165,000	0 00%		$0	$7,162,000
	R8.3.3	Ex. Comm. Frontage Imps.-Bradshaw Road-(Gerber to Florin)	11' Pavement, 3' C&G, 6' Sidewalk = 20'	On	Yes	1,100	LF	$91	$100,000	0 00%		$0	$7,262,000
	R56	Bradshaw Rd. at Collector	6 X 2 Intersection Signalization, 4-way	On	No	1	Each	$140,000	$140,000	0.00%		$0	$7,402,000
	R57	Bradshaw Rd. at Collector	6 X 2 Intersection Signalization, 4-way	On	No	1	Each	$140,000	$140,000	0 00%		$0	$7,542,000
	R58	Bradshaw Rd. at Collector	6 X 2 Intersection Signalization, 4-way	On	No	1	Each	$140,000	$140,000	0 00%		$0	$7,682,000
TR-1	R6.6	South Watt- Fruitridge to Jackson	6 Lane 108' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg)	Off	No	4,650	l f	$370	$1,721,000	80 00%	Co. Dev Fees, City?	$0	$8,026,200
TR-12	R21	Jackson Rd. at South Watt Ave	4 X 4 Intersection Widening, 4-way (incl 450' intx. leg imps)	Off	No	1	l.s	$600,000	$600,000	100 00%	Unidentified	$0	$8,026,200
TR-2	R8.5A	Bradshaw Road- Elder Creek to s/o Morrison Creek Crossing	6 Lane 108' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg)	Off	No	4,200	l f	$370	$1,554,000	100 00%	Meas A, Dev Fees	$0	$8,026,200
TR-14	R26	Elder Creek Rd. at Bradshaw Rd.	4 X 6 Intersection Widening, 4-way (incl. 450' intx. leg imps)	Off	No	1	l s	$705,000	$705,000	60 00%	Meas A, Dev Fees	$0	$8,308,200
TR-2	R8 16	Bradshaw Road- Tributary to Elder Creek Crossing	Bridge/Culvert Improvements	Off	No	1	l s	$190,000	$190,000	100 00%	Meas A, Dev Fees	$0	$8,308,200
TR-2	R8 5B	Bradshaw Road- s/o Morrison Creek Crossing to Jackson	6 Lane 108' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg)	Off	No	1,500	l f	$370	$555,000	0 00%		$0	$8,863,200
TR-2	R8.15	Bradshaw Road- Morrison Creek Crossing	Bridge/Culvert Improvements	Off	No	1	l s.	$1,012,000	$1,012,000	100 00%	Road Fund, I.S.T.E.A.	$0	$8,863,200
TR-13, TR-24	R22	Jackson Rd. at Bradshaw	Upgrade signalized 4 X 4 to 6 X 6 intx., 4-way (incl 450' intx. leg imps)	Off	No	1	l s	$350,000	$350,000	100 00%	Unidentified	$0	$8,863,200
TR-1	R6.5	South Watt- Elder Creek to Fruitridge	6 Lane 108' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg)	Off	No	4,850	l f	$370	$1,795,000	80 00%	Co. Dev Fees City?	$0	$9,222,200
TR-1	R6.4	South Watt- Florin to Elder Creek	6 Lane 108' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg)	Off	No	4,400	l f	$370	$1,628,000	80 00%	Co. Dev Fees, City?	$0	$9,547,800
TR-19	R28	Florin Rd. at Elk Grove-Florin Rd	6 X 6 Intersection Widening & Signalization, 4-way (incl 450' intx. leg imps.)	Off	No	1	l s	$1,059,000	$1,059,000	80 00%	Meas. A, Other Sales Tax Co Rd Dev Fees	$0	$9,759,600
TR-18	R25	Elder Creek Rd. at South Watt Ave	4 X 6 Intersection Widening & Signalization, 4-way (incl 450' intx leg imps)	Off	No	1	l s	$785,000	$785,000	80 00%	Co. Roadway Dev Fees	$0	$9,916,600
TR-2	R8.4	Bradshaw Road- Florin (Project Bndry) to Elder Creek	6 Lane 108' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg)	Off	No	4,400	l f	$370	$1,628,000	100 00%	Meas A, Dev Fees	$0	$9,916,600
TR-2	R8.14	Bradshaw Road- Elder Creek Crossing	Bridge/Culvert Improvements	Off	No	1	l s	$259,200	$259,000	0 00%		$0	$10,175,600
TR-3	R3.4	Florin Road- Waterman to Bradshaw	6 Lane 108' R/W; 4 Lanes & center sect. w/ med (excludes outside lanes & ftg)	On	No	3,100	l f	$370	$1,147,000	0 00%		$0	$11,322,600
TR-15	R30	Florin Rd. at Bradshaw Rd	6 X 6 Intersection Widening & Signalization, 4-way (incl 450' intx leg imps)	On	No	1	l s	$1,059,000	$1,059,000	50 00%	Meas A, Dev Fees	$0	$11,852,100
	R50	Florin Rd. at Collector	6 X 2 Intersection Signalization, 4-way	On	No	1	Each	$140,000	$140,000	0 00%		$0	$11,992,100
TR-4	R4.4	Gerber Road- Waterman to Bradshaw	4 Lane 84' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg)	On	No	5,000	l f	$265	$1,325,000	0 00%	50% Reimb from Vineyard Springs	$662,500	$12,654,600
TR-4	R4.11	Gerber Road- CCTC RR Crossing	Reconstruct at-grade RR crossing (84' R/W)	On	No	1	l.s	$200,000	$200,000	0 00%	50% Reimb from Vineyard Springs	$100,000	$12,754,600
TR-4	R4.12	Gerber Road- Gerber Creek Crossing No 4	2-8' X 6' Box Culverts With Headwalls (84' R/W)	On	Yes	1	l s	$202,000	$202,000	0 00%	50% Reimb from Vineyard Springs	$101 000	$12,855,600
TR-4	R4 13	Gerber Road- Gerber Creek Crossing No 3	2-8' X 6' Box Culverts With Headwalls (84' R/W)	On	Yes	1	l s	$185,000	$185,000	0 00%	50% Reimb from Vineyard Springs	$92 500	$12,948,100
	R61	Gerber Rd. at Collector	4 X 2 Intersection Signalization, 3-way	On	No	1	Each	$140,000	$140,000	0 00%		$0	$13,088,100
	R62	Gerber Rd. at Collector	4 X 2 Intersection Signalization, 3-way	On	No	1	Each	$140,000	$140,000	0 00%		$0	$13,228,100
	R4 4 1	Open Space Frontage Imps.-Gerber Road- (Waterman to Bradshaw)	11' Pavement, 3' C&G, 6' Sidewalk = 20'	On	Yes	150	LF	$91	$14 000	0 00%		$0	$13 242 100
	R4 4.2	Drain Parkway Frontage Imps.-Gerber Road- (Waterman to Bradshaw)	11' Pavement, 3' C&G, 6' Sidewalk = 20'	On	Yes	380	LF	$91	$35,000	0 00%		$0	$13 277,100
	R4.4 3	Detention Basin Frontage Imps-Gerber Road- (Waterman to Bradshaw)	11' Pavement, 3' C&G, 6' Sidewalk = 20'	On	Yes	300	LF	$91	$27 000	0 00%		$0	$13 304,100
	R4 4 4	Ex. Resid. Ftg. Imps -Gerber Rd.-(Waterman to Bradshaw, No Side Only)	11' Pavement, 3' C&G, 6' Sidewalk = 20', Soundwall	On	Yes	1,850	LF	$150	$278,000	0 00%		$0	$13,582,100
	R4 3F	Gerber Road-Exist. Resid Front.-(Proj Bndry to Waterman So side only)	Outside Travel Lane, 11' pavement width with 6' shoulder, at Existing Residental	Off	No	1,350	l f	$59	$80,000	0 00%	100% Reimb from Vineyard Spngs/ EGWV	$80 000	$13 582 100
TR-3	R3.2	Florin Road- Elk-Grove Florin to CCTC RR (Project Boundary)	6 Lane 108' R/W center sect. w/ med (excludes outside 11' pvmt. & ftg)	Off	No	3,450	l f	$370	$1,277,000	0 00%		$0	$14 859 100
	R4.12F	Drainage Frontage Imps -Gerber Road Crossing #4 (So Side Only)	11' Pavement, 3' C&G, 6' Sidewalk = 20'	Off	Yes	150	LF	$91	$14,000	0 00%	100% Reimb from Vineyard Spngs/ EGWV	$14 000	$14 859 100
	R4.13F	Drainage Frontage Imps -Gerber Road Crossing #3 (So Side Only)	11' Pavement, 3' C&G, 6' Sidewalk = 20'	Off	Yes	150	LF	$91	$14,000	0 00%	100% Reimb from Vineyard Spngs/ EGWV	$14 000	$14,859,100

NORTH VINEYARD STATION SPECIFIC PLAN
CIP
ROADWAY
SUMMARY

MITIGATION MEASURE	Project Number	Roadway Segment/ Item	Project Description	On-site or Off-site	Detail Sheet Linked	Quantity	Unit	Unit Price	Total Estimated Cost	% Funded by Other Sources	Other Funding Sources	Reimb. Available	Cummulative Total Estimated Net Cost
	R4.4F	Gerber Road-Exist. Resid. Front.-(Waterman to Bradshaw, South side only)	Outside Travel Lane, 11' pavement width with 6' shoulder, at Existing Residential	Off	No	1,100	l f	$59	$65,000	0.00%	100% Reimb. from Vineyard Spngs/ EGWV	$65,000	$14,859,100
TR-1	R6.3	Elk Grove-Florin Road- Gerber to Florin	6 Lane 108' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg.)	Off	No	4,400	l.f	$370	$1,628,000	80.00%	Sac Co Roadway Dev Fee	$0	$15,184,700
TR-4	R4.2	Gerber Road- Elk-Grove Florin to Project Bndry	4 Lane 84' R/W center sect. (excludes outside 11' pvmt. & ftg.)	Off	No	1,650	l.f	$265	$437,000	0 00%	50% Reimb from Vineyard Springs	$218,500	$15,403,200
TR-16	R33	Gerber Rd. at Elk Grove-Florin Rd.	4 X 6 Intersection Widening, 4-way (incl. 450' intx. leg imps)	Off	No	1	l.s	$705,000	$705,000	100 00%	Meas.A, Dev Fees, O.S.T, Fair Share, SLTPP	$0	$15,403,200
	R4.2F	Gerber Road-Exist. Residential Frontages -(E.G.Florin to Proj Bndry)	Outside Travel Lane, 11' pavement width with 6' shoulder, at Existing Residential	Off	Yes	450	l f	$59	$27,000	0.00%	50% Reimb from Vineyard Springs	$13,500	$15,416,700
	R9.2	Vineyard Road- Gerber (Project Bndry) to Florin (Project Bndry)	4 Lane 84' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg.)	On	No	4,400	l f	$265	$1,166,000	0.00%		$0	$16,582,700
	R36	Gerber Rd. at Vineyard Rd.	4 X 4 Intersection Widening & Signalization, 4-way (incl. 450' intx. leg imps.)	On	No	1	l.s	$680,000	$680,000	0.00%	50% Reimb from Vineyard Springs	$340,000	$16,922,700
	R31	Florin Rd. at Vineyard Rd.	6 X 4 Intersection Widening & Signalization, 3-way (incl. 450' intx. leg imps)	On	No	1	l.s	$589,000	$589,000	0.00%		$0	$17,511,700
	R59	Vineyard Rd. at Collector	4 X 2 Intersection Signalization, 3-way	On	No	1	Each	$140,000	$140,000	0.00%		$0	$17,651,700
TR-8	R3.5	Florin Road- Bradshaw to Vineyard (Project Bndry)	6 Lane 108' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg)	On	No	4,400	l f	$370	$1,628,000	0 00%		$0	$19,279,700
	R51	Florin Rd. at Collector	6 X 2 Intersection Signalization, 3-way	On	No	1	Each	$140,000	$140,000	0.00%		$0	$19,419,700
	R52	Florin Rd. at Collector	6 X 2 Intersection Signalization, 3-way	On	No	1	Each	$140,000	$140,000	0.00%		$0	$19,559,700
	R4.5	Gerber Road- Bradshaw to Vineyard (Project Bndry)	4 Lane 84' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg)	On	No	4,400	l f	$265	$1,166,000	0 00%	50% Reimb from Vineyard Springs	$583,000	$20,142,700
	R4 14	Gerber Road- Gerber Creek Crossing No. 2	2-8' X 5' Box Culverts With Headwalls (84' R/W)	On	Yes	1	l.s	$179,000	$179,000	23 00%	23% Drain.Fee,Reimb.50%Reimb.VinyrdSpmgs	$68,915	$20,211,615
TR-5	R1.2	Jackson Road- South Watt to Bradshaw	6 Lane 108' R/W center sect. w/ med. (excludes outside 11' pvmt. & ftg)	Off	No	10,400	l f	$370	$3,848,000	100.00%	Unidentified	$0	$20,211,615
	R4.5.1	Drain Parkway Frontage Imps.-Gerber Road- (Bradshaw to Vineyard)	11' Pavement, 3' C&G, 6' Sidewalk = 20'	On	Yes	160	L.F.	$91	$15,000	0 00%		$0	$20,226,615
	R4.5.2	Detention Basin Frontage Imps-Gerber Road- (Bradshaw to Vineyard)	11' Pavement, 3' C&G, 6' Sidewalk = 20'	On	Yes	220	L.F.	$91	$20,000	0 00%		$0	$20,246,615
	R3.3 1	Drain Parkway Frontage Imps-Florin Road- (CCTC RR to Waterman)	11' Pavement, 3' C&G, 6' Sidewalk = 20'	On	Yes	370	L.F.	$91	$34,000	0 00%		$0	$20,280,615
	R3 3.2	Detention Basin Frontage Imps-Florin Road- (CCTC RR to Waterman)	11' Pavement, 3' C&G, 6' Sidewalk = 20'	On	Yes	865	L.F.	$91	$79,000	0.00%		$0	$20,359,615
TR-25	R23	Jackson Rd. at Excelsior	6 X 4 Intersection Widening, no. & so bound only (incl. 450' intx leg imps)	Off	No	1	l s	$353,000	$353,000	100 00%	Unidentified	$0	$20,359,615
TR-23	R4.6	Gerber Road- Vineyard (Project Boundary) to Excelsior	Widen shoulders to provide minimum pavement width	Off	Yes	4,850	l.f	$100	$485,000	0 00%	50% Reimb from Vineyard Springs	$242,500	$20,602,115
	R4.15	Gerber Road- Gerber Creek Crossing No 1	Bridge/Culvert Improvements	Off	No	1	l.s	$461,000	$461,000	0 00%	50% Reimb.Vineyard Spmgs	$230,500	$20,832,615
TR-7, TR-22	R11.3	Excelsior Road- Gerber to Florin	Widen shoulders to provide minimum pavement width	Off	Yes	4,850	l f.	$100	$485,000	0 00%		$0	$21,317,615
TR-8	R3.6	Florin Road- Vineyard (project Boundary) to Excelsior	Widen shoulders to provide minimum pavement width	Off	Yes	4,400	l f	$100	$440,000	0.00%		$0	$21,757,615
	R3.13	Florin Road- Tributary No. 1 to Gerber Creek Crossing	Bridge/Culvert Improvements	Off	No	1	l.s	$86,000	$86,000	0.00%		$0	$21,843,615
TR-10	R9 1	Vineyard Road- Calvine to Gerber (Project Boundary)	Widen shoulders to provide minimum pavement width	Off	No	9,700	L.f.	$100	$970,000	0 00%	100% Reimb. from Vineyard Spngs/ EGWV	$970,000	$21,843,615
TR-6, TR-21	R2.3	Elder Creek Road- Bradshaw to Excelsior	Widen shoulders to provide minimum pavement width	Off	No	10,150	l f	$100	$1,015,000	0 00%		$0	$22,858,615
TR-7, TR-22	R11.4	Excelsior Road- Florin to Elder Creek	Widen shoulders to provide minimum pavement width	Off	Yes	4,850	l f.	$100	$485,000	0 00%		$0	$23,343,615
	R11.15	Excelsior Road- Tributary to Elder Creek Crossing	Bridge/Culvert Improvements	Off	No	1	l.s	$86,000	$86,000	0.00%		$0	$23,429,615
TR-11	R5.5	Calvine Road- Vineyard to Excelsior	Widen shoulders to provide minimum pavement width	Off	No	4,400	l.f	$100	$440,000	0 00%	100% Reimb. from Vineyard Spngs/ EGWV	$440,000	$23,429,615
TR-7, TR-22	R11.5	Excelsior Road- Elder Creek to Jackson	Widen shoulders to provide minimum pavement width	Off	Yes	2,450	l f	$100	$245,000	0 00%		$0	$23,674,615
TR-7, TR-22	R11.2	Excelsior Road- Calvine to Gerber	Widen shoulders to provide minimum pavement width	Off	No	10,150	l f	$100	$1,015,000	0 00%	100% Reimb. from Vineyard Spngs/ EGWV	$1,015,000	$23,674,615
TR-6, TR-21	R2.2	Elder Creek Road- South Watt to Bradshaw	Widen shoulders to provide minimum pavement width	Off	No	9,700	l f	$100	$970,000	0.00%		$0	$24,644,615
TR-11	R5.3	Calvine Road- 1300' East of Waterman to Bradshaw	Widen shoulders to provide minimum pavement width	Off	No	3,100	l f	$100	$310,000	0 00%	100% Reimb. from Vineyard Spngs/ EGWV	$310,000	$24,644,615
TR-11	R5.4	Calvine Road- Bradshaw to Vineyard	Widen shoulders to provide minimum pavement width	Off	No	4,400	l f.	$100	$440,000	0 00%	100% Reimb. from Vineyard Spngs/ EGWV	$440,000	$24,644,615
	R44A	Florin Rd. at Sunrise Blvd.	Interim Intersection Improvements, 3-way(inc 450' intx. leg imp.s)	Off	No	1	l.s	$307,000	$307,000	75.00%	Sac.Aggregates/Sunrise/Douglas C.P./S	$0	$24,721,615
	R44B	Florin Rd. at Sunrise Blvd.	Ultimate Intersection Improvements, 3-way(incl 450' intx. Leg imp.s)	Off	No	1	l.s	$668,000	$668,000	66.70%	Sunrise/Douglas Com Plan/Spec Plan	$0	$24,943,615
	R12	Offsite Arterial Frontage Improvements	Class "A" Frontage Improvements	Off	No	1	Lump Sum	$624,000	$624,000	0 00%		$0	$25,345,615
	R101	Right of Way Acquisition for Onsite Arterials	ROW land acquisition	On	Yes	1	Lump Sum	$1,558,000	$1,558,000	0 00%		$0	$26,903,615
	R100	Right of Way Acquisition for Offsite Arterial	ROW land acquisition	Off	Yes	1	Lump Sum	$1,101,000	$1,101,000	0 00%		$0	$28,004,615
	Preparation of P.F.F.P. and Technical Studies				No	1	Lump Sum	$0	$0	0 00%		$0	$28,004,615
	Grand Total Roadway								$55,911,000			$6,782,915	$28,005,000

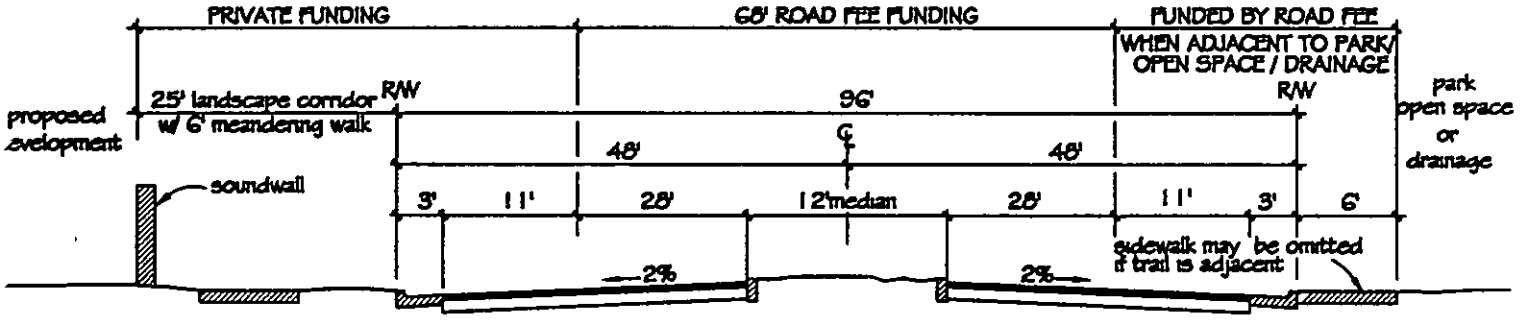
Note Roadway segment lengths exclude 450' intersection leg widening included in CIP Regional identified intersections (except where intersection projects have not made the cut off (above the thick line)



ONSITE GERBER ROAD, WATERMAN ROAD & VINEYARD ROAD

72' R. O. W.

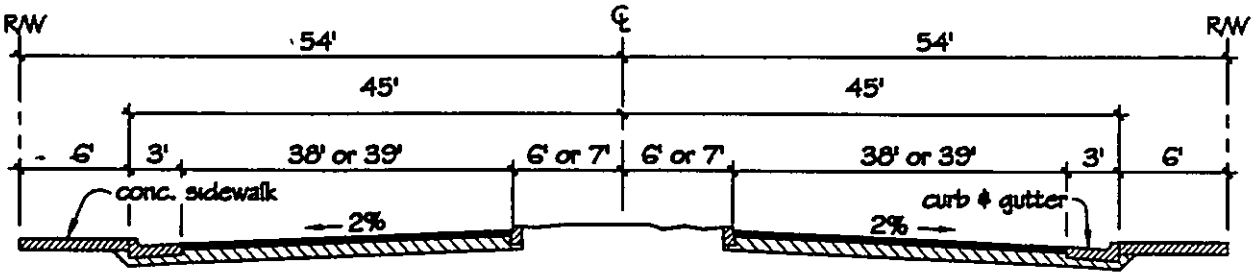
not to scale



ONSITE FLORIN ROAD, BRADSHAW ROAD

96' R. O. W.

not to scale



OFFSITE 108' STREET

(THOROUGHFARE)

not to scale

APPENDIX D - 3

ELK GROVE / WEST VINEYARD PUBLIC FACILITIES FINANCING PLAN

UNIT CONSTRUCTION COSTS FOR ROAD WIDENING PROJECTS TYPICAL FOUR LANE ROAD (84 FT. RIGHT - OF - WAY) WITH LANDSCAPED MEDIAN

NO.	ITEM DESCRIPTION	ESTIMATED QUANTITY	UNIT PRICE	AMOUNT
1	CLEARING AND GRUBBING	24 SQ. FT.	$0.10	$2.40
2	PAVEMENT REMOVAL	30 SQ. FT.	0.50	15.00
3	ROADWAY EXCAVATION (0.79 PER SQ. FT.)	2.3 CU. YDS.	15.00	34.50
4	AGGREGATE BASE (1.50 PER SQ. FT.)	3.2 TON	15.00	48.00
5	ASPHALT CONCRETE (0.75 PER SQ. FT.)	0.80 TON	30.00	24.00
6	SIGNING AND STRIPING	1 L.F.	4.00	4.00
7	STORM DRAINAGE	1 L.F.	20.00	20.00
8	TRAFFIC SIGNAL INTERCONNECT	1 L.F.	7.00	7.00
9	TYPE 4 MEDIAN CURB	2 L.F.	4.50	9.00
10	MEDIAN LANDSCAPING	12 S. F.	3.25	39.00
	SUBTOTAL			$202.90
	ENGINEERING AND CONTINGENCY AT 30 %			$60.87
	TOTAL			$ 265 PER L.F.

ASSUMPTIONS :

1 STRUCTURAL SECTION OF 4" AC AND 16" AB; AB = 2.0 TONS / CU. YD., A C = 2.1 TONS / CU. YD.

2 COMPLETE REMOVAL OF EXISTING 30 FT. WIDE RURAL ROAD PAVEMENT (2" TO 3" AC LAYER)

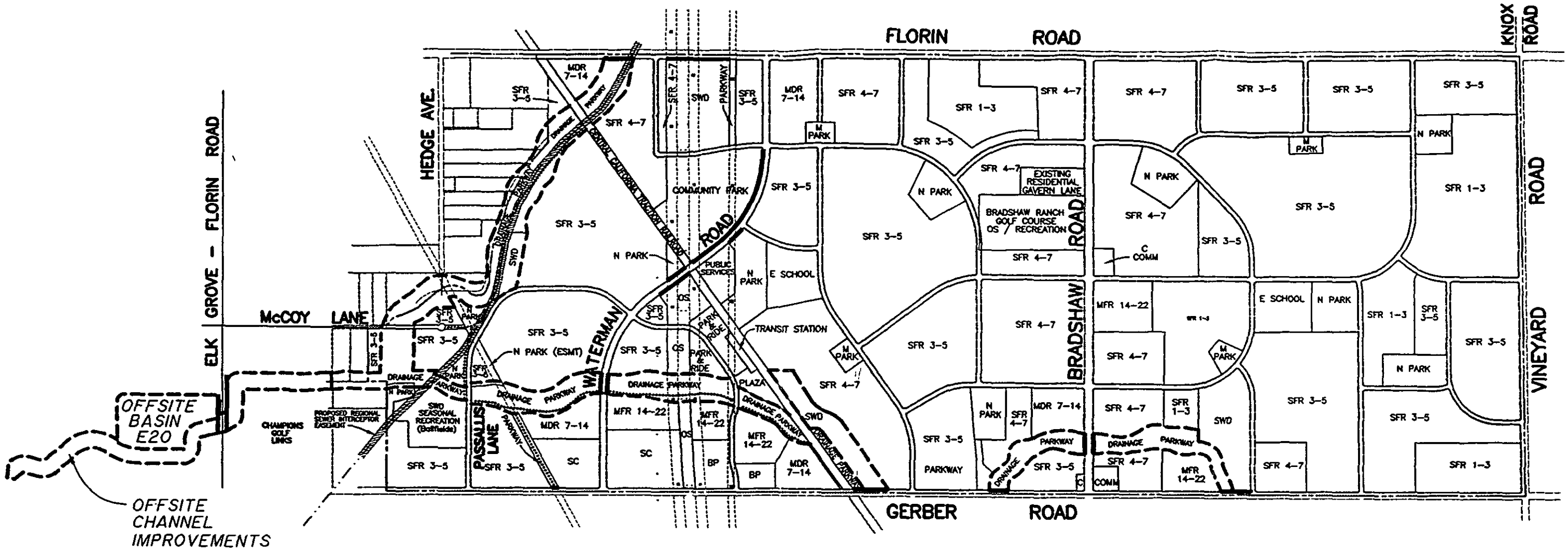
3 UNIT PRICES BASED ON RECENT COUNTY PROJECT BID SUMMARIES

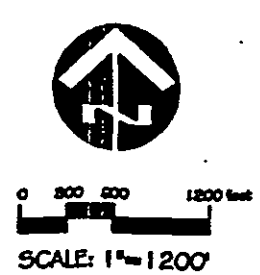
4 OUTSIDE 11 FT. OF PAVEMENT AND IMPROVEMENTS ARE ADJACENT OWNER'S RESPONSIBILITY

5 CENTER LANDSCAPED MEDIAN AND CURB

BREAKDOWN OF 30 % ENGINEERING AND CONTINGENCY :

9 % INSPECTION
1 % MATERIALS TESTING
5 % DESIGN AND CONSTRUCTION SURVEY
10 % ENGINEERING
5 % COST CONTINGENCY





LEGEND

PARK/OPEN SPACE/DRAINAGE FACILITY/ PARKWAY FRONTAGE IMPROVEMENTS FUNDED BY ROADWAY FEE

NOTE: SEE LAND USE PLAN FOR LAND USE LEGEND

North Vineyard Station Capital Improvement Program

PARK/ OPEN SPACE/ DRAINAGE FACILITY/ PARKWAY FRONTAGE AT ARTELIAL ROADWAYS

Sacramento, California January,1998

MACKAY & SOMPS CIVIL ENGINEERS, INC.
CIVIL ENGINEERS/LAND PLANNERS/LAND SURVEYING

/7000/7536/alp/alp-roadway.dwg 7536-0

APPENDIX D - 4

ELK GROVE / WEST VINEYARD PUBLIC FACILITIES FINANCING PLAN

UNIT CONSTRUCTION COSTS FOR ROAD WIDENING PROJECTS

TYPICAL SIX LANE DIVIDED ROAD (108 FT. RIGHT - OF - WAY)

NO.	ITEM DESCRIPTION	ESTIMATED QUANTITY	UNIT PRICE	AMOUNT
1	CLEARING AND GRUBBING	48 SQ. FT.	$0.10	$4.80
2	PAVEMENT REMOVAL	30 SQ. FT.	0.50	15.00
3	ROADWAY EXCAVATION (0.79 PER SQ. FT.)	3.6 CU. YDS.	15.00	54.00
4	AGGREGATE BASE (1.50 PER SQ. FT.)	5.5 TON	15.00	82.50
5	ASPHALT CONCRETE (0.75 PER SQ. FT.)	1.5 TON	30.00	45.00
6	SIGNING AND STRIPING	1 L.F.	5.00	5.00
7	STORM DRAINAGE	1 L.F.	20.00	20.00
8	TRAFFIC SIGNAL INTERCONNECT	1 L.F.	7.00	7.00
9	TYPE 4 MEDIAN CURB	2 L.F.	4.50	9.00
10	MEDIAN LANDSCAPING	12 S. F.	3.25	39.00
	SUBTOTAL			$281.30
	ENGINEERING AND CONTINGENCY AT 30 %			$84.39
	TOTAL			$ 370 PER L.F.

ASSUMPTIONS :

1 STRUCTURAL SECTION OF 4" AC AND 16 " AB; AB = 2.0 TONS / CU. YD.; A C = 2.1 TONS / CU. YD.

2 COMPLETE REMOVAL OF EXISTING 30 FT. WIDE RURAL ROAD PAVEMENT (2 " TO 3 " AC LAYER)

3 UNIT PRICES BASED ON RECENT COUNTY PROJECT BID SUMMARIES

4 OUTSIDE 11 FT. OF PAVEMENT AND IMPROVEMENTS ARE ADJACENT OWNER'S RESPONSIBILITY

5 CENTER LANDSCAPED MEDIAN AND CURB

BREAKDOWN OF 30 % ENGINEERING AND CONTINGENCY :

9 % INSPECTION
1 % MATERIALS TESTING
5 % DESIGN AND CONSTRUCTION SURVEY
10 % ENGINEERING
5 % COST CONTINGENCY

NORTH VINEYARD STATION SPECIFIC PLAN

PRELIMINARY
PER FOOT COST ESTIMATE

ARTERIAL OUTSIDE TRAVEL LN. & FRONTAGE IMPROV.'S (w/o soundwall)
Adjacent to Public Uses - One Side Only

Project Description:
11' Pavement, 3' C&G, 6' Sidewalk = 20'

	ITEM	QUANTITY	UNIT	UNIT PRICE	PER FT COST
1.	Clearing & Grubbing	20	S.F.	$0.10	$2.00
2.	Excavation- Major Road (20 sf 1.2' deep)	0.89	C.Y.	$6.00	$5.34
3.	Asphaltic Concrete, 4"	11	S.F.	$0.90	$9.90
4.	Aggregate Base,16"	11	S.F.	$1.50	$16.50
5.	Conc.-Curb and Gutter, Type 2	1	L.F.	$10.00	$10.00
6.	Conc.- 4" Sidewalk W/ 6" AB	6	S.F.	$2.30	$13.80
7.	Local Drainage- Lead Pipe & D.I.-(1 Side)	1	L.F.	$2.50	$2.50
8.	Street Lights-Major Rd., Type A 180' Spacing (1 Side)	1	L.F.	$10.00	$10.00
			Subtotal		**$70.04**
	30% (surveys, design, inspection and contingency)				$21.01
			Grand Total per Foot		**$91.05**
			Use		**$91.00**

Notes:
1. Joint Trench costs are excluded.
2. Right-of-way costs are excluded.
3. Landscaping and soundwall are excluded.
4. Assumes a 4" a.c. over 16" a.b. roadway section.

NORTH VINEYARD STATION SPECIFIC PLAN

PRELIMINARY
PER FOOT COST ESTIMATE

ARTERIAL FRONTAGE IMPROVEMENTS (with soundwall)
Adjacent to Existing Residential - One Side Only

(3' C&G, 6' Sidewalk = 9', Soundwall)

	ITEM	QUANTITY	UNIT	UNIT PRICE	PER FT COST
1.	Clearing & Grubbing	9	S.F.	$0.10	$0.90
2.	Excavation- Major Road (9 sf 1.2' deep)	0.40	C.Y.	$6.00	$2.40
3.	Conc.-Curb and Gutter, Type 2	1	L.F.	$10.00	$10.00
4.	Conc.- 4" Sidewalk W/ 6" AB	6	S.F.	$2.30	$13.80
5.	Local Drainage- Lead Pipe & D.I.-(1 Side) (Inlet and lead pipe)	1	L.F.	$2.50	$2.50
7.	Street Lights-Major Rd., Type A 180' Spacing (1 Side)	1	L.F.	$10.00	$10.00
6.	Soundwall, 6 foot	1	L.F.	$45.00	$45.00
			Subtotal		**$84.60**
	30% (surveys, design, inspection and contingency)				$25.38
			Grand Total per Foot		**$109.98**
			Use		**$110.00**

Notes:
1. Joint Trench costs are excluded.
2. Right-of-way costs are excluded.
3. Pavement and landscaping are excluded.

NORTH VINEYARD STATION SPECIFIC PLAN

PRELIMINARY
PER FOOT COST ESTIMATE

WIDEN SHOULDERS AT EXISTING ROADWAY

Project Description:
6' Pavement each side

	ITEM	QUANTITY	UNIT	UNIT PRICE	PER FT COST
1.	Clearing & Grubbing	12	S.F.	$0.10	$1.20
2.	Excavation- Major Road (12 sf 1.2' deep and reconstruct roadside ditches)	1.06	C.Y.	$6.00	$6.36
3.	Asphaltic Concrete, 4"	12	S.F.	$0.90	$10.80
4.	Aggregate Base,16"	12	S.F.	$1.50	$18.00
5.	Sawcut Existing Pavement	4	L.F.	$10.00	$40.00
			Subtotal		**$76.36**
	30% (surveys, design, inspection and contingency)				$22.91
			Grand Total per Fc		**$99.27**
			Use		**$100.00**

Notes:
1. Joint Trench costs are excluded.
2. Right-of-way costs are excluded.
3. Landscaping and soundwall are excluded.
4. Assumes a 4" a.c. over 16" a.b. roadway section.

APPENDIX D - 6

ELK GROVE / WEST VINEYARD PUBLIC FACILITIES FINANCING PLAN

UNIT CONSTRUCTION COSTS FOR TYPICAL 4 X 4 INTERSECTION

NO.	ITEM DESCRIPTION	ESTIMATED QUANTITY	UNIT PRICE	AMOUNT
1	CLEARING AND GRUBBING	71,124 SQ. FT.	$0.10	$7,112.40
2	PAVEMENT REMOVAL	54,000 SQ. FT.	0.50	27,000.00
3	ROADWAY EXCAVATION (0.79 PER SQ. FT.)	5,621 CU. YDS.	15.00	84,315.00
4	AGGREGATE BASE (1.50 PER SQ. FT.)	10,580 TON	15.00	158,700.00
5	ASPHALT CONCRETE (0.75 PER SQ. FT.)	2,777 TON	30.00	83,310.00
6	SIGNING AND STRIPING	1800 L.F.	5.00	9,000.00
7	STORM DRAINAGE	3,160 L.F.	20.00	63,200.00
8	TRAFFIC SIGNAL	LUMP SUM	80,000	80,000.00
9	TYPE 2 CURB AND GUTTER	205 L. F.	15.00	3,075.00
10	6 FT. X 3 - 5/8 IN. PCC SIDEWALK	1,170 S. F.	4.50	5,265.00
	SUBTOTAL			$520,977.40
	ENGINEERING AND CONTINGENCY AT 30 %			$156,293.22
	TOTAL			$ 680,000

WITHOUT SIGNAL → USE $600,000

ASSUMPTIONS :

1 CURB, GUTTER, AND SIDEWALK AT ALL CORNER ROUNDINGS

2 INTERSECTION AREA = 450 FT. FOR ALL LEGS

3 STRUCTURAL SECTION OF 4" AC AND 16 " AB; AB = 2.0 TONS / CU. YD., A C = 2.1 TONS / CU. YD.

4 COMPLETE REMOVAL OF EXISTING 30 FT. WIDE RURAL ROAD PAVEMENT (2 " TO 3 " AC LAYER)

5 UNIT PRICES BASED ON RECENT COUNTY PROJECT BID SUMMARIES

6 OUTSIDE 11 FT. OF PAVEMENT AND C,G, & S IMPROVEMENTS ARE ADJACENT OWNER'S RESPONSIBIL (100 FT. TAPERS FROM CURB RETURN IMPROVEMENTS PROVIDED)

BREAKDOWN OF 30 % ENGINEERING AND CONTINGENCY :

9 % INSPECTION
1 % MATERIALS TESTING
5 % DESIGN AND CONSTRUCTION SURVEY
10 % ENGINEERING
5 % COST CONTINGENCY

APPENDIX D - 7

ELK GROVE / WEST VINEYARD PUBLIC FACILITIES FINANCING PLAN

UNIT CONSTRUCTION COSTS FOR TYPICAL 4 X 6 INTERSECTION

NO.	ITEM DESCRIPTION	ESTIMATED QUANTITY	UNIT PRICE	AMOUNT
1	CLEARING AND GRUBBING	92,940 SQ. FT.	$0.10	$9,294.00
2	PAVEMENT REMOVAL	54,000 SQ. FT.	0.50	27,000.00
3	ROADWAY EXCAVATION	6,765 CU. YDS.	15.00	101,475.00
4	AGGREGATE BASE (0.79 PER SQ. FT.)	12,250 TON	15.00	183,750.00
5	ASPHALT CONCRETE (1.50 PER SQ. FT.)	3,125 TON	30.00	96,450.00
6	SIGNING AND STRIPING (0.75 PER SQ. FT.)	1,800 L.F.	6.00	10,800.00
7	STORM DRAINAGE	3,130 L.F.	20.00	62,600.00
8	TRAFFIC SIGNAL	LUMP SUM	80,000	80,000.00
9	TYPE 4 MEDIAN CURB	1,620 L.F.	4.50	7,290.00
10	MEDIAN LANDSCAPING	4,920 SQ. FT.	3.25	15,990.00
11	TYPE 2 CURB AND GUTTER	205 L. F.	15.00	3,075.00
12	6 FT. X 3 - 5/8 IN. PCC SIDEWALK	1,170 S. F.	4.50	5,265.00
	SUBTOTAL			$602,989.00
	ENGINEERING AND CONTINGENCY AT 30 %			$180,896.70
	TOTAL			$785,000

WITHOUT SIGNAL ⇒ USE $705,000
3-WAY INTX. WITH SIGNAL ⇒ USE $589,000

ASSUMPTIONS :

1 CURB, GUTTER, AND SIDEWALK AT ALL CORNER ROUNDINGS

2 INTERSECTION AREA = 450 FT. FOR ALL LEGS

3 LANDSCAPED MEDIAN AND CURB FOR 6 - LANE LEGS

4 STRUCTURAL SECTION OF 4" AC AND 16 " AB; AB = 2.0 TONS / CU. YD., A C = 2.1 TONS / CU. YD.

5 COMPLETE REMOVAL OF EXISTING 30 FT. WIDE RURAL ROAD PAVEMENT (2 " TO 3 " AC LAYER)

6 *UNIT PRICES BASED ON RECENT COUNTY PROJECT BID SUMMARIES*

7 OUTSIDE 11 FT. OF PAVEMENT AND C,G, & S IMPROVEMENTS ARE ADJACENT OWNER'S RESPONSIBILI (100 FT. TAPERS FROM CURB RETURN IMPROVEMENTS PROVIDED)

BREAKDOWN OF 30 % ENGINEERING AND CONTINGENCY :

9 % INSPECTION
1 % MATERIALS TESTING
5 % DESIGN AND CONSTRUCTION SURVEY
10 % ENGINEERING
5 % COST CONTINGENCY

NORTH VINEYARD STATION SPECIFIC PLAN CIP
ROADWAY DETAIL SHEET

TRANSPORTATION DIVISION
6 X 6 INTERSECTION

Item No.	Item Description	Estimated Quantity	Unit Price	Amount (in figures)
1	Clearing and grubbing	143,534 S.F.	$.10	$14,353.40
2	Excavation	11,090 C.Y.	15.00	166,350.00
3	Pavement Removal	54,000 S.F.	.50	27,000.00
4	Aggregate Base	16,760. TON	15.00	251,400.00
5	Asphalt concrete	4,400. TON	30.00	132,000.00
6	Type 2 Curb & Gutter	205 L.F.	15.00	3,075.00
7	6-foot x 3 5/8" PCC Sidewalk	1,170 S.F.	4.50	5,265.00
8	Type 4 Median Curb	3,240 L.F.	4.50	14,580.00
9	Median Landscaping	9,840 S.F.	3.25	31,980.00
10	Signing and Striping	1,800 L.F.	6.00	10,800.00
11	Storm Drainage	3,100 L.F.	25.00	77,500.00
			Sub total	$734,303.40
	Engineering & Contingency at 30%			220,291.00
				$954,594.40

USE $955,000
6 x 6 INTERSECTION

+ $104,000 for traffic signal
= $1,059,000

ASSUMPTIONS

- 4-inch AC/ 16-inch AB lip to lip 450 feet from intersection for all legs (450 feet covers butturnouts, and tapers per SD H-25).
- Curb, gutter, and sidewalk at all corner roundings
- Landscaped median and curb for 6-lane legs

DALP:sb 11/92

dalp332

ROADWAY COST DETAIL

PROJECT NO. : R3.12
PROJECT NAME: FLORIN RD. CROSSING @ ELDER CREEK

PROJECT DESCRIPTION: NEW BRIDGE CONSTRUCTION (84' R/W) @ FLORIN RD. & ELDER CREEK

PROJECT COSTS:

Item	Quantity	Unit	Unit Cost	Total Cost
Constr. New Bridge	8,250	s.f.	$80.00	$660,000
		Subtotal		**$660,000**
30% (surveys, design, inspection and contingency)				$198,000
R/W Aquisition	_____	ac. _____		$0
		Total Cost		**$858,000**

FUNDING SOURCES:

NOTES:

1. Width = 108' + 2' = 110'
2. Span = 75'
3. s.f. to construct = 8250 s.f.
4. Cost includes demolition, erosion control, etc.
5. Channel excav. included in Elder Creek reach 1A channel imps.
6. Rev. eng. & contingency from 10% & 10% to 30% total consistent with Roadway Items. 2-5-97

ROADWAY COST DETAIL

PROJECT NO. : R4.13
PROJECT NAME: GERBER RD. CROSSING NO. 3 @ GERBER CREEK (E. OF # 4)

PROJECT DESCRIPTION: (2) 8'x6' BOX CULVERT CONSTR. w/ HEADWALLS (84' R/W)
GERBER CREEK @ GERBER RD. CROSSING NO.3
(1,100' WEST OF BRADSHAW RD.)

PROJECT COSTS:

Item	Quantity	Unit	Unit Cost	Total Cost
(2) 8' x 6' Conc. Box Culverts	88	l.f.	$800.00	$70,400
Headwall & Wingwalls	2	each	$25,000.00	$50,000
Erosion Protection	1	Lump Sum	$2,000.00	$2,000
Demolition of Exist. Bridge	1	Lump Sum	$20,000.00	$20,000
		Subtotal		**$142,400**
30% (surveys, design, inspection and contingency)				$42,720
R/W Aquisition	_____	ac. _____		$0
		Total Cost		**$185,000**

FUNDING SOURCES:

NOTES:
1. Channel excav. incl. in Gerber Creek reach 2B channel imps.
2. Rev. eng. & contingency from 10% & 10% to 30% total consistent with Roadway Items. 2-5-97

ROADWAY COST DETAIL

PROJECT NO. : R6.12
PROJECT NAME: ELK GROVE-FLORIN RD. CROSSING @ ELDER CREEK

PROJECT DESCRIPTION: NEW BRIDGE CONSTRUCTION (108' R/W)
@ ELK GROVE-FLORIN RD. & ELDER CREEK

PROJECT COSTS:

Item	Quantity	Unit	Unit Cost	Total Cost
Constr. New Bridge	7,700	s.f.	$80.00	$616,000
	Subtotal			**$616,000**
30% (surveys, design, inspection and contingency)				$184,800
R/W Aquisition	_____	ac. _____		$0
	Total Cost			**$801,000**

FUNDING SOURCES:

NOTES:

1. Width = 108' + 2' = 110'
2. Span = 70'
3. s.f. to construct = 7,700 s.f.
4. Cost includes demolition, erosion control, etc.
5. Channel excav. incl. in Elder Creek reach 3 channel imps.
6. Rev. eng. & contingency from 10% & 10% to 30% total consistent with Roadway Items. 2-5-97

ROADWAY COST DETAIL

PROJECT NO. : R8.13
PROJECT NAME: BRADSHAW RD. CROSSING @ GERBER CREEK

PROJECT DESCRIPTION: (2) 8'x5' BOX CULVERT CONSTR. w/ HEADWALLS (108' R/W)
GERBER CREEK @ BRADSHAW RD.

PROJECT COSTS:

Item	Quantity	Unit	Unit Cost	Total Cost
(2) 8' x 5' Conc. Box Culverts	112	l.f.	$750.00	$84,000
Headwall & Wingwalls	2	each	$25,000.00	$50,000
Erosion Protection	1	Lump Sum	$2,000.00	$2,000
Remove Exist. Box Culverts	1	Lump Sum	$10,000.00	$10,000
		Subtotal		**$146,000**
30% (surveys, design, inspection and contingency)				$43,800
R/W Aquisition	_____	ac. _____		$0
		Total Cost		**$190,000**

FUNDING SOURCES:

NOTES:

1. Channel excav. incl. in Gerber Creek reach 2C channel improvements.
2. Rev. eng. & contingency from 10% & 10% to 30% total *consistent with Roadway Items. 2-5-97*

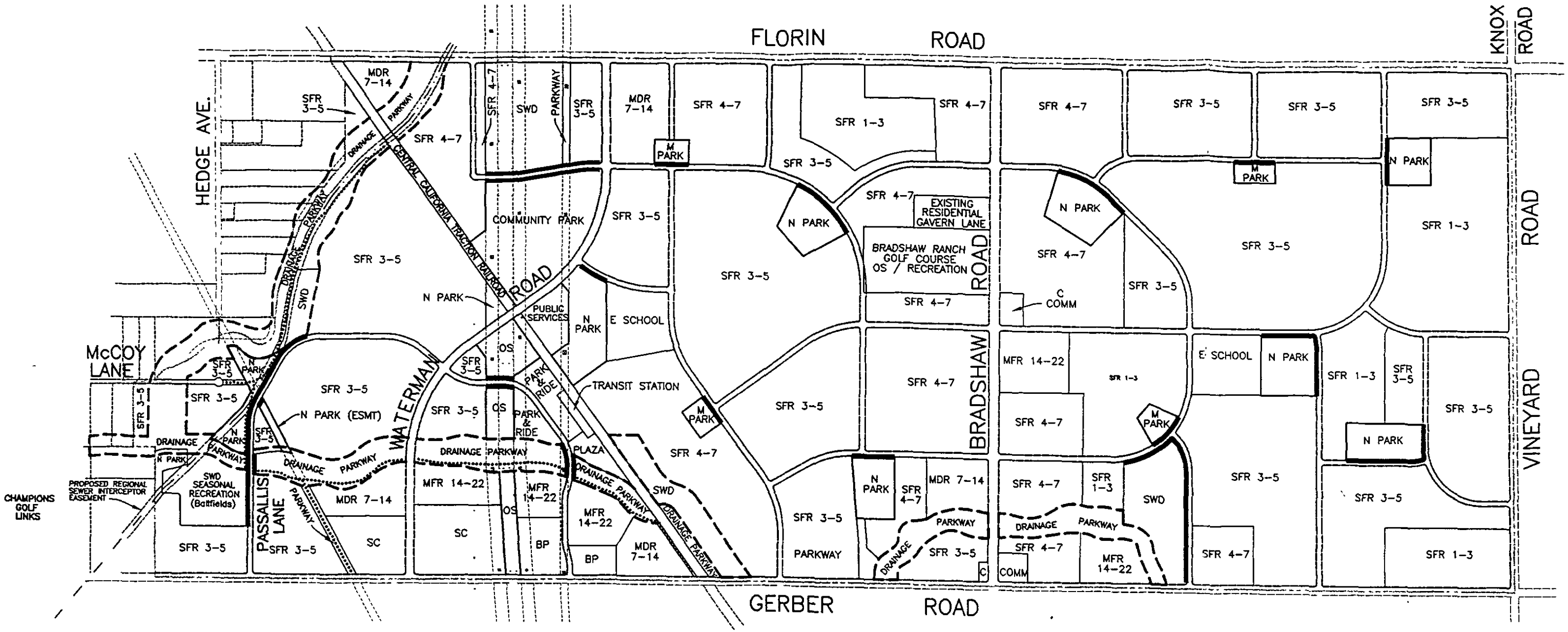
III. INTERNAL ROADWAY

The Internal Roadway Capital Improvement Program includes onsite roadway frontage improvements at parks, open space, drainage corridor and drainage facilities within the Specific Plan area. The internal roadway facilities and their estimated costs are identified in the NVSSP CIP Internal Roadways Summary. The NVSSP CIP Park/O.S./Drainage Facility/Parkway Frontage at Internal Roadways Exhibit shows the location of the facilities. The Internal Roadway CIP is based on the Preferred Plan, revised July 1996.

NORTH VINEYARD STATION SPECIFIC PLAN CIP
INTERNAL ROADWAYS
SUMMARY

NORTH VINEYARD STATION SPECIFIC PLAN
PRELIMINARY CAPITAL IMPROVEMENT ITEMS LISTING
Internal Roadway Improvements Listing & Cost Estimate

Project Number	Item	Project Description	On-site or Off-site	Detail Sheet Linked?	Quantity	Unit	Unit Price	Total Estimated Cost
Internal Collector Frontage Improvements at Parks, Open Space, Drainage Parkway & Facilities								
IR1	Park 1/2 Street Fig Imps -Onsite Collector Roads-56' R/W	Complete Half Section - 21' Pavement, 3' C&G, 6' Sidewalk = 30'	On	Yes	6,780	L.F.	$110	$745,800
IR2	Park 1/2 Street Fig Imps -Onsite Collector Roads-50' R/W	Complete Half Section - 18' Pavement, 3' C&G, 6' Sidewalk = 27'	On	Yes	2,100	L.F.	$103	$216,300
IR3	Drain Parkway/Det. Basin 1/2 Street Fig Imps -Onsite Collector Roads-56' R/W	Complete Half Section - 21' Pavement, 3' C&G, 6' Sidewalk = 30'	On	Yes	4,000	L.F.	$110	$440,000
IR4	Drain Parkway/Det. Basin 1/2 Street Fig Imps.-Onsite Collector Roads-50' R/W	Complete Half Section - 18' Pavement, 3' C&G, 6' Sidewalk = 27'	On	Yes	865	L.F.	$103	$89,100
IR5	Open Space Parkway 1/2 Street Fig Imps.-Onsite Collector Roads-56' R/W	Complete Half Section - 21' Pavement, 3' C&G, 6' Sidewalk = 30'	On	Yes	550	L.F.	$110	$60,500
IR6	Right of Way Acquisition for Collector Frontage Improvements		On	No	0	Acres	$70,000	$0
	Total for Internal Collector Frontage Improvements				14,295	L.F.		$1,552,000
Total Internal Roadway Facilities								$1,552,000



0 250 500 1000 feet

SCALE: 1"=1000'

LEGEND

PARK/OPEN SPACE/DRAINAGE FACILITY/ PARKWAY FRONTAGE IMPROVEMENTS, INTERNAL ROADWAYS

NOTE: SEE LAND USE PLAN FOR LAND USE LEGEND

North Vineyard Station Capital Improvement Program

PARK/ OPEN SPACE/ DRAINAGE FACILITY/ PARKWAY FRONTAGE AT INTERNAL ROADWAYS

Sacramento, California

January, 1998

MACKAY & SOMPS
CIVIL ENGINEERS, INC.
CIVIL ENGINEERING • LAND PLANNING • LAND SURVEYING

NORTH VINEYARD STATION SPECIFIC PLAN

PRELIMINARY
PER FOOT COST ESTIMATE

40' ROW (MINOR ROADWAY) FRONTAGES
Adjacent to Parks, Open Space, Drainage Fac. & Parkway, Exist. Residential - One Side Only

Project Description:
Complete Half Section - 13' Pavement, 3' C&G, 6' Sidewalk = 22'

	ITEM	QUANTITY	UNIT	UNIT PRICE	PER FT COST
1.	Clearing & Grubbing	22	S.F.	$0.10	$2.20
2.	Excavation- Minor Road (22 sf 1.2' deep)	0.98	C.Y.	$3.00	$2.93
3.	Asphaltic Concrete, 3"	13	S.F.	$0.70	$9.10
4.	Aggregate Base, 10"	13	S.F.	$0.95	$12.35
5.	Conc.-Curb and Gutter, Type 2	1	L.F.	$10.00	$10.00
6.	Conc.- 4" Sidewalk W/ 6" AB	6	S.F.	$2.30	$13.80
7.	Local Drainage-Minor RD.-(1 Side)	1	L.F.	$15.00	$15.00
8.	Street Lights-Minor Rd., Type B 200' Alt. Spac.,(1 Side)	1	L.F.	$4.00	$4.00
			Subtotal		**$69.38**
	30% (surveys, design, inspection and contingency)				$20.82
			Grand Total per Foot		**$90.20**
			Use		**$90.00**

Notes:
1. Joint Trench costs are excluded.
2. Right-of-way costs are excluded.
3. Landscaping and soundwall are excluded.
4. Assumes a 3" a.c. over 10" a.b. street section.

NORTH VINEYARD STATION SPECIFIC PLAN

PRELIMINARY
PER FOOT COST ESTIMATE

50' ROW (PRIMARY ROADWAY) FRONTAGES

Adjacent to Parks, Open Space, Drainage Fac. & Parkway, Exist. Residential - One Side Only

Project Description:
Complete Half Section - 18' Pavement, 3' C&G, 6' Sidewalk = 27'

	ITEM	QUANTITY	UNIT	UNIT PRICE	PER FT COST
1.	Clearing & Grubbing	27	S.F.	$0.10	$2.70
2.	Excavation- Minor Road (27 sf 1.2' deep)	1.20	C.Y.	$3.00	$3 60
3.	Asphaltic Concrete, 3"	18	S.F.	$0.70	$12.60
4.	Aggregate Base, 10"	18	S.F.	$0.95	$17.10
5.	Conc.-Curb and Gutter, Type 2	1	L.F.	$10.00	$10.00
6.	Conc.- 4" Sidewalk W/ 6" AB	6	S.F.	$2.30	$13.80
7.	Local Drainage-Minor RD.-(1 Side)	1	L.F.	$15.00	$15.00
8.	Street Lights-Minor Rd., Type B 200' Alt. Spac.,(1 Side)	1	L.F.	$4.00	$4.00
			Subtotal		**$78.80**
	30% (surveys, design, inspection and contingency)				$23.64
			Grand Total per Foot		**$102.44**
			Use		**$103.00**

Notes:
1. Joint Trench costs are excluded.
2. Right-of-way costs are excluded.
3. Landscaping and soundwall are excluded.
4. Assumes a 3" a.c. over 10" a.b. street section.

NORTH VINEYARD STATION SPECIFIC PLAN

PRELIMINARY
PER FOOT COST ESTIMATE

56' ROW (COLLECTOR ROADWAY) FRONTAGES
Adjacent to Parks, Open Space, Drainage Fac. & Parkway, Exist. Residential - One Side Only

Project Description:
Complete Half Section - 21' Pavement, 3' C&G, 6' Sidewalk = 30'

	ITEM	QUANTITY	UNIT	UNIT PRICE	PER FT COST
1.	Clearing & Grubbing	30	S.F.	$0.10	$3.00
2.	Excavation- Minor Road (30 sf 1.2' deep)	1.33	C.Y.	$3.00	$4.00
3.	Asphaltic Concrete, 3"	21	S.F.	$0.70	$14.70
4.	Aggregate Base, 10"	21	S.F.	$0.95	$19.95
5.	Conc.-Curb and Gutter, Type 2	1	L.F.	$10.00	$10.00
6.	Conc.- 4" Sidewalk W/ 6" AB	6	S.F.	$2.30	$13.80
7.	Local Drainage-Minor RD.-(1 Side)	1	L.F.	$15.00	$15.00
8.	Street Lights-Collector, Type B 180' Spacing (1 Side)	1	L.F.	$4.00	$4.00
			Subtotal		**$84.45**
	30% (surveys, design, inspection and contingency)				$25.34
			Grand Total per Foot		**$109.79**
			Use		**$110.00**

Notes:
1. Joint Trench costs are excluded.
2. Right-of-way costs are excluded.
3. Landscaping and soundwall are excluded.
4. Assumes a 3" a.c. over 10" a.b. street section.

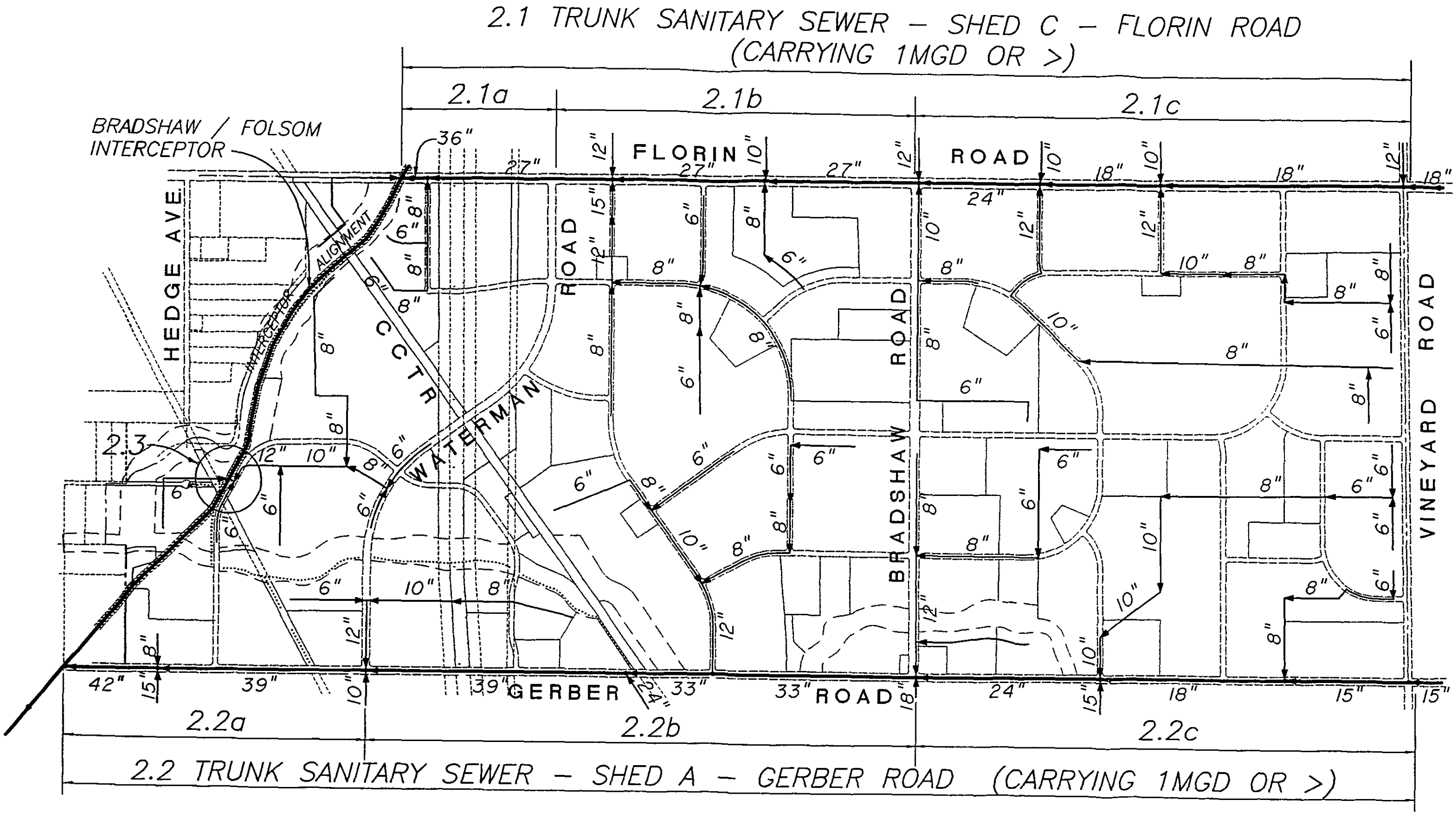
IV. SANITARY SEWER

The Sanitary Sewer Capital Improvement Program was developed in conjunction with the Water Quality Division of Sacramento County. The Folsom/Bradshaw Interceptor will serve development within the Specific Plan area and is not included in the NVS Sanitary Sewer CIP. Sacramento County Water Quality Division has indicated that construction of the interceptor is planned for 1998/1999. The facilities identified in the Sanitary Sewer C.I.P. and summarized in the NVSSP CIP Sewer Summary are onsite trunk facilities, carrying 1 MGD or greater. The NVSSP CIP Sewer Facilities Exhibit shows the location of the sanitary sewer facilities and their cooresponding project CIP identification number.

The estimates presented for trunk sewer facilities within this document are adequate for the purpose of identifying funding sources. The estimates have been prepared, in part, using the County Reimbursement Schedule (CSD-No. 1 Schedule A). CSD-No. 1 Schedule A was developed for the purpose of identifying reimbursable amounts for public sewer construction and may not reflect actual bid prices for North Vineyard Station Specific Plan. The estimates of cost should be refined before the final Financing Plan is accepted.

NORTH VINEYARD STATION SPECIFIC PLAN
CIP
SEWER SUMMARY

NORTH VINEYARD STATION SPECIFIC PLAN					
PRELIMINARY SEWER CAPITAL IMPROVEMENT ITEMS LISTING					
Project Number	Project Name	On-site or Off-site	Project Description	Detail Sheet Linked	Total
SANITARY SEWER IMPROVEMENTS					
Trunk Systems Carrying 1 MGD or Greater					
2.1	TRUNK SANITARY SEWER - FLORIN ROAD, SHED C				
2.1a	TRUNK SS - FLORIN ROAD (INTERCEPTOR TO WATERMAN)	On	36"/27" TRUNK SAN SEWER CONST.	Yes	$256,000
2 1b	TRUNK SS - FLORIN ROAD (WATERMAN TO BRADSHAW)	On	27" TRUNK SAN. SEWER CONST.	Yes	$750,000
2 1c	TRUNK SS - FLORIN ROAD (BRADSHAW TO VINYARD)	On	24"/18" TRUNK SAN SEWER CONST.	Yes	$820,000
2.2	TRUNK SANITARY SEWER - GERBER ROAD, SHED A				
2.2a	TRUNK SS - GERBER ROAD (INTERCEPTOR TO WATERMAN)	On	42"/39" TRUNK SAN. SEWER CONST.	Yes	$905,000
2.2b	TRUNK SS - GERBER ROAD (WATERMAN TO BRADSHAW)	On	39"/33" TRUNK SAN. SEWER CONST..	Yes	$1,482,000
2.2c	TRUNK SS - GERBER ROAD (BRADSHAW TO VINYARD)	On	24" TO 15" TRUNK SAN. SEWER CONST.	Yes	$974,000
Subtotal Trunk Systems Carrying 1 MGD or Greater					$5,187,000
Lateral Sewer Systems Carrying Less Than 1 MGD					
2.3	LATERAL SS - PASSILIS LANE (AT INTERCEPTOR)	On	LATERAL SAN. SEWER CONST. (INTERCEPTOR CONNECT.)	Yes	$25,000
Subtotal Lateral Systems Carrying Less Than 1 MGD					$25,000
Total Sanitary Sewer Costs					$5,212,000



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SCALE 1"=1000'

LEGEND

SANITARY SEWER PIPE & DIRECTION OF FLOW

North Vineyard Station
Capital Improvement Program
SEWER FACILITIES

Sacramento, California January, 1997

MACKAY & SOMPS
CIVIL ENGINEERS, INC.
CIVIL ENGINEERING • LAND PLANNING • LAND SURVEYING

NORTH VINYARD STATION SPECIFIC PLAN
CIP
SANITARY SEWER IMPS.
SEWER.XLW INDEX

7536-0
Sewer.xlw
2/4/98

SHEET	PROJECT NAME	TOTAL COST
2.1a	TRUNK SS - FLORIN ROAD (INTERCEPTOR TO WATERMAN)	$256,000
2.1b	TRUNK SS - FLORIN ROAD (WATERMAN TO BRADSHAW)	$750,000
2.1c	TRUNK SS - FLORIN ROAD (BRADSHAW TO VINYARD)	$820,000
2.2a	TRUNK SS - GERBER ROAD (INTERCEPTOR TO WATERMAN)	$905,000
2.2b	TRUNK SS - GERBER ROAD (WATERMAN TO BRADSHAW)	$1,482,000
2.2c	TRUNK SS - GERBER ROAD (BRADSHAW TO VINYARD)	$974,000
2.3	LATERAL SS - PASSILIS LANE (AT INTERCEPTOR)	$25,000

SEWER COST DETAIL

PROJECT NO. : 2.1b
PROJECT NAME: TRUNK SS - FLORIN ROAD (WATERMAN TO BRADSHAW)

PROJECT DESCRIPTION: 27" TRUNK SAN. SEWER CONST.
FROM WATERMAN RD. TO BRADSHAW RD.
SHED C - CARRYING MINIMUM OF 1MGD

PROJECT COSTS:

Item	Quantity	Unit	Unit Cost	Total Cost
27" San. Sewer (20'-30' deep, incl. mh's)	3350	L.F.	$156	$522,600
27" San. Sewer (10'-20' deep, incl. mh's)	660	L.F.	$107	$70,620
		Subtotal		**$593,200**
		15% Contingency		**$89,000**
		Construction Cost		**$682,200**
		10% Engineering		**$68,200**
		Total Costs		**$750,000**

FUNDING SOURCES:

NOTES:
1. Assumes sewer constr. concurrent with road improvements. (Excludes pavement Removal & Replacement.)
2. Revised unit costs per W.Q. 2-4-98.

SEWER COST DETAIL

PROJECT NO. :A28 — 2.2a
PROJECT NAME: — TRUNK SS - GERBER ROAD (INTERCEPTOR TO WATERMAN)

PROJECT DESCRIPTION: — 42"/39" TRUNK SAN. SEWER CONST.
FROM INTERCEPTOR SEWER TO WATERMAN RD.
SHED A - CARRYING MINIMUM OF 1MGD

PROJECT COSTS:

Item	Quantity	Unit	Unit Cost	Total Cost
Conn. to Interceptor Sewer	1	L.S.	$20,000.00	$20,000
39" San. Sewer (20'-30' deep, incl. mh's)	2,280	L.F.	$208	$474,240
42" San. Sewer (20'-30' deep, incl. mh's)	1,010	L.F.	$219	$221,190
		Subtotal		**$715,400**
		15% Contingency		**$107,300**
		Construction Cost		**$822,700**
		10% Engineering		**$82,300**
		Total Costs		**$905,000**

FUNDING SOURCES:

NOTES:
1. Assumes sewer constr. concurrent with road imps. (Excludes pavement removal and replacement.)
2. Revised unit costs per W.Q. 2-4-98.

SEWER COST DETAIL

PROJECT NO. : 2.2c
PROJECT NAME: TRUNK SS - GERBER ROAD (BRADSHAW TO VINYARD)

PROJECT DESCRIPTION: 24" TO 15" TRUNK SAN. SEWER CONST.
FROM BRADSHAW RD. TO VINEYARD RD.
SHED A - CARRYING MINIMUM OF 1MGD

PROJECT COSTS:

Item	Quantity	Unit	Unit Cost	Total Cost
15" San. Sewer (20'-30' deep, incl. mh's)	1390	L.F.	$103	$143,170
18" San. Sewer (20'-30' deep, incl. mh's)	850	L.F.	$114	$96,900
18" San. Sewer (30'-40' deep, incl. mh's)	1150	L.F.	$207	$238,050
24" San. Sewer (20'-30' deep, incl. mh's)	2000	L.F.	$146	$292,000
		Subtotal		**$770,100**
		15% Contingency		**$115,500**
		Construction Cost		**$885,600**
		10% Engineering		**$88,600**
		Total Costs		**$974,000**

FUNDING SOURCES:

NOTES:
1. Assumes sewer constr. concurrent with road imps. (Excludes pavement removal and replacement.)
2. Revised unit costs per W.Q. 2-4-98.

V. DRAINAGE

The Drainage Capital Improvement Program was developed in conjunction with the Water Resources Division of Sacramento County. The flood control and water quality facilities, summarized in the NVSSPCIP Drainage Summary, include channels, detention basins and trunk drainage pipe systems. The facilities will provide drainage service to the Plan area and will be a great benefit to areas outside of the Plan area as well. The NVSSP CIP Drainage Facilities Exhibit shows the drainage facilities and their corresponding project CIP identification number.

CHANNEL FACILITIES

The channel improvements include excavation, erosion control, channel landscaping, drainage crossings and a maintenance road. The maintenance road will be a joint use facility that will also function as a pedestrian bike pathway. The length of the pathway is estimated at 1.25 times the channel length. Only the portion of the pathway associated with a maintenance road is included in the Drainage CIP. The remaining improvements associated with the pedestrian/bike pathway are included in the Parks and Recreation CIP. Land acquisition for channel facilities has been included and estimated at $100,000 per acre. Because identification of existing drainage easements has not been performed and included at this time, channel land acquisition may be reduced in the future when a more detailed study of the extent of existing easements becomes available.

Drainage crossings at collector roadways are included in the Drainage CIP. Because of the potential cost sharing for arterial roadway drainage crossing facilities, these projects are identified in both the Roadway CIP and the Drainage CIP. At this time, the arterial drainage crossing facilities are split between the two CIP categories as follows:

- Cost of providing capacity up to the existing condition 100-year flow is included in the Roadway CIP (based on 1991 conditions as determined by WRD)
- Cost of providing capacity above the existing 100-year flow to the ultimate (watershed build out) condition 100-year flow is included in the Drainage CIP.
- The percent of total flow capacity for each category will be the basis for determining the split. For example, assume that the existing flow is 500 cfs and ultimate flow is 750 cfs at a particular bridge. The cost split would therefore be 67% to the Roadway CIP and 33% to the Drainage CIP.

The arterial roadway drainage crossing projects are listed in the Roadway CIP. If the cost for the project is to be split between the Roadway and Drainage CIP's based on the criteria above, the Roadway CIP shows the project as partially funded by the County Drainage Fee, and the Drainage CIP Summary includes the remainder of the cost.

The channel facilities include both onsite and offsite improvements.

DETENTION BASIN FACILITIES

Detention basin facilities include excavation, inlet/outlet structures, landscaping and a maintenance path. Land acquisition for detention basin sites has been included and estimated at $100,000 per acre. All detention basins are onsite except for Basin E20 which is located downstream of the Plan area.

TRUNK DRAINAGE FACILITIES

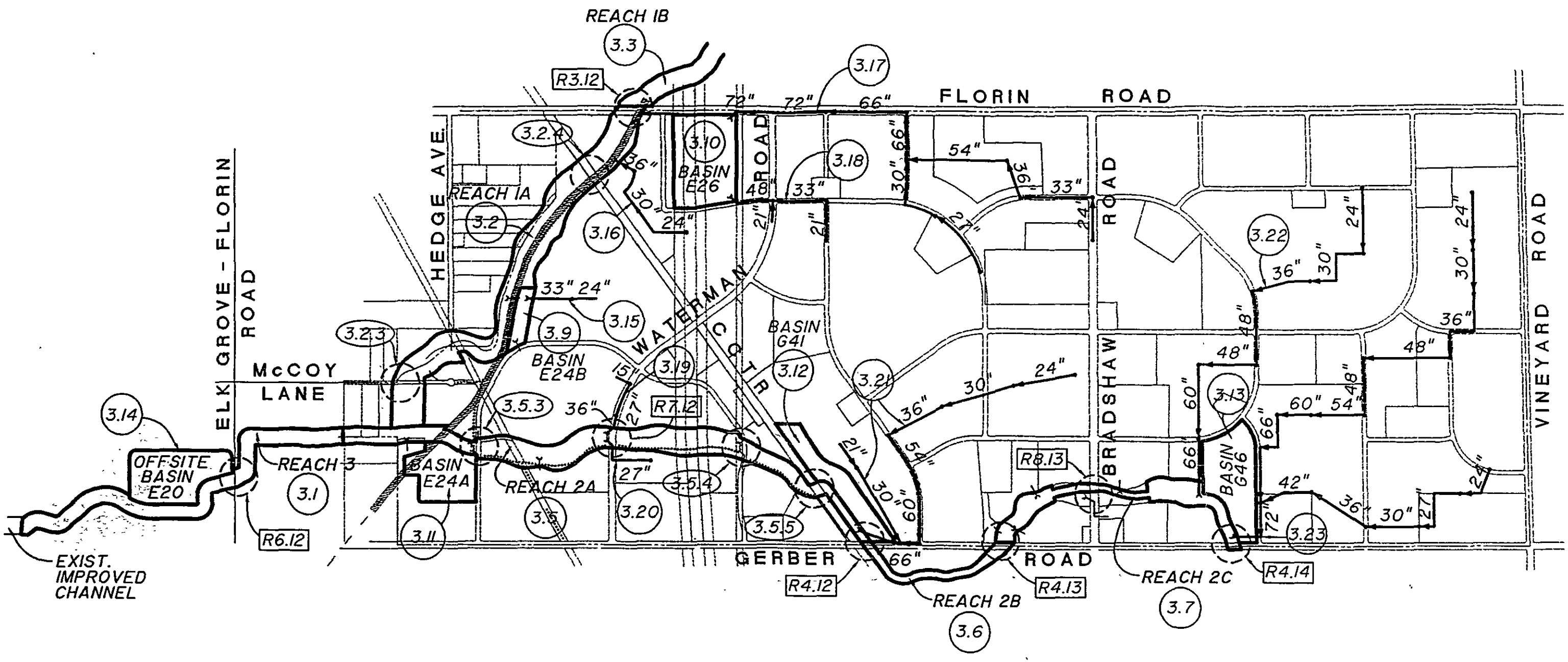
Trunk drainage facilities include onsite storm drainage pipes, manholes, and outlet structures. Trunk drainage pipe systems include pipe systems serving shed areas of 30 acres or more.

NORTH VINEYARD STATION SPECIFIC PLAN
CIP
DRAINAGE
SUMMARY

Project Number	Project Name	On-site or Off-site	Project Description	Detail Sheet Linked	Total
NORTH VINEYARD STATION SPECIFIC PLAN					
DRAINAGE CAPITAL IMPROVEMENT ITEMS SUMMARY					
DRAINAGE IMPROVEMENTS					
(See also Roadway Section for Additional Bridges/Culverts)					
Channel Related Items					
3.1	**Elder Creek Reach 3 (Improved Channel to W. Bndry)**				
3 1 1 A	ELDER CREEK REACH 3A - OFF-SITE CHANNEL IMPS.	Off	OFF-SITE CHANNEL CONSTR. (APPROX 1,830 L.F.)	Yes	$947,000
3 1.1 B	ELDER CREEK REACH 3B - OFF-SITE CHANNEL IMPS.	Off	OFF-SITE CHANNEL CONSTR. (APPROX. 3,020 L.F.)	Yes	$1,572,000
3.2	**Elder Creek Reach 1A (W. Bndry to Florin Rd.)**				
3.2 1 A	ELDER CREEK REACH 1A (a) - CHANNEL IMPROV'S	On	CHANNEL CONSTR. (APPROX. 2,650 L.F.)	Yes	$1,183,000
3.2.1 B	ELDER CREEK REACH 1A (b) - CHANNEL IMPROV'S.	On	CHANNEL CONSTR (APPROX. 2,910 L.F.)	Yes	$1,300,000
3.2 2	ELDER CREEK REACH 1A - DRAINAGE PARKWAY	On	CHANNEL PARKWAY CONSTR. (APPROX. 5,560 L.F.)	Yes	$132,000
3 2 3	ELDER CREEK REACH 1A (a) - McCOY LANE CROSSING	On	(3) 8'x6' BOX CULVERT CONSTR w/ HEADWALLS (+/- 40' R/W)	Yes	$152,000
3 2 4	ELDER CREEK REACH 1A (b) - CCTC RR BRIDGE CROSSING	On	CONST. NEW BRIDGE @ ELDER CREEK & CCT RxR CROSSING	Yes	$367,000
3.3	**Elder Creek Reach 1B (Upstream of Florin Rd.)**				
3.3.1	ELDER CREEK REACH 1B - OFF-SITE CHANNEL IMPROV'S.	Off	CHANNEL CONSTR. (APPOX. 1,400 L.F.)	Yes	$756,000
3 4	Left Blank For Additions	—	—	—	—
3.5	**Gerber Creek Reach 2A (W. Bndry to Gerber Rd. Crossing No. 4)**				
3.5.1 A	GERBER CREEK REACH 2A (a) - CHANNEL IMPROV'S.	On	CHANNEL CONSTR (APPROX. 3,350 L.F.)	Yes	$1,599,000
3.5.1 B	GERBER CREEK REACH 2A (b) - CHANNEL IMPROV'S.	On	CHANNEL CONSTR.(APPROX. 3,750 L.F.)	Yes	$1,669,000
3.5.2	GERBER CREEK REACH 2A - DRAINAGE PARKWAY	On	CHANNEL PARKWAY CORR. CONSTR. (APPROX. 7,100 L.F.)	Yes	$168,000
3.5.3	GERBER CREEK REACH 2A (a) -PASSALIS LN. CROSSING (WEST)	On	(3) 8'x6' BOX CULVERT CONST w/ HEADWALLS (56' R/W)	Yes	$167,000
3.5.4	GERBER CREEK REACH 2A (b) -PASSALIS LN CROSSING (EAST)	On	(3) 8'x6' BOX CULVERT CONSTR. w/ HEADWALLS (56' R/W)	Yes	$167,000
3.5.5	GERBER CREEK REACH 2A (b) - CCTC RR BRIDGE CROSSING	On	CONST. NEW BRIDGE @ ELDER CREEK AND CCTC RxR	Yes	$294,000
3.6	**Gerber Creek Reach 2B (Gerber Rd.Crossing 4 to Crossing 3)**				
3 6 1	GERBER CREEK REACH 2B - OFF-SITE CHANNEL IMPS.	Off	CHANNEL CONSTR (APPROX. 2,030 L.F.)	Yes	$984,000
3.7	**Gerber Creek Reach 2C (Gerber Rd.Crossing 3 to Crossing 2)**				
3 7 1	GERBER CREEK REACH 2C CHANNEL IMPROVEMENTS	On	CHANNEL CONSTR. (APPROX. 3,680 L.F.)	Yes	$1,331,000
3 7.2	GERBER CREEK REACH 2C - DRAINAGE PARKWAY	On	DRAINAGE PARKWAY CORR. CONST. (APPROX 3,680 L.F.)	Yes	$87,000
3.8	**Arterial Roadway Drainage Crossings** (also identified in Roadway CIP)	Off	Portion of Arterial Roadway Drainage Crossings (Roadway Proj. No. 4.14)	No	$41,000
Subtotal Channel Related Items					**$12,916,000**

NORTH VINEYARD STATION SPECIFIC PLAN
(SP)
DRAINAGE
SUMMARY

Project Number	Project Name	On-site or Off-site	Project Description	Detail Sheet Linked	Total
NORTH VINEYARD STATION SPECIFIC PLAN					
DRAINAGE CAPITAL IMPROVEMENT ITEMS SUMMARY					
Detention Basin Construction					
3.9	DETENTION BASIN E24B (ELDER CREEK REACH 1A (c))	On	3.7 AC. WATER QUALITY DETENTION BASIN CONST.	Yes	$543,000
3.10	DETENTION BASIN E23 (ELDER CREEK REACH 1A (a))	On	10.3 AC. FLOOD CONTROL/W.Q. DET. BASIN CONST.	Yes	$2,760,000
3.11	DETENTION BASIN E24A (GERBER CREEK REACH 2A (a))	On	12 AC. FLOOD CONTROL/W.Q. DET. BASIN CONST.	Yes	$1,910,000
3.12	DETENTION BASIN G41 (GERBER CREEK REACH 2A (b))	On	10.6 AC. FLOOD CONTROL/W.Q. DET. BASIN CONST.	Yes	$1,705,000
3.13	DETENTION BASIN G48 (GERBER CREEK REACH 2C)	On	18 AC. FLOOD CONTROL/W.Q. DET. BASIN CONST	Yes	$2,627,000
3.14	OFFSITE DETENTION BASIN E20 (ELDER CREEK REACH 3)	Off	18 AC. OFFSITE FLOOD CONTROL BASIN CONST	Yes	$2,456,000
Subtotal Detention Basin Construction					$12,041,000
Trunk Drainage Serving 20 Acres or More					
3.15	TRUNK DRAINGE, SHED L	On	TRUNK DRAIN FAC. (DISCHARGE TO BASIN E24B)	Yes	$33,000
3.16	TRUNK DRAINGE, SHED H	On	TRUNK DRAIN FAC. (DISCHARGE TO ELDER CREEK, REACH 3)	Yes	$33,000
3.17	TRUNK DRAINGE, SHEDS D & E	On	TRUNK DRAIN FAC. (DISCHARGE TO BASIN E26)	Yes	$739,000
3.18	TRUNK DRAINGE, SHED G	On	TRUNK DRAIN FAC. (DISCHARGE TO BASIN E23)	Yes	$135,000
3.19	TRUNK DRAINGE, SHED K	On	TRUNK DRAIN FAC. (DISCHARGE TO GERBER CREEK, REACH 2A)	Yes	$53,000
3.20	TRUNK DRAINGE, SHED J	On	TRUNK DRAIN FAC. (DISCHARGE TO GERBER CREEK, REACH 2A)	Yes	$44,000
3.21	TRUNK DRAINGE, SHED F	On	TRUNK DRAIN FAC. (DISCHARGE TO GERBER CREEK, REACH 2A)	Yes	$47,000
3.22	TRUNK DRAINGE, SHED C	On	TRUNK DRAIN FAC. (DISCHARGE TO BASIN G48)	Yes	$80,000
3.23	TRUNK DRAINGE, SHEDS A & B	On	TRUNK DRAIN FAC. (DISCHARGE TO BASIN G48)	Yes	$33,000
Subtotal Trunk Drainage Construction					$2,059,000
Wetland Mitigation					
3.100	WETLAND MITIGATION - ONSITE	On	Onsite Wetland Mitigation for Drainage Improvements	Yes	$2,735,000
3.101	WETLAND MITIGATION - OFFSITE	Off	Offsite Wetland Mitigation for Drainage Improvements	Yes	$2,431,000
Subtotal Wetland Mitigation:					$5,166,000
Total Drainage Costs					$19,264,000



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SCALE: 1" = 1200'

LEGEND

STORM DRAIN PIPE & DIRECTION OF FLOW

R4.12 — ROADWAY FACILITY IMPROVEMENTS W/ PROJECT NUMBER • DRAINAGE CROSSINGS

X.X.X — DRAINAGE CROSSING IMPROVEMENTS W/ PROJECT NUMBER

3.X — DRAINAGE FACILITY IMPROVEMENTS W/ PROJECT NUMBER

North Vineyard Station Capital Improvement Program
DRAINAGE FACILITIES

Sacramento, California January 3, 1997

MACKAY & SOMPS
CIVIL ENGINEERS, INC.
CIVIL ENGINEERING • LAND PLANNING • LAND SURVEYING

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NORTH VINEYARD STATION SPECIFIC PLAN
CIP
DRAINAGE IMPS./CHANNELS
CHANNEL.XLW INDEX

7536-0
Channel.xlw
2/11/98

SHEET		TOTAL
3.1.1 A	ELDER CREEK REACH 3A - OFF-SITE CHANNEL IMPS.	$947,000
3.1.1 B	ELDER CREEK REACH 3B - OFF-SITE CHANNEL IMPS.	$1,572,000
3.2.1 A	ELDER CREEK REACH 1A (a) - CHANNEL IMPROV'S.	$1,183,000
3.2.1 B	ELDER CREEK REACH 1A (b) - CHANNEL IMPROV'S.	$1,300,000
3.2.2	ELDER CREEK REACH 1A - DRAINAGE PARKWAY	$132,000
3.2.3	ELDER CREEK REACH 1A (a) - McCOY LANE CROSSING	$152,000
3.2.4	ELDER CREEK REACH 1A (b) - CCTC RR BRIDGE CROSSING	$367,000
3.3.1	ELDER CREEK REACH 1B - OFF-SITE CHANNEL IMPROV'S.	$756,000
3.5.1 A	GERBER CREEK REACH 2A (a) - CHANNEL IMPROV'S.	$1,599,000
3.5.1 B	GERBER CREEK REACH 2A (b) - CHANNEL IMPROV'S.	$1,669,000
3.5.2	GERBER CREEK REACH 2A - DRAINAGE PARKWAY	$168,000
3.5.3	GERBER CREEK REACH 2A (a) -PASSALIS LN. CROSSING (WEST)	$167,000
3.5.4	GERBER CREEK REACH 2A (b) -PASSALIS LN. CROSSING (EAST)	$167,000
3.5.5	GERBER CREEK REACH 2A (b) - CCTC RR BRIDGE CROSSING	$294,000
3.6.1	GERBER CREEK REACH 2B - OFF-SITE CHANNEL IMPS.	$984,000
3.7.1	GERBER CREEK REACH 2C CHANNEL IMPROVEMENTS	$1,331,000
3.7.2	GERBER CREEK REACH 2C - DRAINAGE PARKWAY	$87,000
3.8	ARTERIAL ROADWAY DRAINAGE CROSSINGS	$41,000

DRAINAGE COST DETAIL

PROJECT NO. : 3.1.1 A
PROJECT NAME: ELDER CREEK REACH 3A - OFF-SITE CHANNEL IMPS.

PROJECT DESCRIPTION: OFF-SITE CHANNEL CONSTR. (APPROX. 1,830 L.F.)
FROM EXISTING IMPROVED CHANNEL
TO D/S OF ELK GROVE-FLORIN RD.

PROJECT COSTS:

Item	Quantity	Unit	Unit Cost	Total Cost
Channel -Excavation	35,000	c.y.	$3.15	$110,250
Channel-Erosion Control	1,830	l.f.	$5.00	$9,150
Channel-Landscaping (Channel Area Only)	1,830	l.f.	$31.00	$56,730
Maintenance Road (12' wide @ 1.25 x channel length, excav. & A.B. only)	2,290	l.f.	$15.00	$34,350
		Subtotal		**$210,500**
		15% Contingency		**$31,600**
		Construction Cost		**$242,100**
		10% Engineering		**$24,200**
Channel-Land Acquis. (high)	6.81	ac.	$100,000	$681,000
		Total Cost		**$947,000**

FUNDING SOURCES:

NOTES:

1 Hec 2 Sections 4.799 to 5.753
2. Split Reach 3 into 3A & 3B to accommodate phasing disucssions
3. Added Channel land acquisition acreages which assume no existing easements.
4 Added maintenance road, 11-13-97
5. Revised maint. Rd. width per Pete Gheiti. Revised unit cost. 2-4-98
6. Moved wetland mitigation to proj. no. 3.100 & 3.101. 2-11-98

DRAINAGE COST DETAIL

PROJECT NO. : 3.1.1 B
PROJECT NAME: ELDER CREEK REACH 3B - OFF-SITE CHANNEL IMPS.

PROJECT DESCRIPTION: OFF-SITE CHANNEL CONSTR. (APPROX. 3,020 L.F.)
FROM D/S OF ELK GROVE-FLORIN RD.
TO WESTERN SPECIFIC PLAN BOUNDARY

PROJECT COSTS:

Item	Quantity	Unit	Unit Cost	Total Cost
Channel -Excavation	60,000	c.y.	$3.15	$189,000
Channel-Erosion Control	3,020	l.f.	$5.00	$15,100
Channel-Landscaping (Channel Area Only)	3,020	l.f.	$31.00	$93,620
Maintenance Road (12' wide @ 1.25 x channel length, excav. & A.B. only)	3,775	l.f.	$15.00	$56,625
		Subtotal		**$354,300**
		15% Contingency		**$53,100**
		Construction Cost		**$407,400**
		10% Engineering		**$40,700**
Channel-Land Acquis. (high)	11.24	ac.	$100,000	$1,124,000
		Total Cost		**$1,572,000**

FUNDING SOURCES:

NOTES:

1. Hec 2 Sections 4.799 to 5.402
2. Split Reach 3 into 3A & 3B to accommodate phasing disucssions.
3. Added Channel land acquisition acreages which assume no existing easements.
4. Added maintenance road, 11-13-97
5. Revised maint Rd. width per Pete Ghelfi. Revised unit cost. 2-4-98
6. Moved wetland mitigation to proj. no. 3.100 & 3.101. 2-11-98

DRAINAGE COST DETAIL

PROJECT NO. : 3.2.1 A
PROJECT NAME: ELDER CREEK REACH 1A (a) - CHANNEL IMPROV'S.

PROJECT DESCRIPTION: CHANNEL CONSTR. (APPROX. 2,650 L.F.) FROM WESTERN SPECIFIC PLAN BOUNDARY TO BASIN E24B

PROJECT COSTS:

Item	Quantity	Unit	Unit Cost	Total Cost
Channel -Excavation	58,000	c.y.	$3.15	$182,700
Channel-Erosion Control	2,650	l.f.	$5.00	$13,250
Channel-Landscaping (Channel Area Only)	2,650	l.f.	$31.00	$82,150
		Subtotal		**$278,100**
		15% Contingency		**$41,700**
		Construction Cost		**$319,800**
		10% Engineering		**$32,000**
Channel-Land Acquis. (high)	8.31	ac.	$100,000	$831,000
		Total Cost		**$1,183,000**

FUNDING SOURCES:

NOTES:

1. Hec 2 Sections 5.840 TO 6.365
2. Split Reach 1A into 1A(a) & 1B(b) to accommodate phasing disucssions.
3 Added Channel land acquisition acreages which assume no existing easements.
4. Moved wetland mitigation to proj. no. 3 100 & 3.101. 2-11-98

DRAINAGE COST DETAIL

PROJECT NO. : 3.2.2
PROJECT NAME: ELDER CREEK REACH 1A - DRAINAGE PARKWAY

PROJECT DESCRIPTION: CHANNEL PARKWAY CONSTR. (APPROX. 5,560 L.F.) FROM WESTERN SPECIFIC PLAN BOUNDARY TO FLORIN ROAD

PROJECT COSTS:

Item	Quantity	Unit	Unit Cost	Total Cost
Joint Use Ped./Bike Path (12' wide @ 1.25 x channel length, excav. & A.B. only)	6,950	l.f.	$15.00	$104,250
		Subtotal		**$104,300**
		15% Contingency		**$15,600**
		Construction Cost		**$119,900**
		10% Engineering		**$12,000**
		Total Cost		**$132,000**

FUNDING SOURCES:

NOTES:

1. The pedestrian/bicycle path quantities are based on 1.25 times the channel length. At the time of reimbursement, cost will be based on actual length.
2. Rev. unit cost to include only excav. & A.B. The costs for A.C., striping, signing & bollards, & D.G. shoulders included in Park & Rec. CIP. 2-5-97
3. Rev. unit cost 11-13-97
4. Revised maint. Rd. width per Pete Gheifi. Revised unit cost 2-4-98

DRAINAGE COST DETAIL

PROJECT NO. : 3.2.4
PROJECT NAME: ELDER CREEK REACH 1A (b) - CCTC RR BRIDGE CROSSING

PROJECT DESCRIPTION: CONST. NEW BRIDGE @ ELDER CREEK & CCT RxR CROSSING

PROJECT COSTS:

Item	Quantity	Unit	Unit Cost	Total Cost
Construct New Bridge	1	Lump Sum	$290,000.00	$290,000
		Subtotal		**$290,000**
		15% Contingency		**$43,500**
		Construction Cost		**$333,500**
		10% Engineering		**$33,400**
		Total Cost		**$367,000**

FUNDING SOURCES:

NOTES:

1 Channel excav included in Elder Creek Reach 1A channel improvements.

2. Per conversation with James Paluck on 1-7-97, the new SPTC Bridge construction over Middle Branch strawberry Creek just d/s of MBSC Det. Basin #1 was estimated by SPTC in 1995 at $290,000 The project was completed in 1996, however, the County has not seen the final project cost. Steve believes it may come in low. Just u/s of this new bridge, MBSC channel bottom width is 50'. Proposed bottom width of Elder Creek u/s is 50'

3 The possibility exists that the existing structure could be retrofitted for the new channel geometry and depth.

DRAINAGE COST DETAIL

PROJECT NO. : 3.5.1 A
PROJECT NAME: GERBER CREEK REACH 2A (a) - CHANNEL IMPROV'S.

PROJECT DESCRIPTION: CHANNEL CONSTR.(APPROX. 3,350 L.F.)
FROM CONFLUENCE w/ ELDER CREEK
TO U/S WATERMAN RD.

PROJECT COSTS:

Item	Quantity	Unit	Unit Cost	Total Cost
Channel -Excavation	61,000	c.y.	$3.15	$192,150
Channel-Erosion Control	3,350	l.f.	$5.00	$16,750
Channel-Landscaping (Channel Area Only)	3,350	l.f.	$31.00	$103,850
		Subtotal		**$312,800**
		15% Contingency		**$46,900**
		Construction Cost		**$359,700**
		10% Engineering		**$36,000**
Channel-Land Acquis. (high)	12.03	ac.	$100,000	$1,203,000
		Total Cost		**$1,599,000**

FUNDING SOURCES:

NOTES:

1. Hec 2 Sections 5 753 to 0.888
2. Split Reach 2A into 2A(a) & 2B(b) to accommodate phasing disucssions.
3. Added Channel land acquisition acreages which assume no existing easements.
4. Moved wetland mitigation to proj. no. 3.100 & 3.101. 2-11-98

DRAINAGE COST DETAIL

PROJECT NO. : 3.5.2
PROJECT NAME: GERBER CREEK REACH 2A - DRAINAGE PARKWAY

PROJECT DESCRIPTION: CHANNEL PARKWAY CORR. CONSTR. (APPROX. 7,100 L.F.) FROM CONFLUENCE w/ ELDER CREEK TO GERBER RD.

PROJECT COSTS:

Item	Quantity	Unit	Unit Cost	Total Cost
Joint Use Ped./Bike Path (12' wide @ 1.25 x channel length, excav. & A.B. only)	8,875	l.f.	$15.00	$133,125
		Subtotal		**$133,100**
		15% Contingency		**$20,000**
		Construction Cost		**$153,100**
		10% Engineering		**$15,300**
		Total Cost		**$168,000**

FUNDING SOURCES:

NOTES:

1. The pedestrian/bicycle path quantities are based on 1.25 times the channel length. At the time of reimbursement, cost will be based on actual length.
2. Rev unit cost to include only excav & A.B. The costs for A.C., striping, signing & bollards, & D.G. shoulders included in Park & Rec. CIP. 2-5-97
3. Rev unit cost 11-13-97
4. Revised maint Rd. width per Pete Ghelfi Revised unit cost 2-4-98

DRAINAGE COST DETAIL

PROJECT NO. : 3.5.4
PROJECT NAME: GERBER CREEK REACH 2A (b) -PASSALIS LN. CROSSING (EAST)

PROJECT DESCRIPTION: (3) 8'x6' BOX CULVERT CONSTR. w/ HEADWALLS (56' R/W)
GERBER CREEK @ PASSALIS LN. (EAST) CROSSING

PROJECT COSTS:

Item	Quantity	Unit	Unit Cost	Total Cost
(3) 8' x 6' Conc. Box Culverts	60	l.f.	$1,200.00	$72,000
Headwall & Wingwalls	2	each	$25,000	$50,000
Erosion Protection	1	Lump Sum	$10,000.00	$10,000
		Subtotal		**$132,000**
		15% Contingency		**$19,800**
		Construction Cost		**$151,800**
		10% Engineering		**$15,200**
		Total Cost		**$167,000**

FUNDING SOURCES:

NOTES: 1. Channel excav. incl. in Gerber Creek reach 2A channel imps

DRAINAGE COST DETAIL

PROJECT NO. : 3.5.5
PROJECT NAME: GERBER CREEK REACH 2A (b) - CCTC RR BRIDGE CROSSING

PROJECT DESCRIPTION: CONST. NEW BRIDGE @ ELDER CREEK AND CCTC RxR

PROJECT COSTS:

Item	Quantity	Unit	Unit Cost	Total Cost
Construct New Bridge	1	Lump Sum	$232,000.00	$232,000
		Subtotal		**$232,000**
		15% Contingency		**$34,800**
		Construction Cost		**$266,800**
		10% Engineering		**$26,700**
		Total Cost		**$294,000**

FUNDING SOURCES:

NOTES:

1. Channel excav. included in Gerber Creek Reach 2A channel improvements.

2. Per conversation with James Paluck on 1-7-97, the new SPTC Bridge construction over Middle Branch strawberry Creek just d/s of MBSC Det. Basin #1 was estimated by SPTC in 1995 at $290,000 The project was completed in 1996; however, the County has not seen the final project cost. Steve believes it may come in low. Just u/s of this new bridge, MBSC channel bottom width is 50'. Proposed bottom width of Gerber Creek u/s is 40'. Therefore, use prorated cost.

3. The possibility exists that the existing structure could be retrofitted for the new channel geometry and depth.

DRAINAGE COST DETAIL

PROJECT NO. : 3.6.1
PROJECT NAME: GERBER CREEK REACH 2B - OFF-SITE CHANNEL IMPS.

PROJECT DESCRIPTION: CHANNEL CONSTR. (APPROX. 2,030 L.F.)
OFF-SITE FROM GERBER RD. CROSSING NO. 4
TO GERBER RD. CROSSING NO. 3

PROJECT COSTS:

Item	Quantity	Unit	Unit Cost	Total Cost
Channel -Excavation	36,400	c.y.	$3.15	$114,660
Channel-Erosion Control	2,030	l.f.	$5.00	$10,150
Channel-Landscaping (Channel Area Only)	2,030	l.f.	$31.00	$62,930
Maintenance Road (12' wide @ 1.25 x channel length, excav. & A.B. only)	2,540	l.f.	$15.00	$38,100
		Subtotal		**$225,800**
		15% Contingency		**$33,900**
		Construction Cost		**$259,700**
		10% Engineering		**$26,000**
Channel-Land Acquis. (high)	6.98	ac.	$100,000	$698,000
		Total Cost		**$984,000**

FUNDING SOURCES:

NOTES:

1. Hec 2 Sections 1.524 to 1.900
2. Added Channel land acquisition acreages which assume no existing easements.
3. Added maintenance road, 11-13-97
4. Revised maint. Rd. width per Pete Gheifi. Revised unit cost. 2-4-98
5. Moved wetland mitigation to proj. no. 3 100 & 3.101. 2-11-98

DRAINAGE COST DETAIL

PROJECT NO. : 3.7.2
PROJECT NAME: GERBER CREEK REACH 2C - DRAINAGE PARKWAY

PROJECT DESCRIPTION: DRAINAGE PARKWAY CORR. CONST. (APPROX. 3,680 L.F.)
FROM GERBER RD. CROSSING NO. 3
TO GERBER RD. CROSSING NO. 2

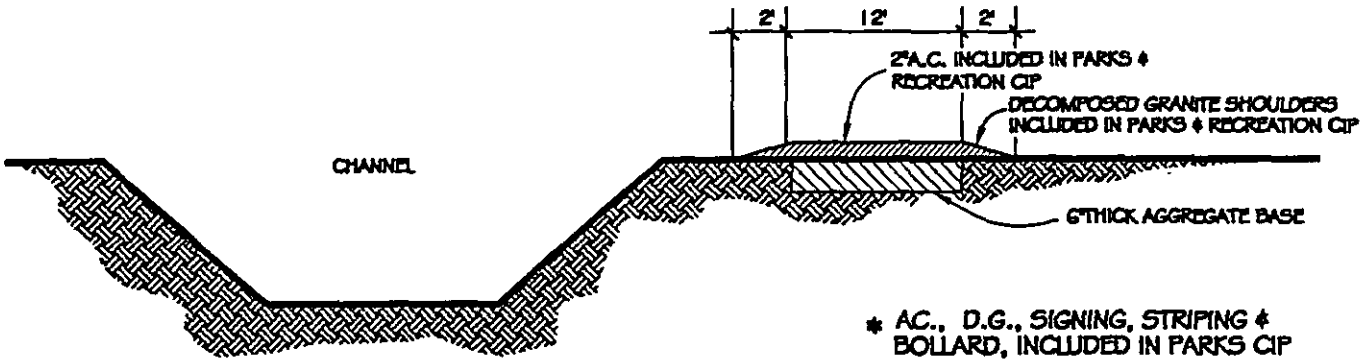
PROJECT COSTS:

Item	Quantity	Unit	Unit Cost	Total Cost
Joint Use Ped./Bike Path (12' wide @ 1.25 x channel length, excav. & A.B. only)	4,600	l.f.	$15.00	$69,000
		Subtotal		**$69,000**
		15% Contingency		**$10,400**
		Construction Cost		**$79,400**
		10% Engineering		**$7,900**
		Total Cost		**$87,000**

FUNDING SOURCES:

NOTES:

1. The pedestrian/bicycle path quantities are based on 1.25 times the channel length At the time of reimbursement, cost will be based on actual length.
2. Rev. unit cost to include only excav. & A.B. The costs for A.C., striping, signing & bollards, & D G shoulders included in Park & Rec CIP 2-5-97
3. Rev unit cost 11-13-97
4. Revised maint. Rd width per Pete Gheifi. Revised unit cost. 2-4-98



TYPICAL SECTION

not to scale

JOINT USE PED / BIKE PATH:

1.	AGGREGATE BASE 6"	12 S.F. @ $1.25	$ 15.00/L.F.
		TOTAL	$ 15.00/L.F.

NORTH VINEYARD STATION SPECIFIC PLAN
CIP
DRAINAGE IMPS./DETENTION BASINS
BASINS.XLW INDEX

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Basins.xlw
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SHEET	PROJECT NAME	TOTAL COST
3.9	DETENTION BASIN E24B (ELDER CREEK REACH 1A (a))	$545,000
3.10	DETENTION BASIN E26 (ELDER CREEK REACH 1A (b))	$2,790,000
3.11	DETENTION BASIN E24A (GERBER CREEK REACH 2A (a))	$1,918,000
3.12	DETENTION BASIN G41 (GERBER CREEK REACH 2A (b))	$1,705,000
3.13	DETENTION BASIN G46 (GERBER CREEK REACH 2C)	$2,627,000
3.14	OFFSITE DETENTION BASIN E20 (ELDER CREEK REACH 3)	$2,456,000

DRAINAGE COST DETAIL

PROJECT NO. : 3.9
PROJECT NAME: DETENTION BASIN E24B (ELDER CREEK REACH 1A (a))

PROJECT DESCRIPTION: 3.7 AC. WATER QUALITY DETENTION BASIN CONST.

PROJECT COSTS:

Item	Quantity	Unit	Unit Cost	Total Cost
Det. Basin - Excavation	28,000	c.y.	$3.15	$88,200
Basin Outlet	1	Lump Sum	$25,000	$25,000
Det. Basin - Maint. Path (6" ab @ 10')	18,800	s.f.	$1.00	$18,800
Landscaping	1	Lump Sum	$6,000	$6,000
Det. Basin - Fencing	0	l.f.	$10	$0
		Subtotal		**$138,000**
		15% Contingency		**$20,700**
		Construction Cost		**$158,700**
		10% Engineering		**$15,900**
Basin-Land Acquis. (high)	3.7	ac.	$100,000	$370,000
		Total Costs		**$545,000**

FUNDING SOURCES:

NOTES:

1. Landscaping assumed at $1500/acre of basin area.
2. Basin is sized for NPDES Facility to serve onsite areas east of Elder Creek. Areas within the Elder Creek shed and located outside the S.P.A. and west of Elder Creek are assumed to provide adequate N.P.D.E.S. for future development as needed.

DRAINAGE COST DETAIL

PROJECT NO. : 3.11
PROJECT NAME: DETENTION BASIN E24A (GERBER CREEK REACH 2A (a))

PROJECT DESCRIPTION: 12 AC. FLOOD CONTROL/W.Q. DET. BASIN CONST.

PROJECT COSTS:

Item	Quantity	Unit	Unit Cost	Total Cost
Det. Basin - Excavation	137,000	c.y.	$3.15	$431,550
Inlet Structure	1	Lump Sum	$42,000	$42,000
Water Quality Outlet	1	Lump Sum	$12,000	$12,000
Flood Control Outlet	1	Lump Sum	$22,000	$22,000
Weir Erosion Protection	1	Lump Sum	$12,000	$12,000
Det. Basin - Maint. Path (6" ab @ 10')	30,000	s.f.	$1.00	$30,000
Landscaping	1	Lump Sum	$18,000	$18,000
Det. Basin - Fencing	0	l.f.	$10	$0
		Subtotal		**$567,600**
		15% Contingency		**$85,140**
		Construction Cost		**$652,700**
		10% Engineering		**$65,300**
Basin-Land Acquis. (high)	12.0	ac.	$100,000	$1,200,000
		Total Costs		**$1,918,000**

FUNDING SOURCES:

NOTES: 1. Landscaping assumed at $1500/acre of basin area.

DRAINAGE COST DETAIL

PROJECT NO. : 3.13
PROJECT NAME: DETENTION BASIN G46 (GERBER CREEK REACH 2C)

PROJECT DESCRIPTION: 16 AC. FLOOD CONTROL/W.Q. DET. BASIN CONST.

PROJECT COSTS:

Item	Quantity	Unit	Unit Cost	Total Cost
Det. Basin - Excavation	224,500	c.y.	$3.15	$707,175
Water Quality Outlet	1	Lump Sum	$12,000	$12,000
Flood Control Outlet	1	Lump Sum	$22,000	$22,000
Weir Erosion Protection	1	Lump Sum	$12,000	$12,000
Det. Basin - Maint. Path (6" ab @ 10')	35,000	s.f.	$1.00	$35,000
Landscaping	1	Lump Sum	$24,000	$24,000
Det. Basin - Fencing	0	l.f.	$10	$0
		Subtotal		**$812,200**
		15% Contingency		**$121,800**
		Construction Cost		**$934,000**
		10% Engineering		**$93,400**
Basin-Land Acquis. (high)	16.0	ac.	$100,000	$1,600,000
		Total Costs		**$2,627,000**

FUNDING SOURCES:

NOTES: 1. Landscaping assumed at $1500/acre of basin area.

NORTH VINEYARD STATION SPECIFIC PLAN
CIP
DRAINAGE IMPS./TRUNK DRAINAGE
TRUNKSD.XLW INDEX

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9/3/97

SHEET	PROJECT NAME	TOTAL COST
3.15	TRUNK DRAINGE, SHED L	$55,000
3.16	TRUNK DRAINGE, SHED H	$93,000
3.17	TRUNK DRAINGE, SHEDS D & E	$739,000
3.18	TRUNK DRAINGE, SHED G	$135,000
3.19	TRUNK DRAINGE, SHED K	$53,000
3.20	TRUNK DRAINGE, SHED J	$44,000
3.21	TRUNK DRAINGE, SHED F	$497,000
3.22	TRUNK DRAINGE, SHED C	$508,000
3.23	TRUNK DRAINGE, SHEDS A & B	$935,000

DRAINAGE COST DETAIL

PROJECT NO. : 3.15
PROJECT NAME: TRUNK DRAINGE, SHED L

PROJECT DESCRIPTION: TRUNK DRAIN FAC. (DISCHARGE TO BASIN E24B) DRAINING 30 ACRES OR MORE

PROJECT COSTS:

Item	Quantity	Unit	Unit Cost	Total Cost
Outfall Structure (12" to 36")	1	each	$5,000.00	$5,000
33" Storm Drain (incl. mh's)	540	l.f.	$49	$26,460
24" Storm Drain (incl. mh's)	300	l.f.	$40	$12,000

Subtotal	**$43,500**
15% Contingency	**$6,500**
Construction Cost	**$50,000**
10% Engineering	**$5,000**
Total Costs	**$55,000**

FUNDING SOURCES:

NOTES: 1. Added 24" Storm Drain on 12-30-96.

DRAINAGE COST DETAIL

PROJECT NO. : 3.17
PROJECT NAME: TRUNK DRAINGE, SHEDS D & E

PROJECT DESCRIPTION: TRUNK DRAIN FAC. (DISCHARGE TO BASIN E26) DRAINING 30 ACRES OR MORE

PROJECT COSTS:

Item	Quantity	Unit	Unit Cost	Total Cost
Outfall Structure (42" to 72")	1	each	$10,000.00	$10,000
24" Storm Drain (incl. mh's)	525	l.f.	$40	$21,000
27" Storm Drain (incl. mh's)	900	l.f.	$41	$36,900
30" Storm Drain (incl. mh's)	960	l.f.	$44	$42,240
33" Storm Drain (incl. mh's)	900	l.f.	$49	$44,100
36" Storm Drain (incl. mh's)	490	l.f.	$51	$24,990
54" Storm Drain (incl. mh's)	1,250	l.f.	$83	$103,750
66" Storm Drain (incl. mh's)	1,580	l.f.	$105	$165,900
72" Storm Drain (incl. mh's)	1,200	l.f.	$113	$135,600

Subtotal	**$584,500**
15% Contingency	**$87,700**
Construction Cost	**$672,200**
10% Engineering	**$67,200**
Total Costs	**$739,000**

FUNDING SOURCES:

NOTES:
1. Assumes Storm Drain Const. concurrent w/ Road Imps. (Excludes pavement removal & replacement)

DRAINAGE COST DETAIL

PROJECT NO. : 3.19
PROJECT NAME: TRUNK DRAINGE, SHED K

PROJECT DESCRIPTION: TRUNK DRAIN FAC. (DISCHARGE TO GERBER CREEK, REACH 2A) DRAINING 30 ACRES OR MORE

PROJECT COSTS:

Item	Quantity	Unit	Unit Cost	Total Cost
Outfall Structure (12" to 36")	1	each	$5,000.00	$5,000
15" Storm Drain (incl. mh's)	200	l.f.	$29	$5,800
27" Storm Drain (incl. mh's)	400	l.f.	$41	$16,400
36" Storm Drain (incl. mh's)	280	l.f.	$51	$14,280
		Subtotal		**$41,500**
		15% Contingency		**$6,200**
		Construction Cost		**$47,700**
		10% Engineering		**$4,800**
		Total Costs		**$53,000**

FUNDING SOURCES:

NOTES:

DRAINAGE COST DETAIL

PROJECT NO. : 3.21
PROJECT NAME: TRUNK DRAINGE, SHED F

PROJECT DESCRIPTION: TRUNK DRAIN FAC. (DISCHARGE TO GERBER CREEK, REACH 2A) DRAINING 30 ACRES OR MORE

PROJECT COSTS:

Item	Quantity	Unit	Unit Cost	Total Cost
Outfall Structure (42" to 72")	1	each	$10,000.00	$10,000
21" Storm Drain (incl. mh's)	700	l.f.	$37	$25,900
24" Storm Drain (incl. mh's)	775	l.f.	$40	$31,000
30" Storm Drain (incl. mh's)	2,040	l.f.	$44	$89,760
36" Storm Drain (incl. mh's)	750	l.f.	$51	$38,250
54" Storm Drain (incl. mh's)	815	l.f.	$83	$67,645
60" Storm Drain (incl. mh's)	630	l.f.	$100	$63,000
66" Storm Drain (incl. mh's)	640	l.f.	$105	$67,200
		Subtotal		**$392,800**
		15% Contingency		**$58,900**
		Construction Cost		**$451,700**
		10% Engineering		**$45,200**
		Total Costs		**$497,000**

FUNDING SOURCES:

NOTES:
1. Assumes Storm Drain Const. concurrent w/ Road Imps. (Excludes pavement removal & replacement)

DRAINAGE COST DETAIL

PROJECT NO. : 3.23
PROJECT NAME: TRUNK DRAINGE, SHEDS A & B

PROJECT DESCRIPTION: TRUNK DRAIN FAC. (DISCHARGE TO BASIN G46) DRAINING 30 ACRES OR MORE

PROJECT COSTS:

Item	Quantity	Unit	Unit Cost	Total Cost
Outfall Structure (42" to 72")	2	each	$10,000.00	$20,000
24" Storm Drain (incl. mh's)	1,250	l.f.	$40	$50,000
27" Storm Drain (incl. mh's)	950	l.f.	$41	$38,950
30" Storm Drain (incl. mh's)	1,190	l.f.	$44	$52,360
36" Storm Drain (incl. mh's)	1,890	l.f.	$51	$96,390
42" Storm Drain (incl. mh's)	700	l.f.	$58	$40,600
48" Storm Drain (incl. mh's)	1,790	l.f.	$66	$118,140
54" Storm Drain (incl. mh's)	670	l.f.	$83	$55,610
60" Storm Drain (incl. mh's)	420	l.f.	$100	$42,000
66" Storm Drain (incl. mh's)	1,340	l.f.	$105	$140,700
72" Storm Drain (incl. mh's)	750	l.f.	$113	$84,750
		Subtotal		**$739,500**
		15% Contingency		**$110,900**
		Construction Cost		**$850,400**
		10% Engineering		**$85,000**
		Total Costs		**$935,000**

FUNDING SOURCES:

NOTES:

1. Low flow discharge to basin G46. High flow discharge to Gerber Creek reach 3.

DRAINAGE COST DETAIL

PROJECT NO. : 3.101
PROJECT NAME: WETLAND MITIGATION - OFFSITE

PROJECT DESCRIPTION: Offsite Wetland Mitigation for Drainage Improvements

PROJECT COSTS:

Item	Quantity (acres) Wetland Creation	Wetland Acquisition	Unit Cost	Total Cost
Vernal Pool	1.3	2.6	$210,000.00	$819,000
Seasonal Wetland	1.1	2.2	$210,000.00	$693,000
Emergent Marsh	4.1	0	$100,000.00	$410,000
		Subtotal		**$1,922,000**
		15% Contingency		**$288,300**
		Construction Cost		**$2,210,300**
		10% Engineering		**$221,000**
		Total Cost		**$2,431,000**

FUNDING SOURCES:

NOTES:

VI. WATER

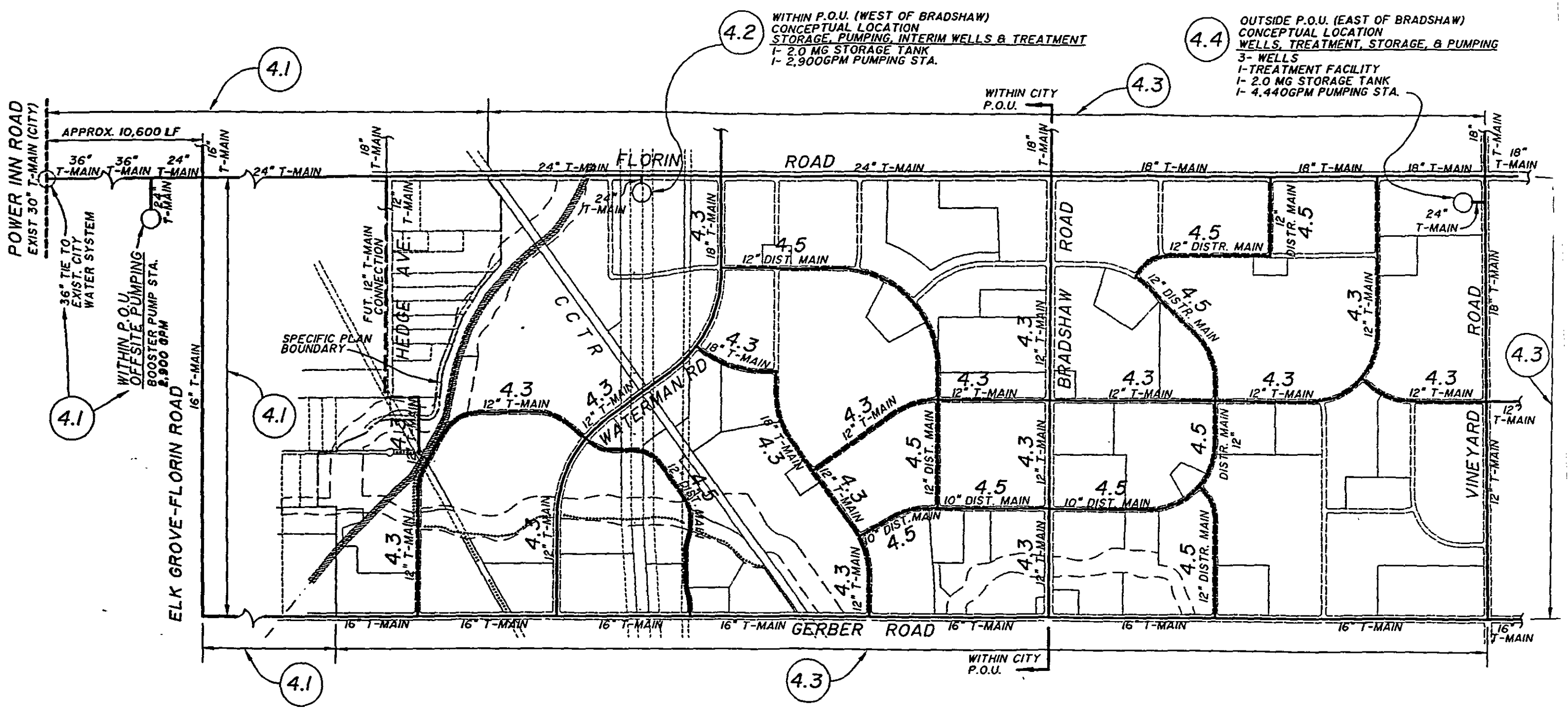
The Water Capital Improvement Program was developed in conjunction with the Water Resources Division of Sacramento County. The onsite and offsite water supply, treatment and distribution facilities will serve the Specific Plan areas both outside and within the City's Place of Use. The water facilities, summarized in the NVSSP CIP Water Summary, include supply, treatment, storage, pumping, transmission mains, and a limited number of distribution mains. The NVSSP CIP Water Facilities Exhibit shows the water facilities and their cooresponding project CIP identification number.

Two sites are identified for water facilities including wells, treatment, storage and pumping. Land acquisition for the two sites has been included and estimated at $50,000 per acre.

All transmission mains required to serve the Plan area are included in the CIP. In addition, a limited number of distribution mains to complete the transmission grid have been included.

NORTH VINEYARD STATION SPECIFIC PLAN
CIP
WATER SUMMARY

NORTH VINEYARD STATION SPECIFIC PLAN					
PRELIMINARY WATER CAPITAL IMPROVEMENT ITEMS LISTING					
Project Number	Project Name	On-site or Off-site	Project Description	Detail Sheet Linked	Total
WATER SYSTEM IMPROVEMENTS					
4.1	OFF-SITE ZONE 40 FACILITIES	Off	T-MAIN FAC. (POWER INN RD. TO W. BNDRY)	Yes	$6,985,000
4.2	ZONE 40 FACILITIES (WITHIN P.O U.)	On or Off	STORAGE, PUMPING, INTERIM WELLS & TREATMENT	Yes	$7,771,000
4 3	ON-SITE ZONE 40 FACILITIES (SPECIFIC PLAN AREA)	On	T-MAIN FACILITIES	Yes	$5,077,000
4.4	ZONE 40 FACILITIES (OUTSIDE P O U)	On or Off	WELLS, TREATMENT, STORAGE & PUMPING	Yes	$8,406,000
4.5	ON-SITE FACILITIES (SPECIFIC PLAN AREA)	On	DISTR. FAC. REQ'D TO COMPLETE TRANSMISSION GRID	Yes	$945,000
Total Water Costs					$29,184,000



0 600 1200 2400

SCALE: 1" = 1200'

LEGEND

——— PROP. WATER MAIN
– – – FUTURE WATER MAIN
4.X C.I.P. PROJECT NUMBER

WATER MASTER PLAN NOTES:

1. T-MAINS AS SHOWN ON THIS PLAN ARE PER ALTERNATIVE 2. THE PREFERRED ALTNERATIVE.
2. ONLY 12" & LARGER WATER MAIN FACILITIES HAVE BEEN SHOWN. EXCEPT WHERE 10" MAIN IS NEEDED TO COMPLETE 12" LOOPS FOR PRESENTATION.

North Vineyard Station Capital Improvement Program
WATER FACILITIES

Sacramento, California — MAY 1997

MACKAY & SOMPS
CIVIL ENGINEERS, INC.
CIVIL ENGINEERING AND PLANNING AND SURVEYING

NORTH VINEYARD STATION SPECIFIC PLAN
CIP
WATER IMPROVEMENTS
WATER.XLW INDEX

7536-0
Water.xlw
1/31/98

SHEET	PROJECT NAME	TOTAL
4.1	OFF-SITE ZONE 40 FACILITIES	$6,985,000
4.2	ZONE 40 FACILITIES (WITHIN P.O.U.)	$7,771,000
4.3	ON-SITE ZONE 40 FACILITIES (SPECIFIC PLAN AREA)	$5,077,000
4.4	ZONE 40 FACILITIES (OUTSIDE P.O.U.)	$8,406,000
4.5	ON-SITE FACILITIES (SPECIFIC PLAN AREA)	$945,000

WATER COST DETAIL

PROJECT NO. : 4.1
PROJECT NAME: OFF-SITE ZONE 40 FACILITIES

PROJECT DESCRIPTION: T-MAIN FAC. (POWER INN RD. TO W. BNDRY)

PROJECT COSTS:

Item	Quantity	Unit	Unit Cost	Total Cost
16" T-Main (incl. valves)	7,250	L.F.	$70.00	$507,500
24" T-Main (incl. valves)	4,700	L.F.	$120.00	$564,000
36" T-Main (incl. valves)	10,000	L.F.	$180.00	$1,800,000
36" Tie to Exist City Sys.	1	Lump Sum	$20,000.00	$20,000
24" T-Main (inc. valves, feed to Booster Pump Sta.)	500	L.F.	$120.00	$60,000
Booster Pump Station (2,900 gpm)	1	Lump Sum	$290,000.00	$290,000
Bore & Jack 24" T-Main (SPTC RR)	100	L.F.	$330.00	$33,000
Purchase Capacity at City W.T.P.	4.2	MGD	$535,000.00	$2,247,000
Upgrade City Water System	1	Lump Sum	$0.00	$0

Subtotal	**$5,521,500**
15% Contingency	**$828,200**
Construction Cost	**$6,349,700**
10% Engineering	**$635,000**

Right of Way Aquisition _____ Acres _____ $0

Total Cost	**$6,985,000**

FUNDING SOURCES:

NOTES:
12/12/96:
Revised Upgrade to City Water System, Pump Station Capacity, T-Main quantities, & added Purchase of Capacity at City W.T.P.
5/5/97: Revised 12" T-Main to 16" T-Main per Steve Kenning's comments.

WATER COST DETAIL

PROJECT NO. : 4.2
PROJECT NAME: ZONE 40 FACILITIES (WITHIN P.O.U.)

PROJECT DESCRIPTION: STORAGE, PUMPING, INTERIM WELLS & TREATMENT

PROJECT COSTS:

Item	Quantity	Unit	Unit Cost	Total Cost
24" T-Main (incl. valves)	1,000	L.F.	$120.00	$120,000
2.0 mg Storage Tank	2,000,000	Gallons	$0.40	$800,000
Pumping Station (2,900 gpm)	1	Lump Sum	$290,000.00	$290,000
Interim Phase I Facilities:				
Wells, (1275gpm)	3	Each	$400,000.00	$1,200,000
Pumping Station (2,550 gpm)	1	Lump Sum	$270,000.00	$270,000
Treatment Facility	2,550	GPM	$1,296.00	$3,304,800
		Subtotal		**$5,984,800**
		15% Contingency		**$897,700**
		Construction Cost		**$6,882,500**
		10% Engineering		**$688,300**
Right of Way Acquisition	2	Acres	$100,000.00	$200,000
		Total Cost		**$7,771,000**

FUNDING SOURCES:

NOTES:
12-12-96: Moved facility site location, revised facilities and added Interim Phase I facilities with ROW acquisition.
2-1-98: Revised land acquisition to $100k per Bob Davison & John Goetz.

WATER COST DETAIL

PROJECT NO. : 4.3
PROJECT NAME: ON-SITE ZONE 40 FACILITIES (SPECIFIC PLAN AREA)

PROJECT DESCRIPTION: T-MAIN FACILITIES

PROJECT COSTS:

Item	Quantity	Unit	Unit Cost	Total Cost
24" T-Main (incl. valves)	6,800	L.F.	$120.00	$816,000
18" T-Main (incl. valves)	12,400	L.F.	$80.00	$992,000
16" T-Main (incl. valves)	13,900	L.F.	$70.00	$973,000
12" T-Main (incl. valves)	30,800	L.F.	$40.00	$1,232,000

Subtotal	**$4,013,000**
15% Contingency	**$602,000**
Construction Cost	**$4,615,000**
10% Engineering	**$461,500**
Right of Way Aquisition _____ Acres _____	$0
Total Cost	**$5,077,000**

FUNDING SOURCES:

NOTES:
12-12-96: Revised project description to include all onsite T-Main facilities.
5-5-97: Revised 12", 16", & 18" T-Main quantities and revised 16" & 18" T-Main unit costs per Steve Kenning's comments.

WATER COST DETAIL

PROJECT NO. : 4.4
PROJECT NAME: ZONE 40 FACILITIES (OUTSIDE P.O.U.)

PROJECT DESCRIPTION: WELLS, TREATMENT, STORAGE & PUMPING

PROJECT COSTS:

Item	Quantity	Unit	Unit Cost	Total Cost
24" T-Main (incl. valves)	1,000	L.F.	$120.00	$120,000
2.0 mg Storage Tank	2,000,000	Gallons	$0.40	$800,000
Pumping Station (4,440 gpm)	1	EA.	$400,000.00	$400,000
Wells, (1275gpm)	3	Each	$400,000.00	$1,200,000
Treatment Facility	3,000	GPM	$1,296.00	$3,888,000
		Subtotal		**$6,408,000**
		15% Contingency		**$961,200**
		Construction Cost		**$7,369,200**
		10% Engineering		**$736,900**
Right of Way Acquisition	3	Acres	$100,000.00	$300,000
		Total Cost		**$8,406,000**

FUNDING SOURCES:

NOTES:
12-12-96: Revised facility site location, capacities, & added R.O.W.acquisition
5-5-97: Revised wells (1275gpm) unit cost per Steve Kenning's comments.
2-1-98: Revised land acquisition to $100k per Bob Davison & John Goetz.

WATER COST DETAIL

PROJECT NO. . 4.5
PROJECT NAME: ON-SITE FACILITIES (SPECIFIC PLAN AREA)

PROJECT DESCRIPTION: DISTR. FAC. REQ'D TO COMPLETE TRANSMISSION GRID

PROJECT COSTS:

Item	Quantity	Unit	Unit Cost	Total Cost
12" Water Main (incl. valves)	15,450	L.F.	$40.00	$618,000
10" Water Main (incl. valves & fh stubs)	4,300	L.F.	$30.00	$129,000
		Subtotal		**$747,000**
		15% Contingency		**$112,100**
		Construction Cost		**$859,100**
		10% Engineering		**$85,900**
Right of Way Aquisition	_____	Acres	_____	$0
		Total Cost		**$945,000**

FUNDING SOURCES:

NOTES:
12-12-96: Revised project description to all onsite distribution mains.
5-5-97: Revised project name per Steve Kenning's comments.

VII. PARKS AND RECREATION

The Parks and Recreation Capital Improvement Program was developed in conjunction with Southgate Recreation and Park District. The facilities, summarized in the NVSSP CIP Parks and Recreation Summary, include drainage parkway facilities, park facilities, linear parkway facilities, and a community center within the Plan area. The CIP reflects improvements associated with the Preferred Plan.

The drainage parkway facilities include landscaping, a low flow crossing, and a joint use pedestrian bike pathway along the proposed Elder Creek and Gerber Creek onsite corridors. The pedestrian bike pathway is a joint use facility that will also function as a maintenance road. The length of the pathway is estimated at 1.25 times the channel length. A portion of the pathway facility, associated with the maintenance road, is included in the Drainage CIP. The remaining improvements, associated with the pedestrian/bike path, are included in the Parks and Recreation CIP. It is assumed that the open space drainage parkway will be dedicated as development occurs. Therefore, no land acquisition has been included.

The park facilities include basic site improvements for onsite parks identified in the Plan area as well as for fifteen onsite tot lots. In addition, the CIP includes an onsite community center facility. The estimated cost for the community center facility includes site improvements, building, fees, landscaping, architecture and engineering.

The linear parkway facilities include landscaping and a pedestrian bike path. It is assumed that the open space linear parkway will be dedicated as development occurs. Therefore, no land acquisition has been included.

NORTH VINEYARD STATION SPECIFIC PLAN CIP
PARKS AND RECREATION SUMMARY

NORTH VINEYARD STATION SPECIFIC PLAN
PRELIMINARY CAPITAL IMPROVEMENT ITEMS LISTING
Park & Recreation Improvements Listing & Cost Estimate

Project Number	Item	Project Description	On-site or Off-site	Data Sheet Linked?	Quantity	Unit	Unit Price	Total Estimated Cost
Drainage Parkway Facilities								
DP1	Low Flow Pedestrian / Bicycle Path Crossing	Low Flow Crossing (1 Elder Creek and CCTC Railroad	On	No	1	Each	$25,000	$25,000
DP2	Elder Creek Reach 1A- (Western SPA Bndry to Florin Rd)	Drainage Parkway Landscaping Improvements (Assume One-side area only and 6,050 l.f. trail)	On	No	6,050.0	L.F.	$18	$111,000
DP3	Gerber Creek Reach 2A- (Confluence w/ Elder Creek to Gerber Rd Crossing)	Drainage Parkway Landscaping Improvements (Assume 8,075 l.f. trail)	On	No	8,075.0	L.F.	$18	$142,000
DP4	Gerber Creek Reach 2C - (Gerber Rd Crossing (3 to 2)	Drainage Parkway Landscaping Improvements (Assume 4,000 l.f. trail)	On	No	4,000.0	L.F.	$18	$74,000
DP5	JOINT USE DRAINAGE PARKWAY PED./BIKE TRAIL	JOINT USE DRAINAGE PARKWAY PED./BIKE PATH (Excludes excavation and concrete base included in Drainage CIP)	On	Yes	20,625	L.F.	$18	$338,000
DP6	Drainage Parkway Land Acquisition		On	No	20,625.0	AC	$0	$0
	Total Per Drainage Corridor Parkway Costs				20,625.0	Acres		$730,000
Park Development								
P1	Basic Park Improvements (0 acres<Quimby Park Acreage<6 acres)	Site Improvements and Embellishment	On	Yes	24.0	AC.	$52,500	$1,260,000
P3	[illegible] (3 acres<Quimby Park Acreage<10 acres)	[illegible]	On	Yes	43.8	AC	[illegible]	$1,092,000
[illegible]	[illegible] (10 acres<Quimby Park Acreage)	[illegible]	On	Yes	[illegible]	AC	[illegible]	[illegible]
[illegible]	Toilet	Toilet	On	No	1.0	Each	[illegible]	[illegible]
P6	Community Center	[illegible]	On	No	1	[illegible]	$1,000,000	[illegible]
	Total for Park Development				[illegible]	Acres		[illegible]
Linear Parkway Development								
P20	Linear Parkway Landscaping	Linear Parkway Landscaping	On	No	1,000.0	L.F.	$10	$30,000
P21	LINEAR PARKWAY PED./BIKE TRAIL	PEDESTRIAN PATH AT PARKS & LINEAR PARKWAY	On	Yes	1,000	L.F.	$22	$22,000
P22	Linear Parkway Land Acquisition		On	No	1,000.0	AC	$0	$0
	[illegible]							[illegible]
[illegible]								

PARKS COST DETAIL

PROJECT NO. : DP5
PROJECT NAME: JOINT USE DRAINAGE PARKWAY PED./BIKE TRAIL

PROJECT DESCRIPTION: JOINT USE DRAINAGE PARKWAY PED./BIKE PATH MEANDERING ADJACENT TO CHANNEL

PROJECT COSTS:

Item	Quantity	Unit	Unit Cost	Total Cost
Asphaltic Concrete, 2"	12	S.F.	$0.45	$5.40
Decomposed Granite Sholders	4	S.F.	$1.50	$6.00
Signing, striping, bollards	1	Lump Sum	$3.00	$3.00

Subtotal	**$14.40**
10% Contingency	**$1.44**
Construction Cost	**$15.84**
10% Surveys, design & Inspection	**$1.58**
Total Cost	**$17.42**
Use	**$18.00**

FUNDING SOURCES:

NOTES:

1 The pedestrian/bicycle path quantities are based on 1.25 times the channel length. At the time of reimbursement, cost will be based on actual length.
2. Costs for excavation and aggregate base included in Drainage CIP.
3 Revised joint use path width per Pete Ghelif. Revised quantity. 2-4-98.

PARKS COST DETAIL

PROJECT NO. : P21
PROJECT NAME. LINEAR PARKWAY PED./BIKE TRAIL

PROJECT DESCRIPTION: PED./BIKE PATH AT PARKS & LINEAR PARKWAY

PROJECT COSTS.

Item	Quantity	Unit	Unit Cost	Total Cost
Excavation	0.2	c.y.	$3.00	$0.60
Asphaltic Concrete, 2"	10	S.F.	$0 45	$4.50
Aggregate Base, 4"	10	S.F.	$0.40	$4.00
Decomposed Granite Sholders	4	S.F.	$1.50	$6.00
Signing, striping, bollards	1	Lump Sum	$3.00	$3.00

Subtotal	**$18.10**
10% Contingency	**$1.81**
Construction Cost	**$19.91**
10% Surveys, design & inspection	**$1.99**
Total Cost	**$21.90**
Use	**$22.00**

FUNDING SOURCES·

NOTES. 1 The pedestrian/bicycle path quantities are based on 1.25 times the channel length. At the time of reimbursement, cost will be based on actual length.

VIII. FIRE PROTECTION

The Fire Protection Capital Improvement Program was developed in conjunction with the American River Fire Protection District. The estimated cost for the Fire Protection Capital Improvement Program includes the re-opening of Station 52. The District has indicated that the existing Station 52 property will meet the needs of a new station.

In November 1996, the American River Fire Protection District estimated the costs as follows:

Fire Station	$1,200,000
Engine/Water Tender	$252,000
Model 14 Wildland Interface Engine	$198,000
Ambulance	$145,000
TOTAL =	**$1,795,000**

IX. TRANSIT

The Transit CIP was developed in cooperation with Regional Transit. The Transit CIP includes a Park and Ride facility located within the Plan area. Land acquisition for the 9 acre site is included and estimated at $70,000 per acre.

7536-00
2/3/98

NVSSP TRANSIT CIP
COST DETAIL SHEET

Park & Ride
(9 AC, Site)

1.	Grading	9 AC = 392,040 S.F. @ $1.25/S.F. =			$490,050
2.	Paving	85% of 9 AC = 333,234 S.F. @ $1.10/S.F. =			$366,557
3.	Landscaping w/ irrig. & planters	15% of 9AC = 58,806 S.F. @ $3.00/S.F. =			$176,418
4.	Water Services	1 EA	$600 =		$600
5.	Sewer Service	1 EA	$600 =		$600
6.	Perimeter Curbs	2,650 L.F.	$2.00 =		$5,300
7.	Drainage - Local	1 L.S.	$40,000 =		$40,000
8.	Streetlights	30 EA	$2,000 =		$60,000
9.	Signs	4 EA	$225 =		$900
10.	Joint Utility Trench	1 L.S.	$20,000 =		$20,000
	SUBTOTAL				$1,160,000
	30% eng, design, inspection, survey, cont.			$	348,100.00
			SUBTOTAL		$1,508,100
	LAND ACQUISITION		9 AC @ $70 K/AC	$	630,000
			TOTAL		$2,138,100
			USE	**$**	**2,138,000**

X. LIBRARY

The NVSSP Library CIP was developed in cooperation with the Sacramento Public Library and the County of Sacramento. The cost identified in the CIP includes NVSSP's fair share of the Elk Grove Regional Library proposed at the intersection of Elk Grove Boulevard and Williamson Road. The cost of the Elk Grove Regional Library was estimated in 1997 dollars by Sacramento Public Library as follows:

Construction and Interior Furnishings	$7,939,200
Initial Book Collection	$3,477,900
TOTAL	$11,417,100

The regional portion of this facility was estimated in Elk Grove/ West Vineyard Public Facility Financing Plan to be 50% of the total costs, or $5,708,550.

50% of $11,417,100 = $5,708,550

The NVSSP area's projected build out population of 15,847 is 15.7% of the total 101,071 build out population of the NVSSP and EGWV areas. Based on this revised build out population, the estimated plan area cost is $896,000.

(15,847 / 101,071) x $5,708,550 = **$896,000**

XI. SCHOOL

The School Capital Improvement Program was developed in conjunction with Elk Grove Unified School District. Based on the Preferred Plan, the District estimated the student generation and financial impact for development in the Plan area. The following School CIP Detail sheet shows the E.G.U.S.D. Environmental Review Project Worksheet for the Plan area. The E.G.U.S.D. estimated the total cost to be $67,712,000. This cost includes both onsite and offsite facilities.

NORTH VINEYARD STATION SPECIFIC PLAN CIP
SCHOOL DETAIL SHEET

ENVIRONMENTAL REVIEW PROJECT WORKSHEET

PROJECT NAME	North Vineyard Station Preferred Plan	NUMBER OF DWELLING UNITS (SF)	5689
CONTROL NUMBER		NUMBER OF DWELLING UNITS (MF)	637

STUDENT YIELD BY DWELLING TYPE

DWELLING TYPE	NO. OF UNITS		K-12 YIELD RATE		STUDENT YIELD
SINGLE FAMILY *	5689	X	0.6746	=	3837.80
MULTI FAMILY **	637	X	0.5057	=	322.13
PROJECT'S TOTAL ESTIMATED STUDENT YIELD				=	4159.93

STUDENT YIELD BY GRADE

DWELLING TYPE/NUMBER		K - 6		7 - 8		9 - 12	
SINGLE FAMILY *	5689	2202.78	0.3872	618.96	0.1088	1016.06	0.1786
MULTI FAMILY **	637	206.96	0.3249	48.09	0.0755	67.08	0.1053
TOTAL STUDENTS		2409.74		667.06		1083.13	

STUDENT HOUSING COSTS

GRADE LEVEL	NUMBER OF UNITS		COST PER STUDENT		COST
Elementary	2409.74	X	$13,070	=	$31,495,329
Middle	667.06	X	$16,866	=	$11,250,578
High/Cont	1083.13	X	$23,050	=	$24,966,181
TOTAL COST				=	$67,712,089

DEVELOPMENT FEES COLLECTED

DWELLING TYPE	NUMBER OF UNITS		SQ FT PER UNIT ***		FEE PER SQ FT		FEE PER UNIT
SINGLE FAMILY *	5689	X	1762	X	$3.17	=	$31,776,137
MULTI-FAMILY **	637	X	966	X	$3.17	=	$1,950,634
COMMERCIAL				X	$0.30	=	$0
TOTAL FEE			*** AVERAGE SIZE			=	$33,726,771

CURRENT FINANCIAL IMPACT SUMMARY

STUDENT HOUSING COSTS		$67,712,089
RESIDENTIAL FEES GENERATED		$33,726,771
NEGATIVE FINANCIAL IMPACT	=	$33,985,317

** Includes single family detached homes, halfplexes, mobile homes not located in mobile home parks, and homes located on agricultural land*

*** Includes apartments, condominiums, duplexes & mobile homes located in mobile home parks.*

Revised 4/24/97

ATTACHMENT 4

NVSSP POLICY PLAN

REVISED POLICIES

endorsed by the Policy Planning Commission
on December 10, 1997

RESIDENTIAL LAND USE POLICIES

1. Preserve the integrity of existing neighborhoods by preventing the encroachment of incompatible land uses and associated activities (e.g., excessive through traffic).

2. Rear and side yards shall face streets designated as Arterial and Thoroughfare streets on the Circulation Plan. Subdivisions shall be separated from Arterial and Thoroughfare streets by landscaped areas, sound walls, fences, and/or berms that conform to the Design Guidelines included in this Plan.

3. The number of vehicular access points to subdivisions shall be limited in order to reduce through traffic; however, multiple linkages for pedestrians and bicyclists are encouraged.

4. Residential subdivisions shall be designed to facilitate pedestrian and bicycle travel.

5. Design and architecture of proposed residential projects ~~should~~ **shall** consider the Design Guidelines included in the Specific Plan.

6. Private open space and recreation amenities that will meet the needs of the resident population shall be provided in multi-family residential projects.

7. Residential lotting patterns should promote opportunities for public access into public open spaces. Parks and other community open spaces should be accessible at points along the street systems.

8. Residential subdivisions shall be designed to facilitate surveillance of parks and open space areas by residents and Sheriff patrols.

9. Single Family and Medium Density Residential dwellings shall have frontage on, and driveway access to, Collector Streets only in accordance with average daily traffic counts described in Section 7.5.1.

10. Provide a range of land use densities within newly developing areas to enhance community vitality and create a mix of lot and housing types.

11. Variation of housing within neighborhoods is encouraged, provided the mix is architecturally compatible.

12. Long stretches of backup lots along parkways and drainage/creek corridors should be discouraged. The use of front on streets, side yard lotting patterns and open-ended cul-de-sacs are appropriate.

13. Provide adequate buffering within the urban-residential areas where adjacent land uses differ significantly. Appropriate buffering techniques include larger lots, additional setbacks, landscape corridors or any appropriate combination.

COMMERCIAL LAND USE POLICIES

1. Parking lots, loading areas, outdoor lighting, trash enclosures, and other potentially disruptive features of commercial development shall be located, designed, and oriented to minimize negative impacts on adjacent residential areas.

2. Pedestrian and bicycle access to and within commercial areas should be facilitated by the creation of sidewalks, pedestrian/bicycle paths, and bicycle parking facilities.

3. To further encourage walking and cycling to work, businesses shall be encouraged to provide shower and locker room facilities for their employees.

4. All aspects of commercial development, including architecture, landscaping, lighting, and signage should consider the Design Guidelines included in the Specific Plan.

5. Commercial development shall be located, designed, and oriented to minimize negative impacts on nearby residential areas utilizing buffering techniques such as vegetative screening, open space, or other means to accomplish this objective.

6. The Commercial land uses located along Planning Area arterials and thoroughfares should be accessible by public transportation.

7. Provisions shall be made to accommodate pedestrians along street frontages and through parking areas to reach main building entrances.

8. Pedestrian access points shall be provided along the site perimeter of commercial and office uses to enable pedestrian access from adjacent residential neighborhoods. These access points should be designed appropriately to maintain land use compatibility and address safety concerns.

9. Consideration shall be given to the reduction of parking requirements for individual uses where it can be demonstrated that an overlap of parking demand exists for the overall commercial complex.

OPEN SPACE LAND USE POLICIES

General Policies

1. Storm drainage in open space areas shall be by means of natural or natural-appearing stream courses, rather than closed culverts, except where in conflict with other planned facilities.

2. Except where wetlands mitigation, drainage channel, or stormwater detention construction is proposed and where necessary to prevent erosion, grading and construction shall be prohibited in designated open space areas. In instances where grading is permitted, the minimum necessary shall be allowed.

3. Pedestrian and bicycle trails and pathways are encouraged within open space areas to the extent possible. Such facilities shall be located and designed to minimize disturbance of natural features.

4. To the maximum extent feasible, uses abutting Open Space shall be oriented and designed to permit surveillance of these areas in order to discourage unlawful activities.

5. Where residential development abuts Parkways and Drainage Parkways, fences shall adhere to the following design: six (6) feet in height, consisting of three (3) feet of wrought iron on top of three (3) feet of masonry wall. **The Planning Commission may waive this requirement where privacy is an issue adjacent to a bicycle path.**

Drainage Parkway Policies

1. The Drainage Parkways (i.e., Elder Creek and Gerber Creek) shall be designed as natural-appearing corridors, serving to enhance wetlands and riparian habitats, act as natural flood water detention areas, and function as water quality enhancement features. The Drainage Parkways shall be designed to permit the growth of vegetation that does not impede the design flow characteristics. Periodic clearing is allowed to maintain channel function.

2. Drainage Parkways should be crossed by streets only in those locations shown in the Specific Plan Land Use Diagram.

3. To the maximum extent possible, only one side of any segment of Drainage Parkway shall have homes backing up to it. However, homes shall not backup to the Drainage Parkway on sides containing a Pedestrian/Bicycle pathway.

4. Stormwater detention should include consideration for joint-use of park and recreation facilities at the time of final design.

Wetlands Policies

1. Except where off-site mitigation is allowed, all wetlands to be retained shall be contained within designated open space areas shown in the Specific Plan.

2. All activities within jurisdictional wetlands shall be in accordance with the applicable Section 404 U.S. Army Corps of Engineers permit.

3. Development shall be planned and carried out in a manner that to the extent possible preserves wetlands and their functional value. Preservation of small wetlands isolated by development greatly diminishes its functional value and is therefore undesirable.

4. Natural area buffers will be provided around the periphery of constructed wetlands in order to maintain their value to wildlife. While the precise dimensions of these buffers will vary depending on the type of habitat buffered and adjoining land uses, the goal is that the buffers will average a minimum of 50 feet in width. These buffers shall be maintained in their natural state and landscaping activities such as watering, mowing, or planting ornamental species shall not be allowed. It is further intended that the construction of structures or roads within buffers be restricted. Construction of low-impact passive recreation facilities such as nature trails, waterfowl viewing areas, etc. is considered compatible within these buffers.

5. Temporary fencing shall be installed along the boundary of the wetland preserve areas prior to construction, grading, movement of material or machinery onto the site, or issuance of any construction permits for abutting properties. The fencing shall not be removed until construction activity is completed.

6. Passive recreation facilities, such as hiking or bicycle trails, shall be designed to avoid impacts to wetlands and shall be approved by appropriate state and federal agencies prior to construction when necessary.

7. No grading, planting of non-native vegetation, vegetation removal, structures, fences, dams, fills, ponds, or excavation shall occur within wetland preserve areas, except for specifically approved activities.

8. Where impacts to wetlands cannot be avoided or where preserved wetlands would be relatively small and isolated by development, compensation shall occur as required by the Army Corps of Engineers.

9. Where wetland habitat must be compensated, a mitigation plan will be prepared which sets forth the goals, objectives and procedures for accomplishing the mitigation. Each plan must establish criteria for judging the relative success of the

mitigation effort, set forth a monitoring plan and provide a mechanism for the long-term management of the created habitat.

10. Detailed wetland delineations shall be completed and verified by the U.S. Army Corps of Engineers for each property prior to its development.

NATURAL RESOURCES PRESERVATIONS POLICIES

1. Individual development projects, which include oak trees 6 4-inches dbh or larger (as indicated in the project arborist report), shall comply with the following measures:

a. An arborist report shall be prepared for the individual developments and included in the project application. The report shall include a description of the health and condition of the oak trees, and shall include recommendations to mitigate the impacts of project development.

b. Following review of the individual development application by the County Planning and Community Development Department, requirements shall be placed on the project which require oak tree preservation and include appropriate protection measures, or allow tree removal, with mitigation when justified. Oak trees which are removed, because they are dead; in poor health, create a substantial safety hazard or conflict with the construction of arterial roadways shall not require mitigation.

c. Improvement Plans for individual development projects shall implement measures to preserve oak trees. Easements or other restrictions to ensure preservation of oak trees may be required in Final Maps.

d. If building permit applications are submitted for lots with preserved oak trees and required mitigation measures are to be implemented during construction of the subdivision lots, then building permits shall be reviewed by the County Planning and Community Development Department and the County Department of Environmental Review and Assessment (DERA) as part of the plan check process.

2. All native oak trees 6 inches dbh or larger, except those that are specifically approved for removal, shall be preserved and protected by utilizing the following measures:

a. A circle with a radius measurement from the trunk of the tree to the tip of its longest limb constitutes the dripline protection area of each tree. The longest limb may not be cut back in order to change the dripline. The area beneath the dripline is critical portion of the root zone and defines the minimum protected area of each tree. Removing limbs which make up the dripline does not change the protected area.

b. Chain-link fencing or similar protective barrier shall be installed at least one foot

outside the driplines of the oak trees prior to initiating construction, in order to avoid damage to the tree canopies and root systems.

c. No signs, ropes, cables (except those which may be installed by a certified arborist to provide limb support) or any other items shall be attached to the oak trees. Small metallic numbering tags for the purpose of preparing tree reports and inventories shall be allowed.

d. No vehicles, construction equipment, mobile home/office, supplies, materials or facilities shall be driven, parked, stockpiled or located within the driplines of oak trees.

e. No grading (grade cuts or fills) shall be allowed within the driplines of oak trees.

f. Drainage patterns on the site shall not be modified so that water collects or stands within, or is diverted across, the dripline of any oak tree.

g. No mechanized trenching shall be allowed within the driplines of oak trees. If it is absolutely necessary to install underground utilities within the dripline of an oak tree, the utility line shall be bored and jacked under the supervision of a certified arborist.

h. The construction of impervious surfaces within the driplines of oak trees shall be stringently minimized. When it is absolutely necessary, porous materials shall be used and/or a piped aeration system shall be installed under the supervision of a certified arborist.

i. No sprinkler or irrigation system shall be installed in such a manner that sprays water or requires trenching within the driplines of oak trees. An above-ground drip irrigation system is recommended.

j. Landscaping beneath oak trees may include non-plant materials such as bark mulch, wood chips, boulders, etc. The only plant species which shall be planted within the driplines of oak trees are those which are tolerant of the natural semi-arid environs of the trees. A list of such drought-tolerant plant species is available from the Sacramento County Department of Environmental Review and Assessment (DERA). Limited drip irrigation approximately twice per summer is recommended for the understory plants.

3. Make every effort to protect and preserve non-oak native trees(excluding cottonwoods), including heritage (trees with a diameter at breast height, dbh, of 19 inches or greater) and/or landmark trees (as defined in the County Tree Ordinance). Native trees other than oaks which cannot be saved or are removed shall be replaced with in-kind species in accordance with established tree planting specifications and

established replacement/compensation ratio of one 15-gallon tree for every inch dbh of tree removed.

4. Development shall be planned and carried out to avoid impacts to special status species where possible. Where impacts are unavoidable, mitigation plans will be developed and implemented which reduce these impacts to a less than significant level. Where a special status species is listed as a threatened or endangered species by either the United States Fish and Wildlife Service and/or the California Department of Fish and Game, the mitigation plan shall be approved by the applicable agency. Where other mitigation measures required by this specific plan (i.e. wetlands mitigation) would also satisfactorily mitigate sensitive species impacts, such measures will satisfy this requirement.

CIRCULATION POLICIES

1. Thoroughfare, Arterial and Collector streets shown on the Specific Plan Diagram are approximate locations. Minor adjustments may be permitted in conjunction with review and approval of tentative subdivision maps and as specified in Section 11.0.

2. Local streets shall be constructed on a subdivision-by-subdivision basis within individual residential subdivisions. Thoroughfare and Arterial streets may be constructed in advance of residential subdivision development, as needed for access and public safety.

3. Bus shelters and turnouts, designed in accordance with County improvement standards, shall be located along thoroughfare and arterial streets at residential subdivision entrances, at commercial centers, and at public facilities to facilitate extension and use of public transit.

4. All streetscape on public and private streets, including sidewalks, pedestrian paths, bicycle lanes and landscaping, shall be designed and constructed in accordance with the cross sections included this Plan, and the Design Guidelines.

5. Sidewalks or pedestrian paths shall be provided on both sides of all streets, except where the County allows sidewalk construction on one side, only. Paths shall be separated from thoroughfare and arterial streets to the maximum extent possible. Intrusion upon the privacy of residential property shall be minimized.

6. Minor streets within residential subdivisions shall be designed to emphasize internal circulation and discourage through traffic and unsafe speeds. Minor streets should be designed with interconnected routes; excessively winding and dead-end streets are discouraged. Figure 7.7 illustrates discouraged and recommended examples of street patterns.

7. Pedestrian and bicycle paths shall be located within Thoroughfare, Arterial, and Collector street rights-of-way and in open space areas. Public access rights shall be guaranteed in all instances.

8. All residential developments shall be designed to provide convenient pedestrian and bicycle access to schools, parks, and open space areas.

9. Pedestrian and bicycle trails and pathways are encouraged within open space areas to the extent possible. Such facilities shall be located and designed to minimize disturbance of important natural features.

10. No streets other than those shown on the Specific Plan Land Use Diagram shall cross or be constructed upon a Drainage Parkway or other open space area identified on the Land Use Diagram.

11. Residential streets adjacent to Drainage Parkways should be designed to allow surveillance of these open space features from the street.

12. Plan for the future use of the Central California Traction Railroad corridor as a public transportation right-of-way, including fixed line bus service.

13. The street pattern within urban residential areas should be simple in design, and should be interconnected, linking neighborhoods and providing multiple access routes which converge on commercial areas, parks and transit stops.

14. Support the acquisition of parcels of land that may be needed in the future for any transportation purpose when the opportunity arises through conditions of approval, dedication, sale or donation.

15. The project proponents should work with County Transportation staff to identify alternative forms of traffic control (such as roundabouts) on the minor roadways internal to the project.

16. Safe and convenient crossings of major roads should be provided for pedestrian and bicyclists.

17. The Plan shall include a network of interconnected bicycle and pedestrian facilities.

18. The Plan area should participate in a Transportation Management Association.

19. Encourage commercial buildings to be located near adjacent streets with parking in the rear.

20. Permit park and ride lots as joint use facilities within the commercial center of the planning area.

PUBLIC FACILITY AND SERVICES POLICIES

School Facilities:

1. Provide the number, type, design, and location of school facilities consistent with the Elk Grove Unified School District's Master Plan.

2. New elementary schools sites should be designated adjacent to existing or proposed neighborhood or community park sites and designed to promote joint use of both facilities.

3. Provide bikeways or pedestrian facilities to link schools sites with residential areas.

Law Enforcement:

1. Residential-based surveillance and law enforcement notification programs, such as Neighborhood Watch, shall be encouraged.

2. All land uses in the Plan area should be designed to facilitate surveillance and access by law enforcement equipment and personnel.

3. Streets shall be designed to ensure that emergency response is not impaired.

Fire Protection

1. Fire stations shall be located, designed and oriented in a manner harmonious with adjoining land use.

2. Ensure adequate water flows to serve the Plan area with an adequate level of fire protection.

3. The provision of fire protection services and facilities within the Plan area should be at a level sufficient to address public health and safety needs.

Solid Waste Disposal:

1. Recycling of residential and commercial solid waste should be promoted and encouraged within the Plan Area.

2. Residential developments shall be designed to facilitate the use of automated solid waste collection trucks.

3. All residential projects shall be designed so that solid waste containers can be hidden from street view.

Library Service:

1. Encourage the provision of adequate library facilities in conveniently proximity to Plan area residents.

2. A branch library shall be accommodated within the Public Services site, if deemed appropriate by the County.

Park:

1. Whenever possible, park sites should be located adjacent topublic facilities, such as schools, libraries, and fire stations. Joint-use agreements should be encouraged. in such instances, recreation amenities, inlcuding play equipment, hsould be coordinated to minimize duplication.

2. Parks shall be located in the approximatel locations shown on the Specific Plan Map. Precise locations will be determined at the time of tentative subdivision map approval for each residential project.

3. Parks and open space areas shall be linked by a pedestrian and bicycle circulation system to the maximum extent feasible.

4. Wherever possible, parks should be bordered on at least two sides by streets in order to facilitate public access and surveillance.

5. Park facilities and sites shall be provided in conformance with the Southgate Recreation and Park District Master Plan.

6. Parks shall be designed, and facilities oriented, to minimize noise and visual impacts on adjoining residential lots.

7. Where parks are adjacent to Drainage Parkways, the park shall include pedestrian pathways which connect to the pathway in the Drainage Parkway.

8. Parks adjacent to Drainage Parkways shall include appropriate fencing or plant buffering to separate active recreation areas from the Drainage Parkway.

INFRASTRUCTURE POLICIES

Water Supply:

1. Annex developing portions of the North Vineyard Station planning area to Zone 40 of the Sacramento County Water Agency and the Sacramento County Water Maintenance District.

2. Insure a reliable supply of water to the North Vineyard Station planning area through the implementation of programs identified in the Zone 40 Master Plan.

3. Install and maintain public fire hydrants with adequate flow to serve the fire protection needs of all residents.

4. Building permits and improvement plans for proposed projects shall not be approved until a Public Infrastructure/Financing Plan has been adopted for the Plan area.

5. Development projects shall participate in the cost of constructing master infrastructure facilities. Determination of fair share costs, timing, and funding mechanisms for master infrastructure facilities shall be determined by the adoption of a Financing Plan for this Specific Plan area.

Sewer Service:

1. Annex developing portions of the North Vineyard Station planning area into the Sacramento County Sanitation District No. 1 and the Sacramento Regional County Sanitation District, prior to recordation of any final maps or approved improvements plans.

Storm Drainage:

1. Stormwater Detention Basins shall be designed to ensure public safety, shall be visually unobtrusive, and shall provide wildlife habitat. Basins shall comply with guidelines set forth in Section 6.0.

2. Public infrastructure, such as electrical substations, water wells, and sewer lift stations, shall be designed, located and maintained so that safety and nuisance factors, such as noise, light glare, and odors will not adversely impair nearby land uses.

Public Utility:

1. All new electrical and telecommunication facilities shall be installed underground, excluding primary transmission lines and substations. Undergrounding of existing overhead facilities should be promoted.

ENVIRONMENTAL IMPACT REPORT/ACKNOWLEDGMENTS

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COUNTY OF SACRAMENTO

OFFICE OF THE COUNTY COUNSEL

Inter-Department Correspondence

November 9, 2004

To: Chairman and Members
Board of Supervisors

From: Krista Whitman
Supervising Deputy

Subject: North Vineyard Station Specific Plan Findings
Agenda – November 10, 2004

Enclosed are proposed CEQA findings for the Final Supplemental EIR for the above matter.

If you have any questions, please feel free to contact me at 874-5100.

Krista Whitman
KRISTA WHITMAN
Supervising Deputy

Enclosure

cc: Robert Sherry
Joyce Horizumi

CEQA FINDINGS OF FACT

OF THE BOARD OF SUPERVISORS
OF SACRAMENTO COUNTY

for the

NORTH VINEYARD STATION
SPECIFIC PLAN AMENDMENT, FINANCING PLAN,
WATER TREATMENT FACILITIES

VINEYARD POINT
REZONE, VESTING TENTATIVE SUBDIVISION MAP, LARGE LOT
TENTATIVE SUBDIVISION MAP, AND SPECIAL DEVELOPMENT PERMIT

VINEYARD CREEK
REZONE, VESTING TENTATIVE SUBDIVISION MAP,
AND LARGE LOT TENTATIVE SUBDIVISION MAP

Control Numbers: 03-CPB-0082, 02-PWE-0532, 04-PWE-0144, 02-RZB-SDB-SVB-0293, 03-RZB-SVB-0385

November 10, 2004

I. INTRODUCTION

The final Supplemental Environmental Impact Report (Final SEIR) prepared for the North Vineyard Station Specific Plan Amendment, Financing Plan and Water Treatment Facilities; Vineyard Point Rezone, Vesting Tentative Subdivision Map, Large Lot Tentative Subdivision Map, and Special Development Permit; and Vineyard Creek Rezone, Vesting Tentative Subdivision Map, and Large Lot Tentative Subdivision Map (the "NVSSP amendment project"), addresses the potential impacts associated with land use, public facilities financing, public services, traffic and circulation, air quality, noise, biological resources, cultural resources, water supply, sewer service, and drainage and hydrology arising from the development of the NVSSP, and more specifically, the Vineyard Point and Vineyard Creek subdivisions of the Specific Plan, located in the south-central unincorporated area of Sacramento County, at the western edge of the Vineyard community. These findings, as well as the accompanying statement of overriding considerations, have been prepared to comply with the requirements of the California Environmental Quality Act ("CEQA") (Pub. Resources Code, § 21000 et seq.), the CEQA Guidelines (Cal. Code Regs. Tit. 14, § 15000 et seq.), and the Planning and Zoning Law (Gov. Code, § 65000 et seq.).

II. PROJECT DESCRIPTION

The proposed NVSSP amendment project is a request for:

- **Specific Plan Amendments** to the land use designations for the NVSSP to accommodate stormwater detention and drainage facilities, internal street and park site modifications, and addition of a water treatment facility. Minor internal residential density adjustments result in a slight change in overall holding capacity, which increases from 5,732 dwelling units to 6,063 dwelling units;

- **Water Treatment and Storage Facilities** for the North Vineyard Water System;

- **A Rezone, Vesting Tentative Subdivision Map and Large Lot Tentative Subdivision Map** for the Vineyard Creek Subdivision within the NVSSP area;

- **A Rezone, Vesting Tentative Subdivision Map, Large Lot Tentative Subdivision Map, and Special Development Permit** for the Vineyard Point Subdivision within the NVSSP area; and

- **Public Facilities Financing Plan** for the NVSSP.

(Final SEIR, pp. 3-1—3-19.)

The project site is located in the south-central unincorporated area of Sacramento County, at the western edge of the Vineyard community. The City of Sacramento's Central Business District is located approximately eleven miles to the northwest of the project site. The Plan Area encompasses 1,590± acres of the Vineyard Community Planning Area. The Plan Area is bounded by Florin Road to the north, Gerber Road to the South, the northerly extension of the Vineyard Road on the east, and generally by Elder Creek's north and south forks. Bradshaw Road transects the Plan Area in a north/south alignment. The 6-acre water treatment facility site is located on the east side of the Central California Traction Railroad tracks, approximately 100 feet north of Gerber Road. The Vineyard Creek property is located on the south side of Florin Road, 1,300 feet east of Hedge Avenue, in the Vineyard community. The Vineyard Point property is generally located on the north side of Gerber Road and the east side of the Central California Traction Railroad, in the Vineyard community. (Final SEIR, pp. 3-20—3-21.)

III. BACKGROUND

The NVSSP area consists of approximately 1,595± acres. The Specific Plan provides a comprehensive plan for development of an area that was designated for Urban Growth by the Sacramento County General Plan. It refines the policy direction provided by the General Plan and replaces or supplements the Zoning Map and regulations. The Plan includes development standards and zoning to address unique situations within the Plan area, sets forth a Land Use Diagram for future development, and contains programs for the provision of public facilities. The Plan thus serves as a policy and regulatory document, with policy direction and project development concepts consistent with the County's General Plan. The current project is an amendment to the previously approved 1998 plan. (Final SEIR, p. 4-1.)

The Sacramento County Board of Supervisors certified the Final Master EIR for the North Vineyard Station Specific Plan ("NVSSP Master EIR") on August 12, 1998, and subsequently approved the NVSSP itself on November 4,1998. (Final SEIR, p. 4-1.)

The Master EIR for the NVSSP, prepared pursuant to CEQA Guidelines section 15175, identified significant and unavoidable impacts associated with traffic and circulation, regional and local air quality, traffic noise impacts to existing noise receptors, cumulative loss of wildlife habitats, and cumulative groundwater decline (interim impact). (NVSSP Master EIR, pp. 1.1—1.3.) The Master EIR also found that the project would create significant, but mitigable effects in the areas of land use, short-term, construction-related air quality impacts, traffic noise impacts to future development, hydrology and flooding, water supply (long term), biological resources, cultural resources, and hazardous materials. (NVSSP Master EIR, pp. 1.3—1.7.)

The Supplemental EIR for the NVSSP amendment project updates the previous Master EIR. A Notice of Preparation (NOP) for the Draft Supplemental EIR ("DSEIR") was issued to reviewing agencies and interested persons on March 17, 2004. The DSEIR addresses potential impacts associated with land use, public facilities financing, public services, traffic and circulation, air quality, noise, biological resources, cultural resources, water supply, sewer service, and drainage and hydrology. (DSEIR, pp. 1-1.) The DSEIR has identified project-related impacts associated with air quality as significant and unavoidable. Traffic and circulation, noise, biological resources, and cultural resources were found to be potentially significant, but could be reduced to a less than significant level through adoption of recommended mitigation measures. Impacts associated with land use, public services, public facilities financing, water supply, drainage and hydrology, and sewer service are considered less than significant. (DSEIR, p.2-1.)

The information contained in the Final Supplemental EIR ("FSEIR," which also includes the DSEIR) in conjunction with the prior Final Master EIR for the NVSSP will be used as the environmental documentation for the current project application.

IV. RECORD OF PROCEEDINGS

The record of proceedings for the Board's decision on the NVSSP amendment project consists of the following documents, at a minimum:

- The Draft SEIR for the NVSSP amendment project;
- All comments received on the DSEIR;
- The Final SEIR for the NVSSP amendments project;
- The NOP and all other public notices issued by the County in conjunction with the NVSSP;
- The Draft EIR for the NVSSP (July 1997);
- The Final EIR for the NVSSP (February 1998), including all comments submitted by agencies or members of the public during the 45-day comment period on the Draft EIR;
- The mitigation monitoring and reporting programs for the original and amended NVSSP project;
- All findings and resolutions adopted by the Board in connection with the original NVSSP project, and all documents cited or referred to therein;

- All reports, studies, memoranda, maps, staff reports, or other planning documents relating to the NVSSP Project prepared by the County, consultants to the County, or responsible or trustee agencies with respect to the County's compliance with the requirements of CEQA and with respect to the County's action on the NVSSP;

- All documents submitted to the County (including the Planning Commission and Board of Supervisors) by other public agencies or members of the public in connection with the NVSSP, up through the close of the public hearing the NVSSP project;

- Any minutes and/or verbatim transcripts of all information sessions, public meetings, and public hearings held by the County in connection with the NVSSP;

- Any documentary or other evidence submitted to the County at such information sessions, public meetings and public hearings;

- The Sacramento General Plan and all environmental documents prepared in connection with the 1993 adoption of the General Plan;

- All resolutions adopted by the County regarding the NVSSP, and all staff reports, analyses, and summaries related to the adoption of those resolutions;

- Matters of common knowledge to the County, including, but not limited to Federal, State, and local laws and regulations;

- Any documents expressly cited in these findings, in addition to those cited above; and

- Any other materials required for the record of proceedings by Public Resources Code section 21167.6, subdivision (e).

The official custodian of the record is the Clerk of the Sacramento County Board of Supervisors, 700 H Street, Sacramento, California 95814.

V. FINDINGS REQUIRED UNDER CEQA

Public Resources Code section 21002 provides that "public agencies should not approve projects as proposed if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of such projects[.]" The same statute states that the procedures required by CEQA "are intended to assist public agencies in systematically identifying both the significant effects of

proposed projects and the feasible alternatives or feasible mitigation measures which will avoid or substantially lessen such significant effects." Section 21002 goes on to state that "in the event [that] specific economic, social, or other conditions make infeasible such project alternatives or such mitigation measures, individual projects may be approved in spite of one or more significant effects thereof."

The mandate and principles announced in Public Resources Code section 21002 are implemented, in part, through the requirement that agencies must adopt findings before approving projects for which EIRs are required. (See Pub. Resources Code, § 21081, subd. (a); CEQA Guidelines, § 15091, subd. (a).) For each significant environmental effect identified in an EIR for a proposed project, the approving agency must issue a written finding reaching one or more of three permissible conclusions. The first such finding is that "[c]hanges or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the final EIR." (CEQA Guidelines, § 15091, subd. (a)(1).) The second permissible finding is that "[s]uch changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency." (CEQA Guidelines, § 15091, subd. (a)(2).) The third potential conclusion is that "[s]pecific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the final EIR." (CEQA Guidelines, § 15091, subd. (a)(3).) Public Resources Code section 21061.1 defines "feasible" to mean "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social and technological factors." CEQA Guidelines section 15364 adds another factor: "legal" considerations. (See also Citizens of Goleta Valley v. Board of Supervisors ("Goleta II") (1990) 52 Cal.3d 553, 565.)

The concept of "feasibility" also encompasses the question of whether a particular alternative or mitigation measure promotes the underlying goals and objectives of a project. (City of Del Mar v. City of San Diego (1982) 133 Cal.App.3d 410, 417.) "'[F]easibility' under CEQA encompasses 'desirability' to the extent that desirability is based on a reasonable balancing of the relevant economic, environmental, social, and technological factors." (Id.; see also Sequoyah Hills Homeowners Assn. v. City of Oakland (1993) 23 Cal.App.4th 704, 715; Sierra Club v. County of Napa (2004) 121 Cal.App.4th 1490, 1507-1508 (the failure to meet project objectives can be sufficient evidence demonstrating infeasibility of an alternative).) The CEQA Guidelines do not define the difference between "avoiding" a significant environmental effect and merely "substantially lessening" such an effect. The County must therefore glean the meaning of these terms from the other contexts in which the terms are used. Public Resources Code section 21081, on which CEQA Guidelines section 15091 is based, uses the term "mitigate" rather than "substantially lessen." The CEQA Guidelines therefore equate

"mitigating" with "substantially lessening." Such an understanding of the statutory term is consistent with the policies underlying CEQA, which include the policy that "public agencies should not approve projects as proposed if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of such projects." (Pub. Resources Code, § 21002.)

For purposes of these findings, the term "avoid" refers to the effectiveness of one or more mitigation measures to reduce an otherwise significant effect to a less than significant level. In contrast, the term "substantially lessen" refers to the effectiveness of such measure or measures to substantially reduce the severity of a significant effect, but not to reduce that effect to a less than significant level. These interpretations appear to be mandated by the holding in Laurel Hills Homeowners Association v. City Council (1978) 83 Cal.App.3d 515, 519-521, in which the Court of Appeal held that an agency had satisfied its obligation to substantially lessen or avoid significant effects by adopting numerous mitigation measures, not all of which rendered the significant impacts in question less than significant.

Although CEQA Guidelines section 15091 requires only that approving agencies specify that a particular significant effect is "avoid[ed] *or* substantially lessen[ed]," these findings, for purposes of clarity, in each case will specify whether the effect in question has been reduced to a less than significant level, or has simply been substantially lessened but remains significant.

Moreover, although section 15091, read literally, does not require findings to address environmental effects that an EIR identifies as merely "potentially significant," these findings will nevertheless fully account for all such effects identified in the Final EIR.

CEQA requires that the lead agency adopt mitigation measures or alternatives, where feasible, to substantially lessen or avoid significant environmental impacts that would otherwise occur. Project modification or alternatives are not required, however, where such changes are infeasible or where the responsibility for modifying the project lies with some other agency. (CEQA Guidelines, § 15091, subd. (a), (b).)

With respect to a project for which significant impacts are not avoided or substantially lessened, a public agency, after adopting proper findings, may nevertheless approve the project if the agency first adopts a statement of overriding considerations setting forth the specific reasons why the agency found that the project's "benefits" rendered "acceptable" its "unavoidable adverse environmental effects." (CEQA Guidelines, §§ 15093, 15043, subd. (b); see also Pub. Resources Code, § 21081, subd. (b).) The California Supreme Court has stated, "[t]he wisdom of approving . . . any development project, a delicate task which requires a balancing of interests, is necessarily left to the sound discretion of the local officials and their constituents who are responsible for such decisions. The law as

we interpret and apply it simply requires that those decisions be informed, and therefore balanced." (Goleta II, 52 Cal.3d at p. 576.)

These findings constitute the Board of Supervisors' best efforts to set forth the evidentiary and policy bases for its decision to approve the project in a manner consistent with the requirements of CEQA. To the extent that these findings conclude that various proposed mitigation measures outlined in the Final EIR are feasible and have not been modified, superseded or withdrawn, the County hereby binds itself to implement these measures. These findings, in other words, are not merely informational, but rather constitute a binding set of obligations that will come into effect when the Board adopts a resolution approving the project.

VI. MITIGATION MONITORING AND REPORTING PROGRAM

A new Mitigation Monitoring and Reporting Program ("MMRP") was prepared for the NVSSP amendment project, and was approved by the Board of Supervisors by the same resolution that has adopted these findings. (See Pub. Resources Code, § 21081.6, subd. (a)(1); CEQA Guidelines, § 15097.) The County will use the MMRP to track compliance with project mitigation measures. The MMRP will remain available for public review during the compliance period. (Final SEIR, pp. 2-3—2-22, 2-25—2-44.)

VII. SIGNIFICANT EFFECTS AND MITIGATION MEASURES

The Draft SEIR identified a single significant, unavoidable impact in connection with air quality. For reasons set forth in Section VIII, *infra*, however, the Board has determined that the significant, unavoidable effects of the project are outweighed by overriding economic, social, and other considerations. Traffic and circulation, noise, biological resources, and cultural resources were found to be potentially significant, but could be reduced to a less than significant level through adoption of recommended mitigation measures.

A. AIR QUALITY

Impact: Specific Plan Buildout. The previous EIR found that the Specific Plan long-term emissions (ROG, NOX, PM10) from vehicle traffic and stationary sources would result in **significant unavoidable** impacts to regional air quality. (Final SEIR, p. 8-1.)

Finding: Through the use of the following mitigation measures, the proposed project has been designed in a manner that substantially lessens, but does not avoid, the significant unavoidable impact associated with long-term emissions. No further feasible mitigation is available to render the effect less-than-significant.

Impact: Vineyard Creek and Vineyard Point Subdivisions. The Sacramento Metropolitan Air Quality District (SMAQMD) commented that, due to their size, the Vineyard Creek and Vineyard Point projects would directly or indirectly generate air emissions exceeding the District's Thresholds of significance. Therefore, construction related air quality impacts are considered significant. Short-term construction activity involving the disturbance of 10 to 25 acres per day can be accomplished without violating PM_{10} emissions standards though strict adherence to recommended mitigation measures. However, it is unrealistic to assume strict application of dust mitigation measures for the widespread development that is slated to occur. Therefore dust generation during construction activities is expected to exceed the PM_{10} threshold and constitutes a ***significant impact***. (Final SEIR, pp. 8-1, 8-6—8-7.)

Finding: Through the use of the following mitigation measures, the proposed project has been designed in a manner that substantially lessens, but does not avoid, the significant unavoidable impact associated with long-term emissions. No further feasible mitigation is available to render the effect less-than-significant.

Mitigation Measures for all air quality impacts:

AQ-1. The project shall provide a plan for approval by the County of Sacramento and SMAQMD demonstrating that the heavy-duty (>50 horsepower) off-road vehicles to be used in the construction project, including owned, leased and subcontractor vehicles, will achieve a project wide fleet average 20 percent NOx reduction and 45 percent particulate reduction compared to the most recent CARB fleet average.

AQ-2. The project representative shall submit to the County of Sacramento and SMAQMD a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 horsepower, that will be used an aggregate of 40 or more hours during any portion of the construction project. The inventory shall include the horsepower rating, engine production year, and hours of use or fuel throughput for each piece of equipment. The inventory shall be updated and submitted monthly throughout the duration of the project, except that an inventory shall not be required for any 30-day period in which no construction activity occurs. At least 48 hours prior to the use of subject heavy-duty off-road equipment, the project representative shall provide SMAQMD with the anticipated construction timeline including start date, and name and phone number of the project manager and on-site foreman.

AQ-3. The project shall ensure that emissions from all off-road diesel powered equipment used on the project site do not exceed 40 percent opacity for more than three minutes in any one hour. Any equipment found to exceed 40 percent opacity shall be repaired immediately, and the County of Sacramento and SMAQMD shall be notified within 48 hours of identification of non-compliant equipment. A visual survey of all in-operation equipment shall be made at least weekly, and a monthly summary of the visual

survey results shall be submitted throughout the duration of the project, except that the monthly summary shall not be required for any 30-day period in which no construction activity occurs. The monthly summary shall include the quantity and type of vehicles surveyed as well as the dates of each survey. The SMAQMD and/or other officials may conduct periodic site inspections to determine compliance. Nothing in this section shall supercede other SMAQMD or state rules or regulations.

AQ-4. The following construction-related measures apply to construction activities within the Specific Plan area:

a. Water exposed, graded surfaces at least two times per day and if possible, keep soil moist at all times.
b. Properly maintain diesel and/or gas fueled construction equipment.
c. Water haul roads at least two times per day.
d. Use low VOC architectural coatings

AQ-5. Comply with the adopted AQ-15 Plan, which is included in Section 7.6 (Travel Demand Reduction Measures) of the NVSSP text.

AQ-7. No wood burning appliances shall be permitted in new construction within the Specific Plan area. Fireplaces and similar "wood stoves" shall be fueled by natural gas or propane.

(Final SEIR, pp. 8-8—8-9.)

B. TRAFFIC AND CIRCULATION

Impact: Phase 1A. Based on the roadway and intersection analysis, the addition of Phase 1A trips will cause or contribute to deficiencies at the following study locations under Year 2002 conditions:

STUDY ROADWAYS
- S. Watt Avenue –(North of SR 16);
- S. Watt Avenue –(SR 16 to Elder Creek Road);
- Elk Grove-Florin Road –(Florin Road to Gerber Road);
- Gerber Road –(Elk Grove-Florin Road to Bradshaw Road);

STUDY INTERSECTIONS
- SR 16/S. Watt Avenue;
- SR 16/Bradshaw Road; and
- Elder Creek Road/S. Watt Avenue.

(Final SEIR, p. 7-21.)

Finding: Changes or alterations have been required in, or incorporated into, the NVSSP amendment project that avoid the significant environmental effect as identified in the Final EIR.

Mitigation Measures:

TC-1. S. Watt Avenue (North of SR 16) –Widening this segment from two to four lanes will improve operations to LOS D.

TC-2. S. Watt Avenue (SR 16 to Elder Creek Road) – Widening this segment from two to four lanes will improve operations to LOS A.

TC-3. Elk Grove-Florin Road (Florin Road to Gerber Road) – Widening this segment from two to four lanes will improve operations to LOS B.

TC-4. Gerber Road (Elk Grove-Florin Road to Bradshaw Road) – Improving the roadway cross-section to include minimum 12-foot travel lanes and 6-foot shoulders will improve operations to LOS C.

TC-5. SR 16/S. Watt Avenue – Widening the northbound and southbound approaches to include an additional through lane will improve operations to LOS D during the a.m. and p.m. peak hours. This improvement is consistent with the recommended widening of S. Watt Avenue to four lanes between Elder Creek Road and SR 16.

TC-6. SR 16/Bradshaw Road – Widening the eastbound approach to include dual left-turn lanes will improve operations to LOS E during the a.m. peak hour.

Evaluation of other Public Facility Financing Plans revealed that the Sunridge Public Facility Financing Plan includes improvements at the State Route 16 and Bradshaw Road intersection. The proposed improvements are expansion of the intersection to accommodate two left turn lanes, two through lanes and one right turn lane on all approaches. It is likely that right-of-way will need to be acquired to provide the proposed improvements. The improvement is included in Phase 1 on the Sunridge Public Facility Financing Plan, which would mean that the improvement would be constructed in the next 5 years. With those improvements, the intersection level of service would improve to LOS D in the a.m. peak hour and LOS C in the p.m. peak hour, with build out of Phase 1A of the North Vineyard Station Specific Plan.

TC-7. Elder Creek Road/S. Watt Avenue – Installing a traffic signal and widening each approach to include an exclusive left-turn lane and a shared through/right-turn lane will improve operations to LOS D during the p.m. peak hour.

(Final SEIR, pp. 7-21—7-23.)

Impact: Phase 1B. Based on the roadway and intersection analysis, the addition of Phase 1B trips will cause or contribute to deficiencies at the following study locations under Year 2005 conditions:

STUDY ROADWAYS
- None.

STUDY INTERSECTIONS
- SR 16/S. Watt Avenue;
- Florin Road/Excelsior Road; and
- Gerber Road/Excelsior Road.

(Final SEIR, p. 7-37.)

Finding: Changes or alterations have been required in, or incorporated into, the NVSSP amendment project that avoid the significant environmental effect as identified in the Final EIR.

Mitigation Measures:

TC-8. SR 16/S. Watt Avenue – Widening the eastbound and westbound approaches to include an exclusive left-turn lane, a through lane, and a shared through/right-turn lane will improve operations to LOS E and D during the a.m. and p.m. peak hours, respectively.

Subsequent to the publishing of the traffic analysis, the County of Sacramento moved forward a project to widen South Watt Avenue from State Route 16 to Kiefer Boulevard to five lanes. The project includes the State Route 16 and South Watt Avenue intersection. The intersection improvement includes an additional left turn lane and through lane on the southbound approach and one new left turn lane and two new through lanes on the northbound approach. The improvement is planned to be completed by 2006. With those improvements and Mitigation Measure TC-8, an additional through lane on the eastbound and westbound approaches, the intersection level of service3 would improve to LOS C in both the a.m. and p.m. peak hours, with build out of Phase 1A and 1B of the North Vineyard Station Specific Plan.

TC-9. Florin Road/Excelsior Road – Installing a traffic signal and widening each approach to include an exclusive left-turn lane and a shared through/right-turn lane will improve operations to LOS C and B during the a.m. and p.m. peak hours, respectively.

TC-10. Gerber Road/Excelsior Road – Installing a traffic signal and widening each approach to include an exclusive left-turn lane and a shared through/right-turn lane will improve operations to LOS B and A during the a.m. and p.m. peak hours, respectively.

(Final SEIR, pp. 7-37—7-38.)

Additional Discussion: The California State Department of Transportation ("Caltrans") asked whether further improvements could be implemented which would raise the Level of Service (LOS) at the Watt Avenue and Bradshaw Road intersections of SR16 to LOS D. Caltrans further commented that because the State standard for intersection LOS is LOS D, Mitigation Measures TC-6 and TC-8 appear to be inadequate, as they do not improve LOS at the Bradshaw Road/SR-16 and Watt Avenue/SR-16 intersections to LOS D. (Final SEIR, p. 17-6.)

The County Department of Transportation's ("DOT's") response is as follows:

> Evaluation of other Public Facility Financing Plans revealed that the Sunridge Public Facility Financing Plan includes improvements at the State Route 16 and Bradshaw Road intersection. The proposed improvements are expansion of the intersection to accommodate two left turn lanes, two through lanes and one right turn lane on all approaches. It is likely that right-of-way will need to be acquired to provide the proposed improvements. The improvement is included in Phase 1 on the Sunridge Public Facility Financing Plan, which would mean that the improvement would be constructed in the next 5 years. With those improvements, the intersection level of service would improve to LOS D in the a.m. peak hour and LOS C in the p.m. peak hour, with build out of Phase 1A of the North Vineyard Station Specific Plan.
>
> Subsequent to the publishing of the traffic analysis, the County of Sacramento moved forward a project to widen South Watt Avenue from State Route 16 to Kiefer Boulevard to five lanes. The project includes the State Route 16 and South Watt Avenue intersection. The intersection improvement includes an additional left turn lane and through lane on the southbound approach and one new left turn lane and two new through lanes on the northbound approach. The improvement is planned to be completed by 2006. With those improvements and Mitigation Measure TC-8, an additional through lane on the eastbound and westbound approaches, the intersection level of service3 would improve to LOS C in both the a.m. and p.m. peak hours, with build out of Phase 1A and 1B of the North Vineyard Station Specific Plan.

(Final SEIR, pp. 17-6—17-8.)

Caltrans also asked whether the Sacramento County General Plan shows the future outlook for SR16 through this area to eventually become a six-lane roadway facility with 6x6 type intersections, and asked whether the County shouldn't participate in an assessment to consider the feasibility of larger intersection configurations, similar to those at Watt Avenue and Fair Oaks Boulevard. (Final SEIR, p. 17-7.)

The County DOT's response was as follows:

> South Watt Avenue, Bradshaw Road and State Route 16 are shown as 6-lane thoroughfares in the Sacramento County General Plan. The intersections of State Route 16 and South Watt Avenue and State Route 16 and Bradshaw Road would be 6x6 intersections. According to the Sacramento County Standard Plans, a 6x6 intersection includes two left turn lanes, three through lanes and one right turn lane on each approach. The intent of the County of Sacramento would be to acquire right-of-way and install roadway improvements consistent with standards.

(Final SEIR, p. 17-7.)

Additionally, Caltrans asked whether sufficient right-of-way exists at the Watt Avenue/SR-16 and Bradshaw Road/SR-16 intersections for additional improvements beyond the TC-6 and TC-8 mitigation. The County DOT responded that "[s]ufficient right-of-way does not currently exist to implement full 6x6 standards at either the State Route 16 and South Watt Avenue and State Route 16 and Bradshaw Road intersections." (Final SEIR, p. 17-8.)

Impact: Year 2010 Conditions (50% Buildout). The daily volumes were compared to the roadway capacity thresholds. The addition of project trips will result in a deficiency at the following study roadway segments:

- S. Watt Avenue (North of SR 16); and
- Elk Grove-Florin Road (Gerber Road to Calvine Road)

(Final SEIR, p. 7-43.)

Finding: Changes or alterations have been required in, or incorporated into, the NVSSP amendment project that avoid the significant environmental effect as identified in the Final EIR.

Mitigation Measures:

TC-11. S. Watt Avenue (North of SR 16) – Widening this segment from four to six lanes will improve operations to LOS D.

TC-12. Elk Grove-Florin Road (Gerber Road to Calvine Road) – Widening this segment from four to six lanes will improve operations to LOS B.

(Final SEIR, p. 7-43.)

Impact: Year 2015 Conditions (Cumulative). Based on the roadway and intersection analysis, buildout of the NVSSP will cause or contribute to deficiencies at the following study locations under Year 2015 conditions:

STUDY ROADWAYS
- Florin Road (West of S. Watt Avenue);
- Florin Road (S. Watt Avenue to Bradshaw Road);
- S. Watt Avenue (North of SR 16);
- S. Watt Avenue (SR 16 to Elder Creek Road);
- Elk Grove-Florin Road (Gerber Road to Calvine Road); and
- Bradshaw Road (Elder Creek Road to Florin Road).

STUDY INTERSECTIONS
- SR 16/S. Watt Avenue;
- SR 16/Bradshaw Road;
- Elder Creek Road/Bradshaw Road;
- Florin Road/Elk Grove-Florin Road; and
- Florin Road/Bradshaw Road.

(Final SEIR, p. 7-59—7-60.)

Finding: Changes or alterations have been required in, or incorporated into, the NVSSP amendment project that avoid the significant environmental effect as identified in the Final EIR.

Mitigation Measures:

TC-13. Florin Road (West of S. Watt Avenue) – Widening this segment from two to four lanes will improve operations to LOS A.

TC-14. Florin Road (S. Watt Avenue to Bradshaw) – Widening this segment from two to four lanes will improve operations to LOS A.

TC-15. S. Watt Avenue (North of SR 16) – Widening this segment from four to six lanes will improve operations to LOS D.

TC-16. S. Watt Avenue (SR 16 to Elder Creek Road) – Widening this segment from four to six lanes will improve operations to LOS C.

TC-17. Elk Grove-Florin Road (Gerber Road to Calvine Road) – Widening this segment from four to six lanes will improve operations to LOS C.

TC-18. Bradshaw Road (Elder Creek Road to Florin Road) – Widening this segment from four to six lanes will improve operations to LOS B.

TC-19. SR 16/S. Watt Avenue – Widening the southbound approach to include dual left-turn lanes will result in less than a 0.05 increase in the V/C ratio during the p.m. peak hour.

TC-20. SR 16/Bradshaw Road – Widening the northbound and southbound approaches to include two exclusive left turn lanes, two through lanes and a shared through/right-turn lane will result in less than a 0.05 increase in the V/C ratio during the a.m. and p.m. peak hours.

TC-21. Elder Creek Road/Bradshaw Road – Widening the northbound and southbound approaches to include a third through lane will improve operations to LOS D during the a.m. peak hour and LOS C during the p.m. peak hour. This improvement is consistent with the recommended widening of Bradshaw Road to six lanes between Elder Creek Road and Florin Road.

TC-22. Florin Road/Elk Grove-Florin Road – Widening the northbound and southbound approaches to include a third through lane will improve operations to LOS E during the p.m. peak hour.

TC-23. Florin Road/Bradshaw Road – Widening the northbound and southbound approaches to include a third through lane and widening the eastbound approach to include a second exclusive left-turn lane will improve operations to LOS E during the a.m. peak hour. This improvement is consistent with the recommended widening of Florin Road to four lanes between Watt Avenue and Bradshaw Road and with the recommended widening of Bradshaw Road to six lanes between Elder Creek Road and Florin Road.

(Final SEIR, pp. 7-60—7-62.)

C. NOISE

Impact: Vineyard Creek Subdivision. Residences proposed nearest to Florin Road and Waterman Road would be exposed to future traffic noise levels that exceed the 60 dB Ldn Sacramento County Noise Element Standard. This impact is considered significant. (Final SEIR, p. 9-16.)

Finding: Changes or alterations have been required in, or incorporated into, the NVSSP amendment project that avoid the significant environmental effect as identified in the Final EIR.

Mitigation Measure:

NO-1. A 7-foot tall property line barrier along Florin Road and a 6-foot tall property line barrier along Waterman Road shall be constructed. Sufficient barrier wrap should be provided as shown in Plate NS-1 [of the SEIR]. (Final SEIR, p. 9-16.)

Impact: Vineyard Point Subdivision. Residences proposed nearest to Bradshaw Road and Gerber Road would be exposed to future traffic noise levels that exceed the 60 dB Ldn Sacramento County Noise Element Standard. This impact is considered significant. (Final SEIR, p. 9-22.)

Finding: Changes or alterations have been required in, or incorporated into, the NVSSP amendment project that avoid the significant environmental effect as identified in the Final EIR.

Mitigation Measures:

NO-2. A 9-foot tall property line barrier along Bradshaw Road and an 8-foot tall property line barrier along Gerber Road shall be constructed. Sufficient barrier wrap should be provided as shown in Plate NS-2 of the EIR.

NO-3. STC-30 windows shall be installed in the second floor of the first row of houses that are adjacent to Bradshaw Road. In these houses, only second floor windows with a direct view of Bradshaw Road need to be upgraded.

(Final SEIR, pp. 9-22—9-23.)

Impact: Water Treatment Facility and Well Sites. Based upon the noise level measurement data, the predicted noise level at the backyard of the nearest residence to the water treatment facility is 53 dB L50. This level exceeds the Sacramento County hourly noise criteria of 50 dB L50 for daytime noise and the 45 dB L50 criteria for nighttime noise. Since the booster pumps are expected to operate during the nighttime hours, it is recommended that noise control measures, which will reduce overall pump noise levels by a minimum of 8 dBA, be included in the project design. The predicted unmuffled exhaust noise level with the emergency generator in operation is predicted to be 85 dBA at the backyard of the nearest residence. Assuming that the generator operates continually for one half of an hour while being exercised, the hourly L50 (sound level not to be exceeded 30 minutes of the hour) is 82 dBA. This level would exceed the daytime

and nighttime noise level criteria of 50 dBA L50 and 45 dBA L50, respectively. (Final SEIR, p. 9-27.)

Finding: Changes or alterations have been required in, or incorporated into, the NVSSP amendment project that avoid the significant environmental effect as identified in the Final EIR.

Mitigation Measures:

NO-4. The water treatment facility should have 7-foot tall property line barriers at the adjacent residential property lines. In addition to the solid barriers, the pumps should be housed in concrete buildings with acoustical louvers/silencers and weather stripping around the doors. The louvers/silencers must provide a minimum insertion loss of 10-15 dB at the 125 Hz through 1000 Hz frequency ranges.

NO-5. A muffler such as a Vibron brand residential muffler should be fitted on the exhaust stack at the water treatment facility in order to provide adequate noise reduction to meet the Sacramento County noise standards.

NO-6. Remote well (Pump) sites should have 7-foot tall property line barriers at the adjacent residential property lines. In addition to the solid barriers, the pumps should be housed in concrete buildings with acoustical louvers/silencers and weather stripping around the doors. The louvers/silencers must provide a minimum insertion loss of 10-15 dB at the 125 Hz through 1000 Hz frequency ranges.

(Final SEIR, pp. 9-27—9-28.)

D. BIOLOGICAL RESOURCES

Impact: Vineyard Point. The proposed project will impact 9.02 acres of waters of the United States. The proposed mitigation will ensure that this impact is less-than-significant. (Final SEIR, p. 10-9.)

Finding: Changes or alterations have been required in, or incorporated into, the NVSSP amendment project that avoid the significant environmental effect as identified in the Final EIR.

Mitigation Measures:

BR-1. To compensate for the loss of wetlands and waters of the U.S., one of the following measures shall be implemented:

1. Preserve or create wetlands sufficient to result in no net loss of wetland acreage, and protect their required watersheds as is necessary for the continued function of wetlands on the project site. The appropriate hearing body shall determine that project design, configuration, and wetland management plan, provides reasonable assurances that the wetlands will be protected and their long-term ecological health maintained.

2. Where a Section 404 Permit has been issued by the Corps of Engineers, or an application has been made to obtain a Section 404 Permit, the Mitigation and Management Plan required by that permit or proposed to satisfy the requirements of the Corps for granting a permit may be submitted for purposes of satisfying paragraph 1, provided a no net loss of wetlands is achieved.

3. Pay to the County of Sacramento an amount based on a rate of $35,000 per acre for the unmitigated/uncompensated wetlands, which shall constitute mitigation for purposes of implementing adopted no net loss policies and CEQA required mitigation. The payment shall be collected by the Department of Planning and Community Development at the time of Improvement Plan or Building Permit approval, whichever occurs earlier, and deposited into the Wetlands Restoration Trust Fund.

(Final SEIR, pp. 10-9—10-10.)

Impact: Vineyard Point. Construction of the proposed project will remove 8.41 acres of vernal pools, habitat for the vernal pool fairy shrimp, vernal pool tadpole shrimp, and spadefoot toad. Removal of this habitat represents a significant impact. (Final SEIR, p. 10-10.)

Finding: Changes or alterations have been required in, or incorporated into, the NVSSP amendment project that avoid the significant environmental effect as identified in the Final EIR.

Mitigation Measure:

BR-2. The applicant shall compensate for impacts to vernal pool species through consultation with the U.S. Fish and Wildlife Service as outlined in Section 7 of the Endangered Species Act. The applicant shall implement all measures included in the Biological Opinion issued as a result of this consultation. (Final SEIR, p. 10-10.)

Impact: Vineyard Point. Project construction has the potential to disturb nesting activities of listed birds of prey. In addition, the proposed project will remove 181.8 acres of Swainson's Hawk foraging habitat upon completion. Impacts to Swainson's Hawk and other raptors are considered significant. (Final SEIR, p. 10-10.)

Finding: Changes or alterations have been required in, or incorporated into, the NVSSP amendment project that avoid the significant environmental effect as identified in the Final EIR.

Mitigation Measures:

BR-3. If construction is proposed during the raptor breeding season (February – August), a focused survey for migratory bird nests shall be conducted within 30 days prior to the beginning of construction activities by a qualified biologist in order to identify active nests on the site. If active nests are found, no construction activities shall take place within 500 feet of the nest until the young have fledged. Trees containing nests that must be removed as a result of project implementation shall be removed during the non-breeding season (September – January). If no active nests are found during the focused survey, no further mitigation will be required.

BR-4. To mitigate for the loss of 181.8 acres of Swainson's hawk foraging habitat, prior to the approval of Improvement Plans or building permits, or recordation of Final Subdivision Map, whichever occurs first, the applicant shall perform one of the following:

1. The project proponent shall preserve 90.9 acres (0.50 acre for each acre lost) of similar habitat within a 10-mile radius of the project site. This land shall be protected through fee title or conservation easement (acceptable to the California Department of Fish and Game).

2. The project proponent shall, to the satisfaction of the California Department of Fish and Game, prepare and implement a Swainson's hawk mitigation plan that will include preservation of Swainson's hawk foraging habitat.

3. The project proponent shall submit payment of a Swainson's hawk impact mitigation fee per acre impacted to the Department of Planning and Community Development in the amount as set forth in Chapter 16.130 of the Sacramento County Code as such may be amended from time to time and to the extent that said Chapter remains in effect.

4. Should the County Board of Supervisors adopt a Swainson's hawk mitigation policy/program (which may include a mitigation fee) prior to the implementation of one of the measures above, the project proponent may be subject to that program instead.

(Final SEIR, pp. 10-10—10-11.)

Impact: Vineyard Point Subdivision. The portion of Gerber Creek located within the project area represents potential habitat for the giant garter snake and the northwestern pond turtle. Construction of creek improvements and construction near Gerber Creek could impact both GGS and northwestern pond turtle. Impacts to GGS and northwestern pond turtle are potentially significant. (Final SEIR, p. 10-11.)

Finding: Changes or alterations have been required in, or incorporated into, the NVSSP amendment project that avoid the significant environmental effect as identified in the Final EIR.

Mitigation Measure:

BR-5. The project site shall be surveyed for giant garter snakes and the northwestern pond turtle by a qualified biologist within 24 hours prior to the start of construction activities (including clearing and grubbing) located within 200 feet of Gerber Creek. Survey of the area shall be repeated if a lapse in construction activity of two weeks or greater occurs. If a giant garter snake and/or northwestern pond turtle is encountered during construction, activities shall cease until appropriate corrective measures have been completed or it has been determined that the snake and/or turtle will not be harmed. Giant garter snakes and northwestern pond turtles encountered during construction should be allowed to move away on their own. Capture and relocation of trapped or injured individuals shall only be attempted by personnel or individuals with current USFWS recovery permits. Any incidental take shall be reported to the USFWS at (916) 979-2725 and Department of Environmental Review and Assessment at (916) 874-7914 within one working day. Any giant garter snake and/or northwestern pond turtle sightings shall be reported within 24 hours to the Department of Environmental Review and Assessment at 874-7914. (Final SEIR, p. 10-11.)

Impact: Vineyard Creek. The proposed project will impact 2.69 acres of waters of the United States. The proposed mitigation will ensure that this impact is less-than-significant. (Final SEIR, p. 10-18.)

Finding: Changes or alterations have been required in, or incorporated into, the NVSSP amendment project that avoid the significant environmental effect as identified in the Final EIR.

Mitigation Measures:

BR-6. To compensate for the loss of wetlands and waters of the U.S., one of the following measures shall be implemented:

1. Preserve or create wetlands sufficient to result in no net loss of wetland acreage, and protect their required watersheds as is necessary for the continued function of

wetlands on the project site. The appropriate hearing body shall determine that project design, configuration, and wetland management plan, provides reasonable assurances that the wetlands will be protected and their long-term ecological health maintained.

2. Where a Section 404 Permit has been issued by the Corps of Engineers, or an application has been made to obtain a Section 404 Permit, the Mitigation and Management Plan required by that permit or proposed to satisfy the requirements of the Corps for granting a permit may be submitted for purposes of satisfying paragraph 1, provided a no net loss of wetlands is achieved.

3. Pay to the County of Sacramento an amount based on a rate of $35,000 per acre for the unmitigated/uncompensated wetlands, which shall constitute mitigation for purposes of implementing adopted no net loss policies and CEQA required mitigation. The payment shall be collected by the Department of Planning and Community Development at the time of Improvement Plan or Building Permit approval, whichever occurs earlier, and deposited into the Wetlands Restoration Trust Fund.

(Final SEIR, pp. 10-18—10-19.)

Impact: Vineyard Creek. Construction of the proposed project will remove 1.49 acres of vernal pools, habitat for the vernal pool fairy shrimp, vernal pool tadpole shrimp, and spadefoot toad. Removal of this habitat represents a significant impact. (Final SEIR, p. 10-22.)

Finding: Changes or alterations have been required in, or incorporated into, the NVSSP amendment project that avoid the significant environmental effect as identified in the Final EIR.

Mitigation Measure:

BR-7. The applicant shall compensate for impacts to vernal pool species through consultation with the U.S. Fish and Wildlife Service as outlined in Section 7 of the Endangered Species Act. The applicant shall implement all measures included in the Biological Opinion issued as a result of this consultation. (Final SEIR, p. 10-22.)

Impact: Vineyard Creek. Project construction has the potential to disturb nesting activities of listed birds of prey. In addition, the proposed project will remove 104.8 acres of Swainson's Hawk foraging habitat upon completion. Impacts to Swainson's Hawk and other raptors are considered significant. (Final SEIR, p. 10-22.)

Finding: Changes or alterations have been required in, or incorporated into, the NVSSP amendment project that avoid the significant environmental effect as identified in the Final EIR.

Mitigation Measures:

BR-8. If construction is proposed during the raptor breeding season (February – August), a focused survey for migratory bird nests shall be conducted within 30 days prior to the beginning of construction activities by a qualified biologist in order to identify active nests on the site. If active nests are found, no construction activities shall take place within 500 feet of the nest until the young have fledged. Trees containing nests that must be removed as a result of project implementation shall be removed during the non-breeding season (September – January). If no active nests are found during the focused survey, no further mitigation will be required.

BR-9. To mitigate for the loss of 104.8 acres of Swainson's hawk foraging habitat, prior to the approval of Improvement Plans or building permits, or recordation of Final Subdivision Map, whichever occurs first, the applicant shall perform one of the following:

1. The project proponent shall preserve 52.4 acres (0.50 acre for each acre lost) of similar habitat within a 10-mile radius of the project site. This land shall be protected through fee title or conservation easement (acceptable to the California Department of Fish and Game).

2. The project proponent shall, to the satisfaction of the California Department of Fish and Game, prepare and implement a Swainson's hawk mitigation plan that will include preservation of Swainson's hawk foraging habitat.

3. The project proponent shall submit payment of a Swainson's hawk impact mitigation fee per acre impacted to the Department of Planning and Community Development in the amount as set forth in Chapter 16.130 of the Sacramento County Code as such may be amended from time to time and to the extent that said Chapter remains in effect.

4. Should the County Board of Supervisors adopt a Swainson's hawk mitigation policy/program (which may include a mitigation fee) prior to the implementation of one of the measures above, the project proponent may be subject to that program instead.

(Final SEIR, pp. 10-22—10-23.)

Impact: Vineyard Creek. During the April 2002 field assessment, a large tricolor blackbird colony of up to 500 pairs was nesting within the blackberry thicket along Elder Creek. Construction activities have the potential to disturb nesting activities and remove habitat. Impacts to Tricolor Blackbird are, therefore, potentially significant. (Final SEIR, p. 10-23.)

Finding: Changes or alterations have been required in, or incorporated into, the NVSSP amendment project that avoid the significant environmental effect as identified in the Final EIR.

Mitigation Measures:

BR-10. Prior to the approval of grading plans, submit a Tricolored Blackbird Mitigation Plan to the California Department of Fish and Game (CDFG) for review and approval. The plan shall include the following:

1. Preliminary surveys to determine the presence of nesting tricolored blackbirds;

2. Avoidance of active nesting colonies present on the site to the extent possible through establishment of temporary setbacks around the colonies until a qualified biologist verifies that young birds have successfully fledged.

(Final SEIR, p. 10-23.)

Impact: Vineyard Creek. The portion of Elder Creek located within the project area and the portion of Gerber Creek located adjacent to the southeast corner of the project area represent potential habitat for the giant garter snake and the northwestern pond turtle. Construction of creek improvements and construction near Elder Creek and Gerber Creek could impact both GGS and northwestern pond turtle. Impacts to GGS and northwestern pond turtle are potentially significant. (Final SEIR, p. 10-23.)

Finding: Changes or alterations have been required in, or incorporated into, the NVSSP amendment project that avoid the significant environmental effect as identified in the Final EIR.

Mitigation Measure:

BR-11. The project site shall be surveyed for giant garter snakes and the northwestern pond turtle by a qualified biologist within 24 hours prior to the start of construction activities (including clearing and grubbing) located within 200 feet of Elder and Gerber Creek. Survey of the area shall be repeated if a lapse in construction activity of two weeks or greater occurs. If a giant garter snake and/or northwestern pond turtle is encountered during construction, activities shall cease until appropriate corrective

measures have been completed or it has been determined that the snake and/or turtle will not be harmed. Giant garter snakes and northwestern pond turtles encountered during construction should be allowed to move away on their own. Capture and relocation of trapped or injured individuals shall only be attempted by personnel or individuals with current USFWS recovery permits. Any incidental take shall be reported to the USFWS at (916) 979-2725 and Department of Environmental Review and Assessment at (916) 874-7914 within one working day. Any giant garter snake and/or northwestern pond turtle sightings shall be reported within 24 hours to the Department of Environmental Review and Assessment at 874-7914. (Final SEIR, pp. 10-23—10-24.)

Impact: NVSSP Drainage Master Plan. Construction of the proposed project will remove 1.08 acres of vernal pools, habitat for the vernal pool fairy shrimp, vernal pool tadpole shrimp, and spadefoot toad. Removal of this habitat represents a significant impact. (Final SEIR, p. 10-31.)

Finding: Changes or alterations have been required in, or incorporated into, the NVSSP amendment project that avoid the significant environmental effect as identified in the Final EIR.

Mitigation Measure:

BR-12. The applicant shall compensate for impacts to vernal pool species through consultation with the U.S. Fish and Wildlife Service as outlined in Section 7 of the Endangered Species Act. The applicant shall implement all measures included in the Biological Opinion issued as a result of this consultation. (Final SEIR, p. 10-32.)

Impact: NVSSP Drainage Master Plan. Project construction has the potential to disturb nesting activities of listed birds of prey. Impacts to Swainson's Hawk and other raptors are considered potentially significant. (Final SEIR, p. 10-32.)

Finding: Changes or alterations have been required in, or incorporated into, the NVSSP amendment project that avoid the significant environmental effect as identified in the Final EIR.

Mitigation Measure:

BR-13. If construction is proposed during the raptor breeding season (February – August), a focused survey for migratory bird nests shall be conducted within 30 days prior to the beginning of construction activities by a qualified biologist in order to identify active nests on the site. If active nests are found, no construction activities shall take place within 500 feet of the nest until the young have fledged. Trees containing nests that must be removed as a result of project implementation shall be removed during the

non-breeding season (September – January). If no active nests are found during the focused survey, no further mitigation will be required. (Final SEIR, p. 10-32.)

Impact: NVSSP Drainage Master Plan. The portions of Elder Creek and Gerber Creek located within the project area represent potential habitat for the giant garter snake and the northwestern pond turtle. Construction of creek improvements could impact both GGS and northwestern pond turtle. Impacts to GGS and northwestern pond turtle are potentially significant. (Final SEIR, p. 10-32.)

Finding: Changes or alterations have been required in, or incorporated into, the NVSSP amendment project that avoid the significant environmental effect as identified in the Final EIR.

Mitigation Measure:

BR-14. The project site shall be surveyed for giant garter snakes and the northwestern pond turtle by a qualified biologist within 24 hours prior to the start of construction activities (including clearing and grubbing) located within 200 feet of Elder or Gerber Creeks. Survey of the area shall be repeated if a lapse in construction activity of two weeks or greater occurs. If a giant garter snake and/or northwestern pond turtle is encountered during construction, activities shall cease until appropriate corrective measures have been completed or it has been determined that the snake and/or turtle will not be harmed. Giant garter snakes and northwestern pond turtles encountered during construction should be allowed to move away on their own. Capture and relocation of trapped or injured individuals shall only be attempted by personnel or individuals with current USFWS recovery permits. Any incidental take shall be reported to the USFWS at (916) 979-2725 and Department of Environmental Review and Assessment at (916) 874-7914 within one working day. Any giant garter snake and/or northwestern pond turtle sightings shall be reported within 24 hours to the Department of Environmental Review and Assessment at 874-7914. (Final SEIR, pp. 10-32—10-33.)

Impact: NVSSP Water Treatment Facility. The proposed project has the potential to impact Waters of the United States including vernal pools. The proposed mitigation will ensure that this impact is less-than significant. (Final SEIR, p. 10-33.)

Finding: Changes or alterations have been required in, or incorporated into, the NVSSP amendment project that avoid the significant environmental effect as identified in the Final EIR.

Mitigation Measures:

BR-15. To compensate for the loss of wetlands and waters of the U.S., one of the following measures shall be implemented:

1. Preserve or create wetlands sufficient to result in no net loss of wetland acreage, and protect their required watersheds as is necessary for the continued function of wetlands on the project site. The appropriate hearing body shall determine that project design, configuration, and wetland management plan, provides reasonable assurances that the wetlands will be protected and their long-term ecological health maintained.

2. Where a Section 404 Permit has been issued by the Corps of Engineers, or an application has been made to obtain a Section 404 Permit, the Mitigation and Management Plan required by that permit or proposed to satisfy the requirements of the Corps for granting a permit may be submitted for purposes of satisfying paragraph 1, provided a no net loss of wetlands is achieved.

3. Pay to the County of Sacramento an amount based on a rate of $35,000 per acre for the unmitigated/uncompensated wetlands, which shall constitute mitigation for purposes of implementing adopted no net loss policies and CEQA required mitigation. The payment shall be collected by the Department of Planning and Community Development at the time of Improvement Plan or Building Permit approval, whichever occurs earlier, and deposited into the Wetlands Restoration Trust Fund.

(Final SEIR, pp. 10-33—10-34.)

Impact: NVSSP Water Treatment Facility. Construction of the proposed project has the potential to impact vernal pools, habitat for the vernal pool fairy shrimp, vernal pool tadpole shrimp, and spadefoot toad. Removal of this habitat represents a significant impact. (Final SEIR, p. 10-36.)

Finding: Changes or alterations have been required in, or incorporated into, the NVSSP amendment project that avoid the significant environmental effect as identified in the Final EIR.

Mitigation Measure:

BR-16. The applicant shall compensate for impacts to vernal pool species through consultation with the U.S. Fish and Wildlife Service as outlined in Section 7 of the Endangered Species Act. The applicant shall implement all measures included in the Biological Opinion issued as a result of this consultation. (Final SEIR, p. 10-36.)

Impact: Water Treatment Facility. Project construction has the potential to disturb nesting activities of listed birds of prey, and remove Swainson's hawk foraging habitat.

Impacts to Swainson's Hawk and other raptors are considered potentially significant. (Final SEIR, p. 10-36.)

Finding: Changes or alterations have been required in, or incorporated into, the NVSSP amendment project that avoid the significant environmental effect as identified in the Final EIR.

Mitigation Measures:

BR-17. If construction is proposed during the raptor breeding season (February – August), a focused survey for migratory bird nests shall be conducted within 30 days prior to the beginning of construction activities by a qualified biologist in order to identify active nests on the site. If active nests are found, no construction activities shall take place within 500 feet of the nest until the young have fledged. Trees containing nests that must be removed as a result of project implementation shall be removed during the non-breeding season (September – January). If no active nests are found during the focused survey, no further mitigation will be required.

BR-18. To mitigate for the loss of Swainson's hawk foraging habitat, prior to the approval of Improvement Plans, the applicant shall perform one of the following:

1. The project proponent shall preserve acreage at a rate of 0.50 acre for each acre lost of similar habitat within a 10-mile radius of the project site. This land shall be protected through fee title or conservation easement (acceptable to the California Department of Fish and Game).

2. The project proponent shall, to the satisfaction of the California Department of Fish and Game, prepare and implement a Swainson's hawk mitigation plan that will include preservation of Swainson's hawk foraging habitat.

3. The project proponent shall submit payment of a Swainson's hawk impact mitigation fee per acre impacted to the Department of Planning and Community Development in the amount as set forth in Chapter 16.130 of the Sacramento County Code as such may be amended from time to time and to the extent that said Chapter remains in effect.

4. Should the County Board of Supervisors adopt a Swainson's hawk mitigation policy/program (which may include a mitigation fee) prior to the implementation of one of the measures above, the project proponent may be subject to that program instead.

(Final SEIR, pp. 10-36—10-37.)

E. CULTURAL RESOURCES

Impact: Vineyard Creek Subdivision. No sites or building were found to be eligible for inclusion in the National Register. No prehistoric, archaeological sites were encountered during the field investigation of the Survey Area. However, the lack of surface evidence does not preclude the existence of important, subsurface cultural materials. There is a potential to unearth buried cultural remains during future project construction activities. Caution should, therefore, be exercised during future development activities. Any accidental encounter of previously unidentified cultural materials will require notification of the Department of Environmental Review and Assessment. If skeletal remains are encountered, both the Department of Environmental Review and Assessment and the County Coroner must be immediately notified. With the implementation of the mitigation proposed in the prior EIR, however, these potential impacts to cultural resources in the Vineyard Creek subdivision are considered less than significant. (Final SEIR, p. 11-10.)

Finding: Changes or alterations have been required in, or incorporated into, the NVSSP amendment project that avoid the significant environmental effect as identified in the Final EIR.

Impact: Vineyard Point Subdivision. The Vineyard Point subdivision was a part of the original Survey Area which was included in the prior EIR. No potentially significant archeological or architectural resources were discovered during the surveys. However, this does not preclude the existence of important, subsurface cultural materials. With the implementation of the mitigation proposed in the prior EIR, however, these potential impacts to cultural resources in the Vineyard Point subdivision are considered less than significant. (Final SEIR, p. 11-10.)

Finding: Changes or alterations have been required in, or incorporated into, the NVSSP amendment project that avoid the significant environmental effect as identified in the Final EIR.

<u>Mitigation Measures applicable to all cultural resources impacts:</u>

Mitigation included in the prior EIR is sufficient to ensure this potential impact is less-than-significant. (Final SEIR, p. 11-10.) That mitigation requires cultural resource surveys to be performed, inspection of sites within or adjacent to the boundaries of any identified archaeological sites by qualified professional archaeologists, historic architecture studies, and suspension of work and investigation by qualified specialists in the event of discovery of cultural resources during development activities. (Final Master EIR, pp. 2.17—2.19.)

VIII. STATEMENT OF OVERRIDING CONSIDERATIONS

As set forth in the preceding sections, the Board of Supervisors' approval of the NVSSP project will result in significant adverse environmental effects that cannot be avoided even with the adoption of all feasible mitigation measures. Despite the occurrence of these effects, however, the Board of Supervisors chooses to approve the project because, in its view, the economic, social, and other benefits that the project will produce will render the significant effects acceptable.

The following statement identifies the reasons why, in the Board's judgment, the benefits of the project as approved outweigh its unavoidable significant effects. Any one of these reasons is sufficient to justify approval of the project. Thus, even if a Court were to conclude that not every reason is supported by substantial evidence, the Board would stand by its determination that each individual reason is sufficient. The substantial evidence supporting the various benefits can be found in the preceding findings, which are incorporated by reference into this section (VIII), and in the documents found in the Record of Proceedings, as defined in section IV.

The Board finds that the NVSSP project would have the following economic, social, and environmental benefits:

Consistency with, and Implementation of, the County General Plan.

As set forth elsewhere in these Findings of Fact, the requested amendment and entitlements are consistent with the General Plan with respect to its land use designation and various policies found in the text of the General Plan. The land uses contemplated by the project are fully consistent with the growth policies embodied in the 1993 Sacramento County General Plan. The General Plan identified the Project area as an Urban Development Area, signifying the County's intent to encourage and allow development of the area with the types of urban uses proposed by the Project's proponents. (Final Master NVSSP EIR, p. 3.4b.) Furthermore, the residential focus of the Project serves to accommodate the projected need for 94,000 additional housing units in the County by the year 2010. (General Plan, Land Use Element, p. 18.) The Board's approval of the project as proposed fully complies with and implements the policy decisions embodied in the 1993 General Plan for Sacramento County.

Diversification of the County's Housing Stock.

The proposed amendments to the NVSSP consist of a slight increase in residential density, resulting in an overall holding capacity increase from 5,732 dwelling units to 6,063 dwelling units, or about a 6% increase.

The increase in density is in response to the need for more affordable housing sites within the County, as outlined in the current General Plan Housing Element Update process. Legal Services of Northern California challenged the May 2002 vacant land inventory, suggesting that there is a lack of vacant multi-family land of suitable size and location to accommodate very low and low-income housing within the unincorporated area of the County. The vacant land inventory acknowledges that there is an inadequate supply of multi-family zoned land to met the demand for very low and low-income housing needs identified in the Regional Housing Needs Assessment.

The Sacramento County Planning and Community Development Department (Planning Department) has identified the need to create more multi-family land (multi-family development is generally seen as the most feasible way for meeting the affordability index) to ensure a viable affordable housing program through the new community and specific plans now being processed. New development areas are seen as offering the best opportunity to accommodate affordable housing needs.

The primary scope of the pending Affordable Housing Program currently being developed by the Planning Department and the Sacramento Housing and Redevelopment Agency (SHRA), with significant input from affordable housing stakeholders, is that all new residential development in the unincorporated county will be required to provide affordable housing, and the goal is to have 15% of all new housing units constructed to be affordable to targeted low-income groups. As originally proposed, the Housing Element update Policy HE-45 had called for a 10% affordability factor; however the Policy Planning Commission has recommended a 15% affordability factor and the current Draft Affordable Housing Program has followed through with a 15% requirement.

In anticipation of this requirement, the applicants for the NVSSP are attempting to meet affordable housing component by increasing multi-family residential sites in three areas of the Plan effectively adding 439 more multi-family units for a total of 1,119 units on 65 acres. In addition, another site has been redesignated as medium-density residential (7 to 12 units per acre), adding another 122 units for a total of 309 medium density units on 32.7 acres for development as possible affordable units. These increases in higher density units are offset by slightly fewer single-family units, resulting in a net increase of 331 units for the NVSSP area for a gross holding capacity of 6,063 units on 1,595 acres. This represents just under a 6% increase in units in the Plan area from the previously approved 5,732 units.

Approval of the NVSSP amendment proposed by the project applicants, therefore, would encourage the development of affordable housing opportunities, thereby assisting the County in meeting its affordable housing goals.

(Final SEIR, pp. 4-2—4-4.)

DATED: November 19, 2004

BY: Muriel P. Johnson
Chairperson of the Board of Supervisors
of the County of Sacramento,
State of California

RECORDING REQUESTED

WHEN RECORDED MAIL TO:

County of Sacramento, Department of
Environmental Review and Assessment
827 Seventh Street, Room 220
Sacramento, CA 95814

CONTACT PERSON: Dennis E. Yeast
TELEPHONE: (916) 874-7914

ENDORSED:

AUG 24 1998

JOHN DARK, CLERK-RECORDER
By _____, Deputy

SPACE ABOVE THIS LINE RESERVED FOR RECORDER'S USE

NOTICE OF DETERMINATION

SUBJECT: FILING OF NOTICE OF DETERMINATION IN COMPLIANCE WITH SECTION 21108 OR 21152 OF THE PUBLIC RESOURCES CODE

PROJECT TITLE: NORTH VINEYARD STATION SPECIFIC PLAN CONTROL NUMBER(S): 93-SFB-0238 STATE CLEARINGHOUSE NUMBER (IF SUBMITTED): 96032057
PROJECT LOCATION: The subject property consists of 1,594.5± acres located within the Vineyard Community Planning Area. The proposed project is bounded by Florin Road to the north, Gerber Road to the south, the northerly extension of Vineyard Road on the east, and generally by Elder Creek on the west.
ASSESSOR'S PARCEL NUMBER(S): Various
DESCRIPTION OF PROJECT: (See attachment)

This is to advise that the County of Sacramento (X Lead Agency __Responsible Agency) has approved the above described project on August 12, 1998 and has made the following determinations concerning the above described project:

1. The project [X will __will not] have a significant effect on the environment.
2. X An Environmental Impact Report was prepared for this project pursuant to the provisions of CEQA.
   __A Negative Declaration was prepared for this project pursuant to the provisions of CEQA.
3. Mitigation measures [X were __were not] made a condition of the approval of the project.
4. A mitigation monitoring and reporting program [X was __was not] adopted.
5. A statement of Overriding Considerations [X was __was not] adopted for this project.
6. Findings [X were __were not] made pursuant to the provisions of CEQA.
7. California State Department of Fish and Game Fees (AB 3158)
   a. [ ] The project has been found to be de minimis thus not subject to the provisions of AB 3158.
   b. [X] The project is not de minimis and is, therefore, subject to the following fees:
      [ ] $1,250 for review of a Negative Declaration
      [X] $ 850 for review of an Environmental Impact Report
      [X] $ 25 for County Fish and Game program processing fees.

This is to certify that the environmental document and record of project approval is available to the General Public at: 827 Seventh Street, Room 220, Sacramento, CA 95814.

ENVIRONMENTAL COORDINATOR OF
SACRAMENTO COUNTY
STATE OF CALIFORNIA

BY: Robert J. DeMorales
for Dennis E. Yeast
Environmental Coordinator

Copy To: X State of California
Office of Planning and Research
1400 Tenth Street, Room 121
Sacramento, CA 95814

X County of Sacramento
County Clerk
600 8th Street, Room 101
Sacramento, CA 95814

ATTACHMENT

North Vineyard Station Specific Plan
(Control Number: 93-SFB-0238)

The proposed project consists of the following:

1. A General Plan Amendment to change the land use designation of 1,594.5± acres from Urban Development Area to Low Density Residential, Medium Density Residential, Commercial and Office, and Recreation.

2. A General Plan Amendment to change the Transportation Diagram to designate Waterman Road between Florin Road and Gerber Road as an "Arterial" roadway.

Click Project Title link to display all related documents. Document Type link will display full document description.

Records Found: 4

[First] [Next] [Previous] [Last]

Page: 1

Query Parameters:			Date Range:		
SCH#	**Lead Agency**	**Project Title**	**Description**	**Document Type**	**Date Received**
1996032057	Sacramento County	NORTH VINEYARD STATION SPECIFIC PLAN	SAA #2005-0323-R2 The project consists of increasing aquatic habitat of Gerber Creek.	NOD	11/3/2005
1996032057	Sacramento County	NORTH VINEYARD STATION SPECIFIC PLAN	RURAL RESIDENTIAL, AGRICULTURAL, A SPECIFIC PALN FOR 1590 ACRES INTHE VINEYARD COMMUNITY PLAN AREA CURRENTLY DESIGNATED AS AN URBAN DEVELOPMENT AREA. THE 6339 UNIT RESIDENTIAL SPECIFIC PLAN WILL SUPPORT COMMERCIAL, BUSINESS PROFESSIONAL, PARK, SCHOOL, AND OPEN SPACE USE AS DESCRIBED	NOD	11/10/1998
1996032057	Sacramento County	NORTH VINEYARD STATION SPECIFIC PLAN	RURAL RESIDENTIAL, AGRICULTURAL, A SPECIFIC PALN FOR 1590 ACRES INTHE VINEYARD COMMUNITY PLAN AREA CURRENTLY DESIGNATED AS AN URBAN DEVELOPMENT AREA. THE 6339 UNIT RESIDENTIAL SPECIFIC PLAN WILL SUPPORT COMMERCIAL, BUSINESS PROFESSIONAL, PARK, SCHOOL, AND OPEN SPACE USE AS DESCRIBED	EIR	7/22/1997
1996032057	Sacramento County	NORTH VINEYARD STATION SPECIFIC PLAN	RURAL RESIDENTIAL, AGRICULTURAL, A SPECIFIC PALN FOR 1590 ACRES INTHE VINEYARD COMMUNITY PLAN AREA CURRENTLY DESIGNATED AS AN URBAN DEVELOPMENT AREA. THE 6339 UNIT RESIDENTIAL SPECIFIC PLAN WILL SUPPORT COMMERCIAL, BUSINESS PROFESSIONAL, PARK, SCHOOL, AND OPEN SPACE USE AS DESCRIBED	NOP	3/12/1996

[First] [Next] [Previous] [Last]

FINAL SUPPLEMENTAL ENVIRONMENTAL IMPACT REPORT

NORTH VINEYARD STATION

SPECIFIC PLAN AMENDMENT, FINANCING PLAN, WATER TREATMENT FACILITIES

VINEYARD POINT
REZONE, VESTING TENTATIVE SUBDIVISION MAP, LARGE LOT TENTATIVE SUBDIVISION MAP, AND SPECIAL DEVELOPMENT PERMIT

VINEYARD CREEK
REZONE, VESTING TENTATIVE SUBDIVISION MAP, AND LARGE LOT TENTATIVE SUBDIVISION MAP

Control Numbers: 03-CPB-0082, 02-PWE-0532, 04-PWE-0144, 02-RZB-SDB-SVB-0293, 03-RZB-SVB-0385
State Clearinghouse Number:2004032104

October 2004

COUNTY OF SACRAMENTO
DEPARTMENT OF ENVIRONMENTAL
REVIEW AND ASSESMENT
827 7TH STREET, ROOM 220
SACRAMENTO, CALIFORNIA 95814

Board Of Supervisors

1st District: Roger Dickinson,
2nd District: Illa Collin
3rd District: Muriel Johnson
4th District: Roger Neillo
5th District: Don Nottoli, Chairperson

County Executive

Terry Schutten

Prepared By

Department Of Environmental Review And Assessment

FINAL SUPPLEMENTAL ENVIRONMENTAL IMPACT REPORT

NORTH VINEYARD STATION

SPECIFIC PLAN AMENDMENT, FINANCING PLAN, WATER TREATMENT FACILITIES

VINEYARD POINT

REZONE, VESTING TENTATIVE SUBDIVISION MAP, LARGE LOT TENTATIVE SUBDIVISION MAP, AND SPECIAL DEVELOPMENT PERMIT

VINEYARD CREEK

REZONE, VESTING TENTATIVE SUBDIVISION MAP, AND LARGE LOT TENTATIVE SUBDIVISION MAP

Control Numbers: 03-CPB-0082, 02-PWE-0532, 04-PWE-0144, 02-RZB-SDB-SVB-0293, 03-RZB-SVB-0385

State Clearinghouse Number:2004032104

This Environmental Impact Report has been prepared pursuant to the California Environmental Quality Act of 1970 (Public Resources Code Division 13). An Environmental Impact Report is an informational document which, when this Department requires its preparation shall be considered by every public agency prior to its approval or disapproval of a project. The purpose of an Environmental Impact Report is to provide public agencies with detailed information about the effect that a proposed project is likely to have on the environment; to list ways in which any adverse effects of such a project might be minimized; and to suggest alternatives to such a project.

Prepared by

COUNTY OF SACRAMENTO
DEPARTMENT OF ENVIRONMENTAL
REVIEW AND ASSESMENT
827 7TH STREET, ROOM 220
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Joyce Horizumi - *Environmental Coordinator*
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Catherine Hack - *Application Processing* Antonia Barry - *Public Projects* Linda Bryceson – *Administration*

October 1, 2004

TO: ALL INTERESTED PARTIES

SUBJECT: FINAL SUPPLEMENTAL ENVIRONMENTAL IMPACT REPORT FOR NORTH VINEYARD STATION SPECIFIC PLAN AMENDMENT, FINANCING PLAN, WATER TREATMENT FACILITIES, AND ASSOCIATED VINEYARD POINT REZONE, VESTING TENTATIVE SUBDIVISION MAP, LARGE LOT TENTATIVE SUBDIVISION MAP, AND SPECIAL DEVELOPMENT PERMIT; AND VINEYARD CREEK REZONE, VESTING TENTATIVE SUBDIVISION MAP, AND LARGE LOT TENTATIVE SUBDIVISION MAP
(Control Numbers: 03-CPB-0082, 02-PWE-0532, 04-PWE-0144, 02-RZB-SDB-SVB-0293, 03-RZB-SVB-0385)

The subject Final Supplemental Environmental Impact Report (DSEIR) is attached for your review and comment. The Final EIR and proposed project will be heard before the Sacramento County Board of Supervisors on October 13, 2004 at 6:00 P.M. in the County Administration Building, 700 “H” Street, Sacramento, California.

Please contact Tim Hawkins of this office at 874-7914 if you have questions concerning this Final Environmental Impact Report.

Sincerely,

Joyce Horizumi
Environmental Coordinator

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1 PREFACE

This Final EIR is a Supplement to the Final Environmental Impact Report (EIR) for the North Vineyard Station Specific Plan (County Control Number: 93-SFB-0238). The Sacramento County Board of Supervisors certified the prior Final EIR on August 12, 1998 and approved the General Plan Amendment, and subsequently approved the North Vineyard Station Specific Plan (NVSSP) on November 4,1998. This Final EIR includes all comments received on the Draft EIR and responses to those comments. Comments and Responses are in Chapter 18. Changes to the EIR are shown in Strikeout and *Italics.* Changes are editorial in nature or are provided to update information received since the release of the Draft EIR.

The original EIR was prepared as a Master EIR under the provision of CEQA (Section 15175). The information contained in this Supplemental EIR in conjunction with the prior Final EIR for the North Vineyard Station Specific Plan will be used as the environmental documentation for the current project application.

The Draft EIR was completed and distributed on July 7, 2004. The Draft was mailed to over 90 agencies and residents.

A public hearing was held before the Policy Planning Commission on August 24, 2004. The Commission voted to close the public comment period and instructed DERA to prepare a Final EIR for presentation to the Board of Supervisors. The Commission recommended approval of the Amendments to the Specific Plan, subject to findings recommended by staff; recommended approval of the Zoning Code Amendment, subject to findings as recommended by staff; and recommended approval of the Infrastructure Finance Plan, subject to findings as recommended by staff. For the two maps (Vineyard Creek and Vineyard Point) the Commission recommended approval of the Rezones, subject to findings and conditions recommended by staff; and amended; recommended approval of the Vesting Tentative Subdivision Maps, subject to findings and conditions as recommended by staff; recommended approval of the Tentative Subdivision Maps, subject to findings and conditions recommended by staff, and amended; and recommended approval of the Special Development Permits, subject to findings and conditions recommended by staff.

The Board of Supervisors will use the EIR in making a decision as to whether to approve or deny the project.

2 EXECUTIVE SUMMARY AND MITIGATION MEASURES

The subject of this Supplement to a Final Environmental Impact Report (EIR) is a project known as North Vineyard Station Specific Plan Amendment, Financing Plan, Water Treatment Facilities, and associated Vineyard Point Rezone, Vesting Tentative Subdivision Map, Large Lot Tentative Subdivision Map, and Special Development Permit; and Vineyard Creek Rezone, Vesting Tentative Subdivision Map, and Large Lot Tentative Subdivision Map. The Sacramento County Board of Supervisors certified the original Final EIR on August 12, 1998 and approved the General Plan Amendment, and subsequently approved the North Vineyard Station Specific Plan (NVSSP) on November 4,1998.

The NVSSP planning area is located in the south-central unincorporated area of Sacramento County, at the western edge of the Vineyard community. The City of Sacramento's Central Business District is located approximately eleven miles to the northwest. The Plan Area lies entirely within Sections 4 and 5 of Township 7 North, Range 6 East and within the USGS Elk Grove quadrangle map.

The Plan Area encompasses 1,590± acres of the Vineyard Community Planning Area. The Plan Area is bounded by Florin Road to the north, Gerber Road to the South, the northerly extension of the Vineyard Road on the east, and generally by Elder Creek's north and south forks. Bradshaw Road transects the Plan Area in a north/south alignment. The right-of-way of the Central California Traction Railroad transects the western portion of the planning area.

The following environmental impact and mitigation summary table (*Table 2-1 Executive Summary of Impacts and Mitigation on page 2-2*) briefly describes the project impacts and the mitigation measures recommended to eliminate or reduce the impacts. The residual impact after mitigation is also identified. Immediately following the summary table is a list of recommendations/requirements of various agencies pertaining to the project *(see Requests and Requirements of Various Agencies on page 2-26)*, and a description of mandated mitigation monitoring requirements *(see Mitigation Monitoring and Reporting Program on page 2-25)*. Detailed discussions of each of the identified impacts and mitigation measures, including pertinent support data, can be found in the specific topic sections in the remainder of this report.

This report has identified project-related impacts associated with Air Quality as significant and unavoidable. Traffic and Circulation, Noise, Biological Resources, and Cultural Resources were found to be potentially significant, but could be reduced to a less than significant level through inclusion of recommended mitigation measures.

Impacts associated with Land Use, Public Services, Public Facilities Financing, Water Supply, Drainage and Hydrology, and Sewer Service are considered less than significant.

Table 2-1
Executive Summary of Impacts and Mitigation

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
LAND USE			
The proposed developments are generally consistent with the General Plan, North Vineyard Station Specific Plan, and the Sacramento County Zoning Code. The proposed amendments to the Specific Plan are in response to a need throughout the unincorporated County for affordable housing. The number of potential additional units that may be developed in the Plan area as a result of these changes represents only a small overall increase in the total number of units within the NVSSP.	LS	None	LS
PUBLIC FACILITIES AND SERVICES			
Schools			
Although the project would result in increases to student population, established case law indicates that school overcrowding, standing alone, is not a change in the physical conditions, and cannot be treated as an impact on the environment[2].	LS	None	LS
Crime Prevention			
Although law enforcement service is available to serve the Plan area, staffing will not meet service standard levels. To assist in reducing crime levels and the strain on law enforcement resources, the Plan area should be designed with safety as a prime consideration. Coordination with the	LS	None	LS

[1] PS = Potentially Significant S = Significant SU = Significant and Unavoidable LS = Less Than Significant

[2] Goleta Union School District v. The Regents of the University of California (36 Cal-App. 4th 1121, 1995)

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure		Level of Significance After Mitigation
Sheriff's Department, planners and developers for future development with the Plan area will lessen impacts to police protection services to less-than-significant.				
Parks and Recreation				
Future development may have the potential to impact existing and planned park site facilities in the area, as well as creating the need for additional facilities, due to increased resident population. However, until specific development proposals are made, it is difficult to accurately assess impacts to specific sites and/or facilities. However, no environmentally significant impacts to recreational opportunities for existing and future residents are expected.	LS	None		LS
Public Transit				
Implementation of the proposed project will not disrupt or interfere with expected transit operations in the area and no cumulative impacts were identified. The plan provides for the implementation of future facilities by RT such as bus operations, light rail, bus turnouts, and transit centers. Impacts due to the proposed project are considered less than significant.	LS	None		LS
TRAFFIC AND CIRCULATION				
Phase 1A				
Based on the roadway and intersection analysis, the addition of Phase 1A trips will cause or contribute to deficiencies at the following study locations under Year 2002 conditions: *STUDY ROADWAYS* • S. Watt Avenue – (North of SR 16); • S. Watt Avenue – (SR 16 to Elder Creek Road); • Elk Grove-Florin Road – (Florin Road to Gerber Road);	S	TC-1. TC-2. TC-3.	S. Watt Avenue (North of SR 16) – Widening this segment from two to four lanes will improve operations to LOS D. S. Watt Avenue (SR 16 to Elder Creek Road) – Widening this segment from two to four lanes will improve operations to LOS A. Elk Grove-Florin Road (Florin Road to Gerber Road) – Widening this segment from two to four lanes will improve operations to LOS B.	LS

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
• Gerber Road – (Elk Grove-Florin Road to Bradshaw Road); *STUDY INTERSECTIONS* • SR 16/S. Watt Avenue; • SR 16/Bradshaw Road; and • Elder Creek Road/S. Watt Avenue.		*TC-4.* Gerber Road (Elk Grove-Florin Road to Bradshaw Road) – Improving the roadway cross-section to include minimum 12-foot travel lanes and 6-foot shoulders will improve operations to LOS C. TC-5. SR 16/S. Watt Avenue – Widening the northbound and southbound approaches to include an additional through lane will improve operations to LOS D during the a.m. and p.m. peak hours. This improvement is consistent with the recommended widening of S. Watt Avenue to four lanes between Elder Creek Road and SR 16. TC-6. SR 16/Bradshaw Road – Widening the eastbound approach to include dual left-turn lanes will improve operations to LOS E during the a.m. peak hour. Evaluation of other Public Facility Financing Plans revealed that the Sunridge Public Facility Financing Plan includes improvements at the State Route 16 and Bradshaw Road intersection. The proposed improvements are expansion of the intersection to accommodate two left turn lanes, two through lanes and one right turn lane on all approaches. It is likely that right-of-way will need to be acquired to provide the proposed improvements. The improvement is included in Phase 1 on the Sunridge Public Facility Financing Plan, which would mean that the improvement would be constructed in the next 5 years. With those improvements, the intersection level of service would improve to LOS D in the a.m. peak hour and LOS C in the p.m. peak hour, with build out of Phase 1A of the North Vineyard Station Specific Plan. TC-7. Elder Creek Road/S. Watt Avenue – Installing a traffic signal and widening each approach to include an exclusive left-turn lane and a shared through/right-turn lane will improve operations to LOS D during the p.m.	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure		Level of Significance After Mitigation
			peak hour.	
Phase 1B				
Based on the roadway and intersection analysis, the addition of Phase 1B trips will cause or contribute to deficiencies at the following study locations under Year 2005 conditions. *STUDY ROADWAYS* • None. *STUDY INTERSECTIONS* • SR 16/S. Watt Avenue; • Florin Road/Excelsior Road; and • Gerber Road/Excelsior Road.	S	TC-8.	SR 16/S. Watt Avenue – Widening the eastbound and westbound approaches to include an exclusive left-turn lane, a through lane, and a shared through/right-turn lane will improve operations to LOS E and D during the a.m. and p.m. peak hours, respectively. Subsequent to the publishing of the traffic analysis, the County of Sacramento moved forward a project to widen South Watt Avenue from State Route 16 to Kiefer Boulevard to five lanes. The project includes the State Route 16 and South Watt Avenue intersection. The intersection improvement includes an additional left turn lane and through lane on the southbound approach and one new left turn lane and two new through lanes on the northbound approach. The improvement is planned to be completed by 2006. With those improvements and Mitigation Measure TC-8, an additional through lane on the eastbound and westbound approaches, the intersection level of service3 would improve to LOS C in both the a.m. and p.m. peak hours, with build out of Phase 1A and 1B of the North Vineyard Station Specific Plan.	LS
		TC-9.	Florin Road/Excelsior Road – Installing a traffic signal and widening each approach to include an exclusive left-turn lane and a shared through/right-turn lane will improve operations to LOS C and B during the a.m. and p.m. peak hours, respectively.	
		TC-10.	Gerber Road/Excelsior Road – Installing a traffic signal and widening each approach to include an exclusive left-turn lane and a shared through/right-turn lane will improve operations to LOS B and A during the a.m. and p.m. peak hours, respectively.	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
Year 2010 Conditions			
The daily volumes were compared to the roadway capacity thresholds. The addition of project trips will result in a deficiency at the following study roadway segments. • S. Watt Avenue (North of SR 16); and • Elk Grove-Florin Road (Gerber Road to Calvine Road).	S	TC-11. S. Watt Avenue (North of SR 16) – Widening this segment from four to six lanes will improve operations to LOS D. TC-12. Elk Grove-Florin Road (Gerber Road to Calvine Road) – Widening this segment from four to six lanes will improve operations to LOS B.	LS
Year 2015 Conditions			
Based on the roadway and intersection analysis, buildout of the NVSSP will cause or contribute to deficiencies at the following study locations under Year 2015 conditions. *STUDY ROADWAYS* • Florin Road (West of S. Watt Avenue); • Florin Road (S. Watt Avenue to Bradshaw Road); • S. Watt Avenue (North of SR 16); • S. Watt Avenue (SR 16 to Elder Creek Road); • Elk Grove-Florin Road (Gerber Road to Calvine Road); and • Bradshaw Road (Elder Creek Road to Florin Road). *STUDY INTERSECTIONS* • SR 16/S. Watt Avenue; • SR 16/Bradshaw Road; • Elder Creek Road/Bradshaw Road; • Florin Road/Elk Grove-Florin Road; and • Florin Road/Bradshaw Road.	S	TC-13. Florin Road (West of S. Watt Avenue) – Widening this segment from two to four lanes will improve operations to LOS A. TC-14. Florin Road (S. Watt Avenue to Bradshaw) – Widening this segment from two to four lanes will improve operations to LOS A. TC-15. S. Watt Avenue (North of SR 16) – Widening this segment from four to six lanes will improve operations to LOS D. TC-16. S. Watt Avenue (SR 16 to Elder Creek Road) – Widening this segment from four to six lanes will improve operations to LOS C. TC-17. Elk Grove-Florin Road (Gerber Road to Calvine Road) – Widening this segment from four to six lanes will improve operations to LOS C. TC-18. Bradshaw Road (Elder Creek Road to Florin Road) – Widening this segment from four to six lanes will improve operations to LOS B. TC-19. SR 16/S. Watt Avenue – Widening the southbound approach to include dual left-turn lanes will result in less than a 0.05 increase in the V/C ratio during the p.m. peak	LS

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		hour.	
		TC-20. SR 16/Bradshaw Road – Widening the northbound and southbound approaches to include two exclusive left turn lanes, two through lanes and a shared through/right-turn lane will result in less than a 0.05 increase in the V/C ratio during the a.m. and p.m. peak hours.	
		TC-21. Elder Creek Road/Bradshaw Road – Widening the northbound and southbound approaches to include a third through lane will improve operations to LOS D during the a.m. peak hour and LOS C during the p.m. peak hour. This improvement is consistent with the recommended widening of Bradshaw Road to six lanes between Elder Creek Road and Florin Road.	
		TC-22. Florin Road/Elk Grove-Florin Road – Widening the northbound and southbound approaches to include a third through lane will improve operations to LOS E during the p.m. peak hour.	
		TC-23. Florin Road/Bradshaw Road – Widening the northbound and southbound approaches to include a third through lane and widening the eastbound approach to include a second exclusive left-turn lane will improve operations to LOS E during the a.m. peak hour. This improvement is consistent with the recommended widening of Florin Road to four lanes between Watt Avenue and Bradshaw Road and with the recommended widening of Bradshaw Road to six lanes between Elder Creek Road and Florin Road.	
AIR QUALITY			
Specific Plan Buildout			
The previous EIR found that the Specific Plan long-term			

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
emissions (ROG, NOX, PM10) from vehicle traffic and stationary sources would result in significant unavoidable impacts to regional air quality.			
Vineyard Creek and Vineyard Point Subdivisions The Sacramento Metropolitan Air Quality District (SMAQMD) commented that, due to their size, the Vineyard Creek and Vineyard Point projects exceed the District's Thresholds of significance. Therefore, construction related air quality impacts are considered significant. Short-term construction activity involving the disturbance of 10 to 25 acres per day can be accomplished without violating PM_{10} emissions standards though strict adherence to recommended mitigation measures. However, it is unrealistic to assume strict application of dust mitigation measures for the widespread development that is slated to occur. Therefore dust generation during construction activities is expected to exceed the PM_{10} threshold and constitutes a ***significant impact***.	S	AQ-1. The project shall provide a plan for approval by the County of Sacramento and SMAQMD demonstrating that the heavy-duty (>50 horsepower) off-road vehicles to be used in the construction project, including owned, leased and subcontractor vehicles, will achieve a project wide fleet-average 20 percent NOx reduction and 45 percent particulate reduction compared to the most recent CARB fleet average; and AQ-2. The project representative shall submit to the County of Sacramento and SMAQMD a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 horsepower, that will be used an aggregate of 40 or more hours during any portion of the construction project. The inventory shall include the horsepower rating, engine production year, and hours of use or fuel throughput for each piece of equipment. The inventory shall be updated and submitted monthly throughout the duration of the project, except that an inventory shall not be required for any 30-day period in which no construction activity occurs. At least 48 hours prior to the use of subject heavy-duty off-road equipment, the project representative shall provide SMAQMD with the anticipated construction timeline including start date, and name and phone number of the project manager and on-site foreman. AQ-3. The project shall ensure that emissions from all off-road diesel powered equipment used on the project site do not exceed 40 percent opacity for more than three minutes in any one hour. Any equipment found to exceed 40 percent	SU

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		opacity shall be repaired immediately, and the County of Sacramento and SMAQMD shall be notified within 48 hours of identification of non-compliant equipment. A visual survey of all in-operation equipment shall be made at least weekly, and a monthly summary of the visual survey results shall be submitted throughout the duration of the project, except that the monthly summary shall not be required for any 30-day period in which no construction activity occurs. The monthly summary shall include the quantity and type of vehicles surveyed as well as the dates of each survey. The SMAQMD and/or other officials may conduct periodic site inspections to determine compliance. Nothing in this section shall supercede other SMAQMD or state rules or regulations. AQ-4. The following construction-related measures apply to construction activities within the Specific Plan area: a. Water exposed, graded surfaces at least two times per day and if possible, keep soil moist at all times. b. Properly maintain diesel and/or gas fueled construction equipment. c. Water haul roads at least two times per day d. Use low VOC architectural coatings AQ-5. Comply with the adopted AQ-15 Plan, which is included in Section .7.6 (Travel Demand Reduction Measures) of the NVSSP text. ~~AQ-6.Individual development projects within the Specific Plan Area shall achieve an additional 2 percent reduction in combined operational and area source air quality emissions to ensure overall AQ-15 compliance.~~	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		~~AQ-7.~~AQ-6. No wood burning appliances shall be permitted in new construction within the Specific Plan area. Fireplaces and similar "wood stoves" shall be fueled by natural gas or propane.	
NOISE			
Vineyard Creek Subdivision Residences proposed nearest to Florin Road and Waterman Road would be exposed to future traffic noise levels that exceed the 60 dB L_{dn} Sacramento County Noise Element Standard. This impact is considered significant.	S	NO-1. A 7-foot tall property line barrier along Florin Road and a 6-foot tall property line barrier along Waterman Road shall be constructed. Sufficient barrier wrap should be provided as shown in Plate NS-1 of the EIR.	LS
Vineyard Point Subdivision Residences proposed nearest to Bradshaw Road and Gerber Road would be exposed to future traffic noise levels that exceed the 60 dB L_{dn} Sacramento County Noise Element Standard. This impact is considered significant.	S	NO-2. A 9-foot tall property line barrier along Bradshaw Road and an 8-foot tall property line barrier along Gerber Road, shall be constructed. Sufficient barrier wrap should be provided as shown in Plate NS-2 of the EIR. NO-3. STC-30 windows shall be installed in the second floor of the first row of houses that are adjacent to Bradshaw Road. In these houses, only second floor windows with a direct view of Bradshaw Road need to be upgraded.	LS
Water Treatment Facility and Well Sites Based upon the noise level measurement data, the predicted noise level at the backyard of the nearest residence to the water treatment facility is 53 dB L_{50}. This level exceeds the Sacramento County hourly noise criteria of 50 dB L_{50} for daytime noise and the 45 dB L_{50} criteria for nighttime noise. Since the booster pumps are expected to operate during the nighttime hours, it is recommended that noise control measures, which will reduce overall pump noise levels by a minimum of 8 dBA, be included in the	S	NO-4. The water treatment facility should have 7-foot tall property line barriers at the adjacent residential property lines. In addition to the solid barriers, the pumps should be housed in concrete buildings with acoustical louvers/silencers and weather stripping around the doors. The louvers/silencers must provide a minimum insertion loss of 10-15 dB at the 125 Hz through 1000 Hz frequency ranges.	LS

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
project design. The predicted un-muffled exhaust noise level with the emergency generator in operation is predicted to be 85 dBA at the backyard of the nearest residence. Assuming that the generator operates continually for one half of an hour while being exercised, the hourly L_{50} (sound level not to be exceeded 30 minutes of the hour) is 82 dBA. This level would exceed the daytime and nighttime noise level criteria of 50 dBA L_{50} and 45 dBA L_{50}, respectively.		NO-5. A muffler such as a Vibron brand residential muffler should be fitted on the exhaust stack at the water treatment facility in order to provide adequate noise reduction to meet the Sacramento County noise standards. NO-6. ~~Pump~~ Remote well (Pump) sites should have 7-foot tall property line barriers at the adjacent residential property lines. In addition to the solid barriers, the pumps should be housed in concrete buildings with acoustical louvers/silencers and weather stripping around the doors. The louvers/silencers must provide a minimum insertion loss of 10-15 dB at the 125 Hz through 1000 Hz frequency ranges.	
BIOLOGICAL RESOURCES			
Vineyard Point Subdivision The proposed project will impact 9.02 acres of waters of the United States. The proposed mitigation will ensure that this impact is less-than-significant.	S	BR-1. To compensate for the loss of wetlands and waters of the U.S., one of the following measures shall be implemented: 1. Preserve or create wetlands sufficient to result in no net loss of wetland acreage, and protect their required watersheds as is necessary for the continued function of wetlands on the project site. The appropriate hearing body shall determine that project design, configuration, and wetland management plan, provides reasonable assurances that the wetlands will be protected and their long-term ecological health maintained. 2. Where a Section 404 Permit has been issued by the Corps of Engineers, or an application has been made to obtain a Section 404 Permit, the Mitigation and Management Plan required by that permit or proposed to satisfy the requirements of the Corps for granting a permit may be submitted for purposes of satisfying paragraph 1, provided a no net loss of wetlands is achieved. ~~and, provided, further, that such mitigation~~	LS

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		~~and management plan shall be subject to the independent, discretionary approval of the Board of Supervisors.~~ 3. Pay to the County of Sacramento an amount based on a rate of $35,000 per acre for the unmitigated/uncompensated wetlands, which shall constitute mitigation for purposes of implementing adopted no net loss policies and CEQA required mitigation. The payment shall be collected by the Department of Planning and Community Development at the time of Improvement Plan or Building Permit approval, whichever occurs earlier, and deposited into the Wetlands Restoration Trust Fund.	
Construction of the proposed project will remove 8.41 acres of vernal pools, habitat for the vernal pool fairy shrimp, vernal pool tadpole shrimp, and spadefoot toad. Removal of this habitat represents a significant impact.	S	BR-2. The applicant shall compensate for impacts to vernal pool species through consultation with the U.S. Fish and Wildlife Service as outlined in Section 7 of the Endangered Species Act. The applicant shall implement all measures included in the Biological Opinion issued as a result of this consultation.	LS
Project construction has the potential to disturb nesting activities of listed birds of prey. In addition, the proposed project will remove ~~179~~ 181.8 acres of Swainson's Hawk foraging habitat upon completion. Impacts to Swainson's Hawk and other raptor are considered significant.	PS	BR-3. If construction is proposed during the raptor breeding season (February – August), a focused survey for migratory bird nests shall be conducted within 30 days prior to the beginning of construction activities by a qualified biologist in order to identify active nests on the site. If active nests are found, no construction activities shall take place within 500 feet of the nest until the young have fledged. Trees containing nests that must be removed as a result of project implementation shall be removed during the non-breeding season (September – January). If no active nests are found during the focused survey, no further mitigation will be required. BR-4. To mitigate for the loss of ~~179~~ 181.8 acres of Swainson's hawk foraging habitat, prior to the approval of Improvement	LS

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
	S	Plans or building permits, or recordation of Final Subdivision Map, whichever occurs first, the applicant shall perform one of the following: ~~BR-5.~~1. The project proponent shall preserve ~~89.5~~90.9 acres (0.50 acre for each acre lost) of similar habitat within a 10-mile radius of the project site. This land shall be protected through fee title or conservation easement (acceptable to the California Department of Fish and Game). ~~1.~~2. The project proponent shall, to the satisfaction of the California Department of Fish and Game, prepare and implement a Swainson's hawk mitigation plan that will include preservation of Swainson's hawk foraging habitat. ~~2.~~3. The project proponent shall submit payment of a Swainson's hawk impact mitigation fee per acre impacted to the Department of Planning and Community Development in the amount as set forth in Chapter 16.130 of the Sacramento County Code as such may be amended from time to time and to the extent that said Chapter remains in effect. ~~3.~~4. Should the County Board of Supervisors adopt a Swainson's hawk mitigation policy/program (which may include a mitigation fee) prior to the implementation of one of the measures above, the project proponent may be subject to that program instead.	LS

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
The portion of Gerber Creek located within the project area represents potential habitat for the giant garter snake and the northwestern pond turtle. Construction of creek improvements and construction near ~~the~~ Gerber Creek could impact both GGS and northwestern pond turtle. Impacts to GGS and northwestern pond turtle are potentially significant.	PS	~~BR-6.~~5. The project site shall be surveyed for giant garter snakes and the northwestern pond turtle by a qualified biologist within 24 hours prior to the start of construction activities (including clearing and grubbing) located within 200 feet of ~~Elder~~ Gerber Creek. Survey of the area shall be repeated if a lapse in construction activity of two weeks or greater occurs. If a giant garter snake and/or northwestern pond turtle is encountered during construction, activities shall cease until appropriate corrective measures have been completed or it has been determined that the snake and/or turtle will not be harmed. Giant garter snakes and northwestern pond turtles encountered during construction should be allowed to move away on their own. Capture and relocation of trapped or injured individuals shall only be attempted by personnel or individuals with current USFWS recovery permits. Any incidental take shall be reported to the USFWS at (916) 979-2725 and Department of Environmental Review and Assessment at (916) 874-7914 within one working day. Any giant garter snake and/or northwestern pond turtle sightings shall be reported within 24 hours to the Department of Environmental Review and Assessment at 874-7914.	LS
Vineyard Creek Subdivision The proposed project will impact 2.69 acres of waters of the United States. The proposed mitigation will ensure that this impact is less-than-significant.	S	~~BR-7.~~BR-6. To compensate for the loss of wetlands and waters of the U.S., one of the following measures shall be implemented: 1. Preserve or create wetlands sufficient to result in no net loss of wetland acreage, and protect their required watersheds as is necessary for the continued function of wetlands on the project site. The appropriate hearing body shall determine that project design, configuration, and wetland management plan, provides reasonable assurances that the wetlands will be	LS

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		protected and their long-term ecological health maintained. 2. Where a Section 404 Permit has been issued by the Corps of Engineers, or an application has been made to obtain a Section 404 Permit, the Mitigation and Management Plan required by that permit or proposed to satisfy the requirements of the Corps for granting a permit may be submitted for purposes of satisfying paragraph 1, provided a no net loss of wetlands is achieved. ~~and, provided, further, that such mitigation and management plan shall be subject to the independent, discretionary approval of the Board of Supervisors.~~ 3. Pay to the County of Sacramento an amount based on a rate of $35,000 per acre for the unmitigated/uncompensated wetlands, which shall constitute mitigation for purposes of implementing adopted no net loss policies and CEQA required mitigation. The payment shall be collected by the Department of Planning and Community Development at the time of Improvement Plan or Building Permit approval, whichever occurs earlier, and deposited into the Wetlands Restoration Trust Fund.	
Construction of the proposed project will remove 1.49 acres of vernal pools, habitat for the vernal pool fairy shrimp, vernal pool tadpole shrimp, and spadefoot toad. Removal of this habitat represents a significant impact.	S	~~BR-8.~~BR-7. The applicant shall compensate for impacts to vernal pool species through consultation with the U.S. Fish and Wildlife Service as outlined in Section 7 of the Endangered Species Act. The applicant shall implement all measures included in the Biological Opinion issued as a result of this consultation.	LS

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
Project construction has the potential to disturb nesting activities of listed birds of prey. In addition, the proposed project will remove ~~108~~ 104.8 acres of Swainson's Hawk foraging habitat upon completion. Impacts to Swainson's Hawk and other raptor are considered significant.	PS	~~BR-9.~~BR-8. If construction is proposed during the raptor breeding season (February – August), a focused survey for migratory bird nests shall be conducted within 30 days prior to the beginning of construction activities by a qualified biologist in order to identify active nests on the site. If active nests are found, no construction activities shall take place within 500 feet of the nest until the young have fledged. Trees containing nests that must be removed as a result of project implementation shall be removed during the non-breeding season (September – January). If no active nests are found during the focused survey, no further mitigation will be required. ~~BR-10.~~BR-9. To mitigate for the loss of ~~108~~ 104.8 acres of Swainson's hawk foraging habitat, prior to the approval of Improvement Plans or building permits, or recordation of Final Subdivision Map, whichever occurs first, the applicant shall perform one of the following: 1. The project proponent shall preserve ~~56~~ 52.4 acres (0.50 acre for each acre lost) of similar habitat within a 10-mile radius of the project site. This land shall be protected through fee title or conservation easement (acceptable to the California Department of Fish and Game). 2. The project proponent shall, to the satisfaction of the California Department of Fish and Game, prepare and implement a Swainson's hawk mitigation plan that will include preservation of Swainson's hawk foraging habitat. 3. The project proponent shall submit payment of a Swainson's hawk impact mitigation fee per acre impacted to the Department of Planning and Community Development in the amount as set forth in Chapter 16.130 of the Sacramento County Code	LS

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		as such may be amended from time to time and to the extent that said Chapter remains in effect. 4. Should the County Board of Supervisors adopt a Swainson's hawk mitigation policy/program (which may include a mitigation fee) prior to the implementation of one of the measures above, the project proponent may be subject to that program instead.	
During the April 2002 field assessment, a large tricolor blackbird colony of up to 500 pairs was nesting within the blackberry thicket along Elder Creek. Construction activities have the potential to disturb nesting activities and remove habitat. Impacts to Tricolor Blackbird are, therefore, potentially significant.	PS	~~BR-11.~~BR-10. Prior to the ~~issuance of a work authorization permit~~approval of grading plans, submit a Tricolored Blackbird Mitigation Plan to the California Department of Fish and Game (CDFG) for review and approval. The plan shall include the following: 1. Preliminary surveys to determine the presence of nesting tricolored blackbirds; 2. Avoidance of active nesting colonies present on the site to the extent possible through establishment of temporary setbacks around the colonies until a qualified biologist verifies that young birds have successfully fledged.	LS
The portion of Elder Creek located within the project area represents potential habitat for the giant garter snake and the northwestern pond turtle. Construction of creek improvements and construction near the Elder Creek could impact both GGS and northwestern pond turtle. Impacts to GGS and northwestern pond turtle are potentially significant.	PS	~~BR-12.~~BR-11. The project site shall be surveyed for giant garter snakes and the northwestern pond turtle by a qualified biologist within 24 hours prior to the start of construction activities (including clearing and grubbing) located within 200 feet of Elder or Gerber Creek. Survey of the area shall be repeated if a lapse in construction activity of two weeks or greater occurs. If a giant garter snake and/or northwestern pond turtle is encountered during construction, activities shall cease until appropriate corrective measures have been completed or it has been determined that the snake and/or turtle will not be harmed. Giant garter snakes and northwestern pond turtles	LS

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		encountered during construction should be allowed to move away on their own. Capture and relocation of trapped or injured individuals shall only be attempted by personnel or individuals with current USFWS recovery permits. Any incidental take shall be reported to the USFWS at (916) 979-2725 and Department of Environmental Review and Assessment at (916) 874-7914 within one working day. Any giant garter snake and/or northwestern pond turtle sightings shall be reported within 24 hours to the Department of Environmental Review and Assessment at 874-7914.	
Drainage Master Plan			
The modified drainage corridors will result in 4.85 acres of creek (low-flow channel), 17.55 acres of channel bottom/wetlands and 3.23 acres of wetland/riparian benches. Post-project wetland/riparian habitat acreages will total 25.63 acres, a net gain of nearly 11.80 acres of habitat.	LS	None	LS
Construction of the proposed project will remove 1.08 acres of vernal pools, habitat for the vernal pool fairy shrimp, vernal pool tadpole shrimp, and spadefoot toad. Removal of this habitat represents a significant impact.	S	~~BR-13.~~BR-12. The applicant shall compensate for impacts to vernal pool species through consultation with the U.S. Fish and Wildlife Service as outlined in Section 7 of the Endangered Species Act. The applicant shall implement all measures included in the Biological Opinion issued as a result of this consultation.	LS
Project construction has the potential to disturb nesting activities of listed birds of prey. Impacts to Swainson's Hawk and other raptors are considered potentially significant.	PS	~~BR-14.~~BR-13. If construction is proposed during the raptor breeding season (February – August), a focused survey for migratory bird nests shall be conducted within 30 days prior to the beginning of construction activities by a qualified biologist in order to identify active nests on the site. If active nests are found, no construction activities shall take place within 500 feet of the nest until the young have fledged. Trees containing nests that must be removed as a result of project implementation shall be removed during the non-breeding season (September –	LS

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		January). If no active nests are found during the focused survey, no further mitigation will be required.	
The portions of Elder Creek and Gerber Creek located within the project area represent potential habitat for the giant garter snake and the northwestern pond turtle. Construction of creek improvements could impact both GGS and northwestern pond turtle. Impacts to GGS and northwestern pond turtle are potentially significant.	PS	~~BR-15.~~BR-14. The project site shall be surveyed for giant garter snakes and the northwestern pond turtle by a qualified biologist within 24 hours prior to the start of construction activities (including clearing and grubbing) located within 200 feet of Elder and Gerber Creek. Survey of the area shall be repeated if a lapse in construction activity of two weeks or greater occurs. If a giant garter snake and/or northwestern pond turtle is encountered during construction, activities shall cease until appropriate corrective measures have been completed or it has been determined that the snake and/or turtle will not be harmed. Giant garter snakes and northwestern pond turtles encountered during construction should be allowed to move away on their own. Capture and relocation of trapped or injured individuals shall only be attempted by personnel or individuals with current USFWS recovery permits. Any incidental take shall be reported to the USFWS at (916) 979-2725 and Department of Environmental Review and Assessment at (916) 874-7914 within one working day. Any giant garter snake and/or northwestern pond turtle sightings shall be reported within 24 hours to the Department of Environmental Review and Assessment at 874-7914.	LS
Water Treatment Facility			
The proposed project has the potential to impact Waters of the United States including vernal pools. The proposed mitigation will ensure that this impact is less-than-significant.	PS	~~BR-16.~~BR-15. To compensate for the loss of wetlands and waters of the U.S., one of the following measures shall be implemented: 1. Preserve or create wetlands sufficient to result in no net loss of wetland acreage, and protect their required watersheds as is necessary for the continued function of wetlands on the project site. The appropriate hearing body shall determine that	LS

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		project design, configuration, and wetland management plan, provides reasonable assurances that the wetlands will be protected and their long-term ecological health maintained. 2. Where a Section 404 Permit has been issued by the Corps of Engineers, or an application has been made to obtain a Section 404 Permit, the Mitigation and Management Plan required by that permit or proposed to satisfy the requirements of the Corps for granting a permit may be submitted for purposes of satisfying paragraph 1, provided a no net loss of wetlands is achieved. ~~and, provided, further, that such mitigation and management plan shall be subject to the independent, discretionary approval of the Board of Supervisors.~~ 3. Pay to the County of Sacramento an amount based on a rate of $35,000 per acre for the unmitigated/uncompensated wetlands, which shall constitute mitigation for purposes of implementing adopted no net loss policies and CEQA required mitigation. The payment shall be collected by the Department of Planning and Community Development at the time of Improvement Plan or Building Permit approval, whichever occurs earlier, and deposited into the Wetlands Restoration Trust Fund.	
Construction of the proposed project has the potential to impact vernal pools, habitat for the vernal pool fairy shrimp, vernal pool tadpole shrimp, and spadefoot toad. Removal of this habitat represents a significant impact.	PS	~~BR-17.~~BR-16. The applicant shall compensate for impacts to vernal pool species through consultation with the U.S. Fish and Wildlife Service as outlined in Section 7 of the Endangered Species Act. The applicant shall implement all measures included in the Biological Opinion issued as a result of this consultation.	LS

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
Project construction has the potential to disturb nesting activities of listed birds of prey, and remove Swainson's hawk foraging habitat. Impacts to Swainson's Hawk and other raptor are considered potentially significant.	PS	~~BR-18.~~BR-17. If construction is proposed during the raptor breeding season (February – August), a focused survey for migratory bird nests shall be conducted within 30 days prior to the beginning of construction activities by a qualified biologist in order to identify active nests on the site. If active nests are found, no construction activities shall take place within 500 feet of the nest until the young have fledged. Trees containing nests that must be removed as a result of project implementation shall be removed during the non-breeding season (September – January). If no active nests are found during the focused survey, no further mitigation will be required. ~~BR-19.~~BR-18. To mitigate for the loss of Swainson's hawk foraging habitat, prior to the approval of Improvement Plans, the applicant shall perform one of the following: 1. The project proponent shall preserve acreage at a rate of 0.50 acre for each acre lost of similar habitat within a 10-mile radius of the project site. This land shall be protected through fee title or conservation easement (acceptable to the California Department of Fish and Game). 2. The project proponent shall, to the satisfaction of the California Department of Fish and Game, prepare and implement a Swainson's hawk mitigation plan that will include preservation of Swainson's hawk foraging habitat. 3. The project proponent shall submit payment of a Swainson's hawk impact mitigation fee per acre impacted to the Department of Planning and Community Development in the amount as set forth in Chapter 16.130 of the Sacramento County Code as such may be amended from time to time and to	LS

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		the extent that said Chapter remains in effect. 4. Should the County Board of Supervisors adopt a Swainson's hawk mitigation policy/program (which may include a mitigation fee) prior to the implementation of one of the measures above, the project proponent may be subject to that program instead.	
CULTURAL RESOURCES			
Vineyard Point Subdivision			
No sites or building were found to be eligible for inclusion in the National Register. No prehistoric, archaeological sites were encountered during the field investigation of the Survey Area. However, the lack of surface evidence does not preclude the existence of important, subsurface cultural materials. There is a potential to unearth buried cultural remains during future project construction activities. Caution should, therefore, be exercised during future development activities. Any accidental encountered of previously unidentified cultural materials will require notification of the Department of Environmental Review and Assessment. If skeletal remains are encountered, both the Department of Environmental Review and Assessment and the County Coroner must be immediately notified. With the implementation of the mitigation proposed in the prior EIR, however, these potential impacts to cultural resources in the Vineyard Creek subdivision are considered less than significant.	PS	Mitigation included in the prior EIR is sufficient to ensure this potential impact is less-than-significant.	LS
Vineyard Creek Subdivision			
The Vineyard Point subdivision was a part of the original Survey Area which was included in the prior EIR. No potentially significant archeological or architectural resources were discovered during the surveys. However, this does not preclude the existence of important,	PS	Mitigation included in the prior EIR is sufficient to ensure this potential impact is less-than-significant.	LS

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
subsurface cultural materials. With the implementation of the mitigation proposed in the prior EIR, however, these potential impacts to cultural resources in the Vineyard Point subdivision are considered less than significant.			
WATER SUPPLY			
The prior EIR concluded that implementation of the North Vineyard Station Specific Plan Water Master Plan would result in less than significant water supply impacts. However, the implementation of the NVSSP Water Master Plan was contingent on the implementation of the Water Master Plan for Areas Adjacent to the Zone 40 Water Supply Master Plan Update's Study Area, as well as fulfillment of the City of Sacramento American River Place of Use. Until all agreement are in place to wheel "firm" surface water supplies to the Specific Plan area, the project will contribute to the incremental decline in ground water levels. This incremental decline and the dewatering of private wells is a regional issue, beyond the scope of the proposed project. However, the project would add to the significant adverse cumulative impacts that regional development has on ground water supplies. Compliance with the requirements of the Sacramento County Water Agency will ensure that impacts are less-than-significant.	LS	None	LS
SEWER SERVICE			
The revised sewer study does not include the proposed water treatment facility, which has the potential to contribute a significant amount of effluent into the sewer system. In addition, the proposed increased development densities anticipated from the density bonus program will also result in incremental increases in effluent generation from the Plan area. The County Sanitation District-1 (CSD-1) staff has indicated the increased flows will necessitate revised sewer studies and the planned sizing of the Gerber Road Trunk would have to be increased. Since	LS	None	LS

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
the Gerber Road Trunk sewer line has yet to be constructed, these necessary adjustments can be made and the impact of the increased flows is expected to be less than significant. The Gerber Trunk will tie into the Bradshaw 6A and 6B Interceptors, and the Central Interceptor further downstream, where there will be adequate capacity in to handle the increased flows from the water treatment facility and expected small to moderate increases in dwelling units through the density bonus program. CSD-1 indicated that the revised sewer study need not be included in this Draft EIR, but would be required prior to installation of the Gerber Road Trunk (pers. comm., Matt Morgan, CSD-1, June 15, 2004). Because potential impacts from the water treatment facility on the Gerber Road Trunk will be evaluated prior to installation of the trunk line and sized appropriately, lack of sewer capacity should not be an impediment to future development. Therefore impacts associated with sewer service are considered less-than-significant.			
DRAINAGE AND HYDROLOGY			
The revised DMP concluded that Basin E20 was not needed to mitigate downstream impacts from development of the NVSSP area. From a technical standpoint, the entire NVSSP area could be developed implementing the concept of interim storm drainage pumping. Development can be phased with interim pumping, and meet the drainage and flood control objectives, policies and standards of Sacramento County. Impacts associated with drainage are less-than-significant.	LS	None	LS

MITIGATION MONITORING AND REPORTING PROGRAM

Comply with the Mitigation Monitoring and Reporting Program (MMRP) for this project as follows:

1. The applicant shall comply with the MMRP for this project, including the payment of 100% of the Department of Environmental Review and Assessment staff costs, and the costs of any technical consultant services incurred during implementation of the MMRP. The initial estimate of these costs is $. If the initial estimate exceeds the actual monitoring costs, the balance shall be refunded to the applicant, and if the actual monitoring costs exceed the initial estimate, the applicant shall be responsible to pay the additional amount.

2. Until the MMRP has been recorded and the estimated MMRP fee has been paid, no final parcel map or final subdivision map for the subject property shall be approved; and no encroachment, grading, building, sewer connection, water connection or occupancy permit from Sacramento County shall be approved.

REQUESTS AND REQUIREMENTS OF VARIOUS AGENCIES

A. Sacramento Municipal Utility District

1. Vineyard Creek – Large Lot Tentative Map

    a. Dedicate a 12.5-foot public utility easement for overhead and underground facilities and appurtenances adjacent to Florin Road.

    b. Dedicate a 12.5-foot public utility easement for underground facilities and appurtenances adjacent to all public street rights of ways.

    c. Dedicate any Irrevocable Offer of Dedication and 12.5-feet adjacent hereto as a public utility easement for underground facilities and appurtenances.

    d. The owner/developer of the above noted property MUST disclose to future/potential buyer the following existing and potential 69 & 230 kV facilities.

    There is an existing overhead electrical 69 & 230 kV line located adjacent to the East property line.

2. Vineyard Creek – Small Lot Vesting Tentative Subdivision Map

    a. Dedicate a 12.5-foot public utility easement for underground facilities and appurtenances adjacent to all public street rights of ways.

    b. Dedicate the Landscape Corridors adjacent to Florin Road as a public utility easement for overhead and underground facilities and appurtenance.

    c. Dedicate the Landscape Corridors as a public utility easement for underground facilities and appurtenances.

    d. The owner/developer of the above noted property MUST disclose to future/potential buyer the following existing and potential 69 & 230 kV facilities.

    There is an existing overhead electrical 69 & 230 kV line located adjacent to the East property line.

3. Vineyard Point – Large Lot Tentative Parcel Map

    a. Dedicate a 12.5-foot public utility easement for underground facilities and appurtenances adjacent to all public ways.

b. Dedicate a 12.5-foot public utility easement for underground and overhead appurtenances adjacent to Bradshaw Road.

c. Dedicate the Irrevocable Offer of Dedication and 12.5 feet adjacent thereto as a public utility easement for underground facilities and appurtenances.

d. Designate a parcel of land for an electric substation to be acquired by the Sacramento Municipal Utility District having an approximate size of 150 feet by 150 feet of net useable area. The tentative location will be within the Vineyard Point development. The exact size and location of the substation site shall be by mutual agreement of SMUD and the property owners prior to the recordation of the final map.

e. Any revisions or deletions relative to the above conditions must be submitted in writing by the Real Estate section of SMUD. The County of Sacramento should accept no verbal or other written agreements.

f. The owner/developer must disclose to future/potential owners the existing or proposed 69kV electrical facilities.

~~g.~~4. Vineyard Point – Small Lot Vesting Tentative Subdivision Map

~~h.~~a. Dedicate a 12.5-foot public utility easement for underground facilities and appurtenances adjacent to all public ways.

~~i.~~b. Dedicate a 12.5-foot public utility easement for underground and overhead appurtenances adjacent to Bradshaw Road.

~~j.~~c. Designate a parcel of land for an electric substation to be acquired by the Sacramento Municipal Utility District having an approximate size of 150 feet by 150 feet of net useable area. The tentative location will be within the Vineyard Point development. The exact size and location of the substation site shall be by mutual agreement of SMUD and the property owners prior to the recordation of the final map.

~~k.~~d. Any revisions or deletions relative to the above conditions must be submitted in writing by the Real Estate section of SMUD. The County of Sacramento should accept no verbal or other written agreements.

~~l.~~e. The owner/developer must disclose to future/potential owners the existing or proposed 69kV electrical facilities.

B. Land Division & Site Improvement Review

1. Vineyard Creek – Large Lot Tentative Map

a. Offsite portion of 50-foot IOD adjacent to Parcels 6 and 7 must be secured prior to recordation.

b. Dedicate a standard 12.5-foot Public Utility Easement for underground facilities and appurtenances adjacent to all public ways, private drives and/or Irrevocable Offer of Dedication (IOD).

c. Prior to recordation of a final map or certificate of compliance, dedicate land or pay in lieu fees, or both, for park purposes, as required by and in accordance with the procedures and standards set forth in Chapter 22.40, Title 22 of the Sacramento County Code.

2. Vineyard Creek – Small Lot Vesting Tentative Subdivision Map

a. Secure offsite right of way for "L" Way and "7" Court; "G" circle and "B" Way, and install public street improvements pursuant to the Sacramento County Improvement Standards.

b. Dedicate a standard 12.5-foot Public Utility Easement for underground facilities and appurtenances adjacent to all public ways, private drives and/or Irrevocable Offer of Dedication (IOD).

c. Comply with all requirements of Chapter 1, Article 5, Title III, of the Sacramento County Zoning Code, relating to walls and landscape corridors adjacent to streets, including required maintenance provisions.

d. Prior to recordation of a final map or certificate of compliance, dedicate land or pay in lieu fees, or both, for park purposes, as required by and in accordance with the procedures and standards set forth in Chapter 22.40, Title 22 of the Sacramento County Code.

3. Vineyard Creek – Rezone

a. Grant the County right-of-way for Florin Road, based on a 108-foot standard, and Waterman Road, based on an 84-foot standard, and install public street improvements pursuant to the Sacramento County Improvement Standards.

C. Southgate Recreation and Park District

1. Comments and recommendations for Vineyard Creek Subdivision

a. Landscape Corridors shall be a minimum of 25 feet wide with a soundwall, along Florin Road and Waterman Road, and will be accepted by the District (proposed Lots F, G, H, I, J, & K). The Developer shall dedicate the landscape corridors to Southgate as a gift deed and be fully developed by the Developer with plans and specifications to be approved by the District. Corridors shall have a square curb and meandering six foot wide pathway separated from traffic. The District shall accept the completed landscape corridors after they have passed inspections and shall maintain the landscape corridors through assessment district proceeds. It is understood that the District does not maintain subdivision signage. The District does not require

subdivision entrance lighting, however, more residents are requesting landscape lighting to illuminate subdivision entryways and street names. In lieu of lighting the District does ~~requrest~~request the installation of wiring and connection to the electric box, on each side of Lots F and H at A Drive and Waterman Road, on each side of Lots H and J of F Way at Waterman Road, and on the east side of Lot K on Florin Road at L Way (for future installation of lighting, should it become necessary).

b. The Developer shall install a 6' high masonry wall for lots that back up or side-on to the landscape corridors along Florin Road, Waterman Road and A Drive. The design for all masonry walls shall be treated with graffiti-resistant coating and the design approved by the District. A Rain Bird maxicom controller, with telephone line and electricity shall be provided to tie into the District's computerized irrigation system as well as a certifiec reduced pressure backflow device.

c. The Developer shall consent to the inclusion of this subdivision within the North ~~Vioneyard~~Vineyard Station Financing District, which will be a Landscaping and Lighting Assessment District or a Mello Roos Community Facilities District, and the Southgate District-wide Landscaping and Lighting Assessment District. The Developer shall be responsible for notification to all subsequent purchasers of parcels of land of the inclusion within said financing districts. These financing districts will be established by the District for additional improvements and ongoing maintenance and operations.

d. As determined by the County Board of Supervisors, this subdivision will be included in the Southgate Recreation and Park District component of the North Vineyard Station Public Facilities Financing Plan. The District reserves the right to revise park land dedication requirements and financing mechanisms to adapt to changes resulting from modifications to the policy or the creation of a new Plan by the County of Sacramento.

e. The District will accept Park Lot C as identified on the revised Tentative Subdivision Map dated February 2004, with lot C being approximately 2.9± gross acres in size. The additional unmet Quimby requirements for the subdivision shall include the 11.4± gross acres adjacent to Park Lot C. The District will not give Quimby credit for property encumbered or otherwise with restrictions. Additional park site property shall be immediately adjacent to Park Lot C, as shown on the map, and conveyed to District at the ~~Same~~same time the 2.9 acres are conveyed. Since there will be an estimated over-dedication of 5.1 acres of parkland for this project, the District agrees to enter into a Developer Requirement Agreement, with the Developer, which shall address the Quimby credits for this project.

f. The District requests review of all Army Corp of Engineer, Fish and Game, Fish and Wildlife or any other State or Federal Agency comments and requirements as well as the final permit and conditions as they pertain to the

open space property, and will then determine acceptance of the conditions and respective property.

g. Open space areas shall front on a public road per County of Sacramento General Plan requirements. On areas of Open Space that front on a public street, a "setback" area of approximately 10 feet (from back of sidewalk into Open Space area) shall be minimally landscaped by Developer (to District's specifications) to provide for an aesthetic transition into the Open Space area. Similar to the landscape corridors; Developer shall bear all costs associated with the installation of related infrastructure, post and cable fencing and minimal landscaping (including drip irrigation). Any lots, including the multifamily Lot 378, backing or siding on to the open space area shall have a 6' high open, tubular steel fence constructed by Developer, and approved by the District. Fencing belongs to and is the responsibility of the residential property owner. Open space will have post and cable fencing along the back edge of the open space landscaped area, a vertical curb and connected 6-foot wide ~~cocrete~~concrete sidewalk along all Streets fronting open space area. Irrigation system to be connected to the District's maxicom computerized irrigation system inclusive of: controller, phone line and electricity. The District requests an ADA accessible drinking fountain with backflow prevention device along with an appropriate drainage inlet, be provided by the Developer on Lot B, adjacent to parcel 170. Open Space Lots A, B & E (approximately 9.5 acres) and as shown on the Tentative Map dated February 2004, shall be dedicated to the District as a gift with a clear title report, and be fully developed and improved by the developer with plans and specifications to be approved by the District. No Quimby credit or Developer Fee credit will be given for this open space or the improvements. Developer shall pay for these improvements. Location of improvements to be determined by District and Developer. The Developer shall install street lighting along streets fronting on all open space areas, on the open space side of the street. The District shall accept the completed open space area after they have passed inspections, accepted conditions required by the Army Corp of Engineers, and received a clear title report. The Developer shall agree to the inclusion in an additional assessment zone, to go towards the maintenance of the trail and open space area. The District shall maintain the trails and open space areas through assessment district zone proceeds. The District shall not own or otherwise take responsibility for creek channel maintenance or drainage functions.

h. The developer shall assure that the park land to be dedicated is appropriately graded to the District's specifications and pursuant to County standard; shall provide adjoining streets, sidewalks with vertical curbs; electrical, phone, storm drainage, sewer, and water stubs; connect to and provide water meter, reduced pressure backflow preventer; and pay all permit fees including building, sewer, water meter, water development and drainage fees for the park sites and landscape corridors in order to allow for improvements to the park lots, open space lots (limited) and landscape corridors within this

subdivision. Rain Bird maxicom controllers, with telephone line and electricity shall be connected to the District's computerized irrigation system.

i. It is understood that it is the responsibility of the property owner to care for and keep maintained the ten foot pedestrian easements and is not a part of the Landscape Corridors to be conveyed to the District, as shown on the Tentative subdivision map dated February 2004.

j. The District would appreciate the opportunity to further comment on this map after the Public Facilities Financing Plan has been approved in order to make any necessary adjustments.

k. In the event that the Central California Traction Railroad Corridor is abandoned and the County of Sacramento determines that these tracks shall become part of a Rails-to-Trails system, the District desires that the developer provide a landscaped access to this trail system from the proposed subdivision. This access should be a minimum of 30 feet in width, and be dedicated to the District, with no land dedication credits given to the developer for this acreage. The location can be determined at a future point in time, however, access points to consider could include but are not limited to access from the proposed Elder Creek Trail as it intersects the CCTRR. In lieu of the CCTRR becoming a trail, the District requests a low flow crossing across Lot B, adjacent to parcel 170 and on the west side of the CCTRR and a 50' wide easement along the southwest side of the CCTRR, to facilitate the bicycle/pedestrian trail planned for the North Vineyard Station community. This crossing is key to providing continuity to this trail system.

l. The District desires to work with the Developer and County Water Resources in identifying potential recreational uses of the 7.4 acre detention basin site. Due to the basin's relationship to the Park Lot C, active and overlapping joint use is realistic. In order to accommodate recreational uses advance planning needs to occur to address design issues including and not limited to access points and parking. A public access point and parki~~8~~ng area needs to be identified since the access point identified next to parcel 169 is for maintenance purposes only.

m. The developer shall construct a bicycle/pedestrian trail and landscaping along Gerber and Elder Creeks as required under the North Vineyard Station PFFP and as per District requirements for standards and location. The District has identified on the Drainage Corridor/Open space map the specific location of the trail, provided to MacKay and Somps in February 2004. For purposes of the Vineyard Creek subdivision, the trail shall be on the eastern/southern side of Elder Creek along the sewer interceptor path, continuing northerly to Florin Road. As mentioned above, in lieu of the CCTRR becoming a trail, the District requests a low flow crossing across Lot B, adjacent to parcel 170 and on the west side of the CCTRR and the construction of a northwesterly trail within a 50' wide easement to follow the western side of the CCTRR to Florin

Road, to facilitate the bicycle/pedestrian trail planned for the North Vineyard Station community. This crossing is key to providing continuity to this trail system. There will be 2 trails ~~convergingon~~converging on to Florin Road in order to negotiate around the CCTRR, for this subdivision. ~~Connecdtions~~Connections from the subdivision to the trail shall be provided a the locations indicated on the attached map or as determined by the District and Developer at a future date, due to changed conditions. Points of trail connections from the sidewalk to the trail shall be near the northwest corner of Lot D, at the end of H Circle by Parcel 170, between Parcels 63 and 41 on K Circle, between Parcels 20 and 21 on 11 Court, and between Parcels 5 and 6 on 12 Court. Additional trail connections shall be made from the Detention Basin and Park Lot. The trails are part of the overall Gerber Creek and Elder Creek Open Space area as identified in the Sacramento County land use plan. Improvements along bike trail and open space corridors shall compliment the design planned in the North Vineyard Station Plan. Trail and Open space area shall be gift deeded to the Southgate Recreation and Park District with no Quimby credits given for this area. Developer shall enter into a Developer Requirement Agreement for these improvements and may be credited developer ~~feess~~fees for all agreed to bike trail improvements. Due to the proximity of the creek to the subdivision the District requests a southern public access point and connection from the subdivision to the Gerber Creek trails. Location of creek access to be mutually determined by the Developer and the District. ~~Tril~~Trail alignment shall meander throughout the corridor. Trail design shall be provided to Developer by District. Typically, the trail shall not be closer than 20' from the top of bank along the creek and outside of any environmental constraints. Trail setback from the rear or side of residential property lines and streets shall be as far as possible, with a minimum distance of 50'. It is important that adequate space be provided in order to provide separation for bicycle, pedestrian and equestrian uses.

n. The District has previously had discussions with the County Sanitation District regarding the joint use, improvement and maintenance of land reserved for sewer interceptor and planned for trails. The Southgate District goes on record as supporting this joint use concept and wherever possible and feasible project planning should include and incorporate complimentary design and use of said land. A similar joint use agreement for this area is highly recommended.

2. Comments and recommendations for Vineyard Point Subdivision

a. Landscape Corridors, a minimum of 25 feet wide with soundwall, along Gerber and Bradshaw Road will be accepted by the District (proposed Lots J, K, L & M). In this revised map Landscape corridor lot K was eliminated when Lot G was added to the map. There should be a continuous corridor and sidewalk on Gerber Road. Lot K needs to be re-inserted on the map. The Developer shall dedicate the landscape corridors to Southgate as a gift deed and be fully developed by the Developer with plans and specifications to be

approved by the District. Corridors shall have a square curb and meandering pathway separated from traffic. The District shall accept the completed landscape corridors after they have passed inspections and shall maintain the landscape corridors through assessment district proceeds. It is understood that the District does not maintain subdivision signage. The District does not require subdivision entrance lighting, however, as a note we have been receiving more comments from residents requesting landscape lighting to illuminate subdivision entryways and street names. This amenity is only a suggestion and not a requirement. In lieu of lighting the District does request the installation of wiring and connection to the electric box, and the running of the wire through conduit under the following streets, on each side of 'A' Drive at Bradshaw Road and on each side of 5 Street at Gerber Road (for future installation of lighting, should it become necessary).

b. The Developer shall install a 6' high masonry wall for lots that back up or side-on to the landscape corridor along Gerber Road and Bradshaw Road. The design for all masonry walls shall be treated with graffiti-resistant coating and the design approved by the District. A Rain Bird maxicom controller, with telephone line and electricity shall be provided to tie into the District's computerized irrigation system as well as a certified reduced pressure backflow device.

c. The Developer shall consent to the inclusion of this subdivision within the North Vineyard Station Financing District, which will be a Landscaping and Lighting Assessment District or a Mello Roos Community Facilities District, and the Southgate District-wide Landscaping and Lighting Assessment District including the annexation to a new Zone in a landscaping and lighting assessment district, to ensure that adequate funding is available to pay for all costs associated with the repair, maintenance and monitoring in perpetuity for the capital development and operation and maintenance of the park facilities, open space property, trails and related improvements. The Developer shall be responsible for notification to all subsequent purchasers of parcels of land of the inclusion within said financing districts. These financing districts will be established by the District for additional improvements and ongoing maintenance and operations.

d. As determined by the County Board of Supervisors, this subdivision will be included in the Southgate Recreation and Park District component of the North Vineyard Station Public Facilities Financing Plan. The District reserves the right to revise park land dedication requirements and financing mechanisms to adapt to changes resulting from modifications to the policy or the creation of a new Plan by the County of Sacramento.

e. The District will accept Park Lot A as identified on the revised Tentative Subdivision Map dated December 15, 2003, with lot A being approximately 10.0 gross acres in size. The 1.8 gross acres previously shown as park lot D shall be removed and the acreage added to park lot A. An amendment to the

North Vineyard Station Specific Plan will still allow for a future 5.0 acre park site immediately east of the former park lot D. Any additional unmet Quimby requirements for the subdivision shall be paid to the District in in lieu fees.

f. The Developer shall install a 6' high masonry wall for lots that back up or side-on to the future park site on 11 Street (former Park Lot D). The design for all masonry walls shall be treated with graffiti-resistant coating and the design approved by the District.

g. The District will accept the removal of the formerly designated Parkway Lot E (as previously shown on the Tentative Subdivision Map dated October 10, 2002) from this map.

h. The developer shall assure that the land to be dedicated is appropriately graded to the District's specifications and pursuant to County standard; shall provide adjoining streets, sidewalks with vertical curbs; electrical, phone, storm drainage, sewer, and water stubs; connect to and provide water meter, reduced pressure backflow preventer; street lights fronting on park and open space property; and pay all permit fees including building, sewer, water meter, water development and drainage fees for the park site(s) and landscape corridors in order to allow for improvements to the park lot(s) and landscape corridors within the subdivision. Rain Bird maxicom controllers, with telephone line and electricity shall be connected to the District's computerized irrigation system. Additionally, traffic calming measures shall be initiated on 11 Street, at the points where it intersects 4 Street, in order to provide for a safe pedestrian crossing to and from the future park.

i. It is understood that it is the responsibility of the property owner to care for and keep maintained the ten-~~-~~foo~~d~~t landscaped pedestrian easements.

j. Lot N Landscape Corridor, as shown on the Tentative subdivision map dated December 15, 2003 shall also extend around the northern side of Lot C to shield the tank site lot and to provide an aesthetic view from the park site. It is understood that it is the responsibility of the property owner to care for and keep maintained this corridor. It is also understood that there will be continuous sidewalk along this corridor.

k. The District would appreciate the opportunity to further comment on this map after the Public Facilities Financing Plan has been approved in order to make any necessary adjustments.

l. In the event that the Central California Traction Railroad Corridor is abandoned and the County of Sacramento Determines that these tracks shall become part of a Rails-to-Trails system, the District desires that the developer provide a landscaped access to this trail system from the proposed subdivision. This access should be a minimum of 30 feet in width, and be dedicated to the District, with no land dedication credits given to the

developer for this acreage. The location can be determined at a future point in time. Design around the corridor and access should provide for the visibility to address security concerns, as requested by the Sheriff's Department and approved by the District.

m. The District desires to work with the Developer and County Water Resources in identifying potential recreational uses of the 9.7 acre detention basin site. In order to accommodate recreational uses an access point and parking area would need to be provided from the subdivision. This access point and parking area can be determined at a future point in time.

n. The District has master planned a trail along Gerber Creek, which is included as part of the North Vineyard Station Specific Plan. Due to the proximity of the creek to the subdivision the District requests a public access point from the subdivision to the Gerber Creek corridor and a connection to the future trail. Location of creek access to be mutually determined by the Developer and the District.

D. Recommendations/Requirements of the County Department of Transportation:

1. Vineyard Creek Subdivision

a. The spacing between A Drive and F Way must be a minimum of 420 feet apart in order to accommodate two left turn pockets on Waterman Road.

b. Construct a minimum 48-foot street section including 36 feet of pavement and a 12-foot median for the offsite right-of-way on Waterman Road per the North Vineyard Station P.F.F.P.

c. Grant the County right-of-way on Waterman Road based on either a 72-foot modified arterial without a median or a 76-foot modified arterial with a landscape median pursuant to the North Vineyard Station Specific Plan, the Sacramento County Improvements Standards, and to the satisfaction of the Department of Transportation.

d. Install public street improvements along Waterman Road pursuant to the North Vineyard Station Specific Plan, the Sacramento County Improvement Standards, and to the satisfaction of the Department of Transportation.

e. Show the required raised median on the Waterman Road street section.

f. Dedicate additional right-of-way on Waterman Road and A Drive for intersection widening per the Sacramento County Improvement Standard Drawing 4-6B and to the satisfaction of the Department of Transportation. Note: A bus turnout will be required on Waterman Road.

g. Grant the County right-of-way on Florin Road based on a 96-foot modified thoroughfare pursuant to the North Vineyard Station Specific Plan, the

Sacramento County Improvement Standards, and to the satisfaction of the Department of Transportation.

h. Install public street improvements along Florin Road pursuant to the North Vineyard Station Specific Plan, the Sacramento County Improvement Standards, and to the satisfaction of the Department of Transportation.

i. Dedicate additional right-of-way on Florin road and L Way for intersection widening per the Sacramento County Improvement Standard Drawing 4-5 and to the satisfaction of the Department of Transportation. Note: A bus turnout will be required on Florin Road.

j. No more than 100 units with access to L Way shall be constructed until there is a second point of access.

k. Lot 380 shall not be allowed to develop unless access can be provided to the west in order to avoid crossing the CCTC.

l. Reconfigure area comprising G Circle in order to bring street elbow into compliance with County standards.

m. Dedicate the landscaped lots to the County of Sacramento and provide a maintenance entity with an ongoing funding source. The maintenance entity shall be approved and found acceptable by County representatives. Annexation to a current Lighting and Landscape District or a Mello Roos Community Finance District may be possible and is the preferred course of action.

n. Traffic control devices shall be installed where needed to the satisfaction of the Department of Transportation. Traffic control locations will be determined at time of improvement plan submittal.

2. Vineyard Point Subdivision

a. Grant the County right-of-way on Gerber Road based on a 72-foot modified standard and install public street improvements pursuant to Sacramento County Improvement Standards and to the satisfaction of the Department of Transportation.

b. Grant the County right-of-way on Bradshaw Road based on a 96-foot modified standard and install public street improvements pursuant to Sacramento County Improvement Standards and to the satisfaction of the Department of Transportation.

c. Dedicate additional right-of-way on Bradshaw Road and ‘11’ Street for intersection widening per Standard Drawing 4-8 of the Sacramento County Improvement Standards and to the satisfaction of the Department of Transportation. Note: A bus turnout will be required on Bradshaw Road.

d. Dedicate additional right-of-way on Bradshaw Road and ‘9’ Street for intersection widening per Standard Drawing 4-8 of the Sacramento County Improvement Standards and to the satisfaction of the Department of Transportation. Note: A bus turnout will be required on Bradshaw Road.

e. Dedicate additional right-of-way on Gerber Road and ‘5’ Street for intersection widening per Standard Drawing 4-8 of the Sacramento County Improvement Standards and to the satisfaction of the Department of Transportation. Note: A bus turnout will be required on Gerber Road. In addition, the median at the intersection of ‘P’ Drive/’O’ Circle and ‘5’ Street will need to be redesigned to allow full turning movements at that intersection.

f. Provide a 30-foot half width along park frontages for on-street parking. Note: If the park will be providing recreational areas such as soccer fields and/or baseball fields, then on site parking will be required.

g. Stop signs should be installed where needed to the satisfaction of the Department of Transportation. Stop sign locations will be determined at time of improvement plan submittal.

h. The proposed public street entrance from Gerber Road should be a minimum of 50 feet in width, excluding median width, for a distance of 100 feet per the Sacramento County Improvement Standards and to the satisfaction of the Department of Transportation.

i. The proposed public street entrance from Bradshaw Road should be a minimum of 50 feet in width, excluding median width, for a distance of 100 feet per the Sacramento County Improvement Standards and to the satisfaction of the Department of Transportation.

j. Visibility easements should be included where needed per the Sacramento County Improvement Standards and to the satisfaction of the Department of Transportation.

k. All pedestrian access ramps affected by this project must be installed/upgraded pursuant to the State of California Title 24 Code of Regulations and to the satisfaction of the Department of Transportation.

E. Sacramento Metropolitan Air Quality Management District

1. The use of an aqueous base alternative fuel as a fuel for heavy-duty, off-road, diesel-powered equipment is also recommended. These alternative fuels will reduce NOx emissions by approximately 14% and PM10 emissions by approximately 63%.

2. Limit diesel engine idling to not more than 5 minutes, before turning off the engine.

3. During the construction phase(s) of the project, District Rule 403 – Fugitive Dust, will apply. The developer/contractor is required to control dust emissions from earth moving activities, or any other construction activity, to prevent airborne dust from leaving the project site. District Rules are available at www.airquality.org.

4. Any architectural coatings used must comply with District Rule 442 – Architectural Coatings. The developer/contractor is required to use coatings that comply with the volatile organic compound content limits specified in Rule 442. Questions regarding Rule 442 should be directed to the District's Compliance Assistance Hotline at (916) 874-4884.

5. We recommend that all required street trees be a minimum 24-inch box size. Larger trees provide shade that not only reduce heat, but also are more attractive to pedestrians for short trips to parks and neighborhood facilities.

6. If gas appliances are to be used in the dwelling units, District staff recommends the use of low NOx (Nitrogen Oxides) furnaces, water heaters, and cooking facilities.

7. We recommend that the developer install "Energy-Star" labeled roofing materials.

8. We recommend that the project comply with SMUD Advantage (Tier II or III) energy standards.

9. We recommend that an AQ-15 Air Quality Plan be developed to mitigate the air quality impacts of the project. Submission and approval of the plan should be completed as a condition of approval for the project. The AQ Plan should include, but not be limited to, the mitigation measures listed above.

F. Sacramento County Water Agency

The SCWA requires the following conditions of approval be placed on all tentative maps and vesting tentative maps within the North Vineyard Station Specific Plan Area:

1. That Simple Title ownership or sale agreements for the WTP lands are completed prior to any Tentative Map approvals within the North Vineyard Station Specific Plan area. WTP lands shall be reserved per the guidelines contained in Chapter 22.50 of the Sacramento County Code and Government Title 7, Division 2, Article 4.(1/03).

2. That well sites be identified prior to Tentative map approvals for subdivisions within the North Vineyard Station Specific Plan area and reserved per the guidelines contained in Chapter 22.50 of the Sacramento County Code and Government Title 7, Division 2, Article 4.(1/03).

3. That well sites be reserved on the Final Subdivision Maps of subdivisions within the North Vineyard Station Specific Plan area.

4. That no more than a cumulative total of 2,530 equivalent dwelling units (EDUs) in Tentative Subdivision Map lots may be approved within the North Vineyard Station Specific Plan area until either surface water supply consistent with the approved NVS Water Supply Master Plan has been secured, or the SCWA Board of Directors finds that an acceptable alternative supply consistent with the Zone 40 Water Supply Master Plan has been secured.

Comments were also provided in regards to the Vineyard Creek Tentative Subdivision Map:

1. Destroy all abandoned wells on the proposed project site in accordance with the requirements of the Sacramento County Environmental Health Division. Clearly show all abandoned/destroyed wells on the improvement plans for the project. Prior to abandoning any existing agricultural wells, applicant shall use water from agricultural wells for grading and construction.

2. Prior to tentative subdivision map approval, prepare a Water Supply Master Plan, to the satisfaction of the Sacramento County Water Agency.

3. Prior to tentative subdivision map approval, the Sacramento County Water Agency requires either fee simple title or sale agreements or reservation agreements for a water treatment plant site as identified in the most current approved North Vineyard Station Specific Plan Water Supply Master Plan. In addition, prior to final map recordation, the affected property owner, future successors or interests shall enter into an agreement with SCWA consistent with Chapter 22.50 of the Sacramento County Code and Government Code Title 7, Division 2, Article 4.

4. The Sacramento County Water Agency (SCWA) will not issue water connection permits or sign improvement plans until adequate water supplies have been secured. In addition, the final map shall not be recorded until the SCWA has secured fee simple title to the North Vineyard Station WTP.

5. Prior to the issuance of any building permits for the project, the project developer/owner shall pay Zone 40 development fees applicable at the time of building permit issuance in accordance with Sacramento County Water Agency Ordinance No. 18.

6. Prior to the issuance of any building permits for the project, the project shall conform to the specific provisions of the Sacramento County Landscape Water Conservation Ordinance (Chapter 14.10 of the Sacramento County Code) to the satisfaction of the County Landscape/Oak Tree Coordinator.

G. County Sanitation District – 1

1. Provide a revised sewer study, to the satisfaction of the County Sanitation District-1 staff, to address the increased sizing needs for the Gerber Road Trunk Sewer in order to adequately accommodate anticipated effluent flows from the

proposed water treatment facility and potential increases in dwelling units through the density bonus program.

2. Vineyard Creek

   a. Connection to the public sewer system shall be required to the satisfaction of CSD-1. Sacramento County Improvement Standards apply to any on and off-site sewer construction.

   b. CSD-1 shall require an approved sewer study prior to the submittal of improvement plans for plan check to CSD-1. Portions of the subject project shall flow into the BR Florin Road Trunk Shed and other portions shall flow into the BR Gerber Road Trunk Shed in accordance with the Sanitary Sewer Study for the North Vineyard Station Specific Plan and the Sewage Facilities Expansion Master Plan.

   c. Each lot shall have a separate connection to the public sewer system.

   d. In order to obtain sewer service, construction of on and off-site public sewer will be required to the satisfaction of CSD-1.

   e. Construction of off-site public trunk sewer will be required in conformance with approved sewer studies and to the satisfaction of CSD-1. In accordance with the Connection Fee Ordinance, it will be necessary to schedule a meeting to discuss reimbursement requirements with appropriate CSD-1 staff prior to any trunk design.

   f. Design of all public sewers shall be coordinated with and approved by CSD-1. Sewer easements may be required. All sewer easements shall be dedicated to CSD-1, in a form approved by the District Engineer. All sewer easements shall be 20 feet in width and ensure continuous access for maintenance.

   g. The trunk and collector sewer system for the project will not be accepted for maintenance and building occupancy will not be granted until the downstream sewer system serving the project is also accepted for maintenance.

   h. Prior to the recordation of the Final Map the applicant will enter into and record an agreement, in a form approved by the District Engineer and District Counsel of Sacramento Regional County Sanitation District (SRCSD), to require the property owner(s) to reserve lands for acquisition by the District to install District pipelines and facilities for public health purposes and in conformance with the District Master plan. The District shall exercise the agreement and acquire the reserved lands within two years of the completion and acceptance of required public improvements. The area of land will be 75 feet wide, or as determined by SRCSD. The applicant shall coordinate the area required with SRCSD and clearly show the area by meets and bounds on the Final Maps.

i. A Temporary Construction Easement (TCE) will be required along both sides of the future interceptor. The required TCE shall be 42.5 feet wide on each side of the permanent 75-foot wide interceptor easement. The Final Maps shall clearly show the TCE.

j. Construction of any and all improvements, including but not limited to grading, streets, utilities, houses and other structures, within the TCE shall be prohibited until such time the TCE is released by SRCSD unless approved by the District Engineer

H. Sacramento Metropolitan Fire District

1. In every new building where the total floor area exceeds 3,599 square feet an automatic fire sprinkler system shall be installed and equipped with an electronic monitoring system. The system shall be designed and installed as per the guidelines of National Fire Protection Association standard 13, latest edition, and the Fire Prevention Standards of this fire district number 442.501.

2. The minimum required fire flow for commercial developments is outlined in the Uniform Fire Code, Table A-III-A-1, but shall not be less than 1500 gallons per minute at 20 pounds per square inch residual for a duration of two (2) hours.

3. The required fire flow for the proposed project will vary depending on the type of construction, total square footage of the structure(s) and weather or not a fire sprinkler system is provided or required. This determination will be made when the appropriate information is provided to our office.

4. Every building shall be accessible to fire district fire apparatus by means of an all-weather driving surface designed to meet Traffic Index 5.5. The access shall be a minimum of 20 feet wide and have a minimum turning radius of 40 feet inside and 60 feet outside. The minimum vertical clearance 13 feet 6 inches. The access roadways are to be extended within 150 feet of all portions of the exterior walls of the first story. Dead-end fire Department access roads in excess of 150 feet shall be provided with an approved means for turning around the fire apparatus. This fire apparatus access lane and turnaround shall be identified in accordance with the California Vehicle Code. The access roadways are to be provided prior to any construction or storage of combustible materials on site.

5. All fire department connections for the automatic fire extinguishing system shall be located within forty feet of a fire hydrant and a minimum of forty feet from any openings within the protected building.

6. Commercial buildings exceeding 5,000 square feet must be tested to verify adequate transmission and reception of public safety radio signals. These signals operate on the 800 MHz frequency. If reception or transmission is not adequate, 800 MHz radio amplification systems shall be installed in the building.

7. If the crossing of a creek is going to be included, the installation of a private bridge shall be required and shall be designed for a minimum of HS20-44 loading as prescribed by the American Association of State Highways and Transportation Officials. The width shall be minimum of twenty (20) feet. The maximum allowable grade change of the approach to and the departure from the bridge will not exceed eight (8) percent for a distance of ten (10) feet.

8. Fire hydrants are to spaced every three hundred (300) feet and located as approved by the Fire District. Water main inter-ties may be required. The type and kind of fire hydrants shall be approved by the Fire District. The hydrant shall be within (8) feet of fire department access. (reference UFC 903.4 and SCC 1240).

9. All fire hydrants are to be installed and made serviceable prior to any construction or storage of combustible materials on the site. The fire hydrants are to be accessible via an all weather-driving surface approved by the Fire District, during all phases of construction.

10. The approved civil plans shall be submitted in the approved electronic format (DXF or DWG Auto CAD version 2000 or later.

11. Any traffic signal modifications planned at Elk Grove Florin Rd, Gerber Rd, Bradshaw Rd, and Florin Rd and any new signals devices compatible with those employed by the fire department in changing those signals “green” for our direction of travel during an emergency response. Any new signal lights is required to install “Opticom.””

The Fire District also provided the following comments for the proposed subdivisions:

1. “Provide approved steamer type fire hydrants for residential areas located as follows:

    A. Maximum 500 feet between hydrants: Provide steamer type fire hydrants as follows:

        1. One fire hydrant shall be located between 150 and 250 feet from the end of the access roadway or cul-de-sac.

        2. A hydrant installed at the end of an access roadway, as a “blow off” for the water district does not meet the fire department requirements.

        3. Existing “wharf” fire hydrants are not acceptable to meet the requirements for new construction.

        4. Each steamer hydrant shall have a minimum flow of 1000 gpm at 20 pounds of residual pressure for residential areas where the total square feet of the building and garage is no more than 3600 square feet. UFC App. III A, Sect. 5.1

NOTE: Specifications for fire hydrants are available at the Fire Prevention office.

2. Fire department notes and details shall be shown on the Civil Drawings. Copies of the standards are included with the Engineers copy of this letter. See c.c.'s UFC 903.2.

3. An approved water supply capable of supplying the required fire flow for fire protection shall be provided to all premises upon which facilities, buildings or portions of buildings are hereafter constructed or moved into or within the jurisdiction. When any portion of the facility or building protected is in excess of 150 feet from a water supply facility or building, on-site fire hydrants and mains capable of supplying the required fire flow shall be provided when required by the Chief. UFC 903.2

   For residential subdivisions, the required fire flow is 1000 gallons per minute for dwellings with attached garages having no more than 3,600 square feet. For dwellings with garages over 3,600 square feet, additional flow is required starting at 1750 gallons per minute.

   EXCEPTION:

   A. Group R, Difvision 3 Occupancies provided with an approved automatic fire sprinkler system, per NFPA 13D, in areas not provided with a public water supply.

   B. Group U, Division 1 Occupancies.

4. In Group R Occupancies, the roof covering shall not be less than Class "C" when there is no public water supply source with a distribution system conforming to County Standards. Sacramento County Code 16.04.060.

5. Provide access roadways with all-weather driving surface of not less than 20 feet of unobstructed width, with a minimum turning radius of 22 feet inside/40 feet outside dimension. It shall be capable of supporting the imposed loads of fire apparatus and having a minimum of 13 feet, 6 inches of vertical clearance. The access roadway shall be extended to within 150 feet of all portions of the exterior walls of the first story of any building. Dead-end fire department access roads in excess of 150 feet long shall be provided with approved provisions for the turning around of fire apparatus. Submit a detailed drawing to this office showing the "turnaround," when required, for review and approval prior to construction. UFC 902.

6. If there are no immediate plans for new construction or storage of combustible materials on this site, the above mentioned requirements may be held in abeyance until such time that development occurs. It is important to note that if the property is sold, the seller of the property is encumbered to disclose the above requirements to the buyer.

7. There shall be no parking on any street narrower than 28 feet. Parking shall be allowed only on one (1) side on streets from 28 feet to 36 feet wide. Streets that are wider than 36 feet, parking shall be allowed on both sides. Measurements shall be from edge of pavement to edge of pavement. UFC 901.4. On private streets, marking of the fire lanes per the County Fire Marshals' standard may be required.

8. Provide approved address numbers on the building in such a position as to be plainly visible and legible from the street or road fronting the property. Said numbers shall contrast with their background and on all new buildings, shall be illuminated at night. UFC 901.4.4.

   NOTE: In order to meet this requirement the following methods are acceptable:

   A. Name the access road and ensure that the new addresses be listed for the newly named "street, and meet the requirement above or …

   B. Provide approved address numbers on the homes and for each of the homes on the access drive, provide approved address numbers posted next to the entrance to the access drive, facing the public street in an approved manner to meet the above requirement.

9. Should security gates be considered for this project, the developer shall contact this office for approval of specific clearances, locking mechanisms, or systems, which will accommodate emergency fire department use and then follow established permit procedures pursuant to Sacramento County Code, Chapter 16.70. Further information can be obtained by calling the Crime Prevention Unit of the Sacramento county sheriff's Office at (916) 440-5151. UFC 1208.

10. Remove from any roof, court, yard, vacant lot or open space all accumulations of wastepaper, hay, grass straw, weeds, litter or combustible or flammable waste material, waste petroleum products or rubbish of any kind. All weeds, grass, vines or other growth, when same endangers property or is liable to be fired shall be cut down and removed by the owner or occupant of the property. When total removal of growth from a piece of property if impractical due to size or to environmental factors, approved fuel breaks may be established between the land and the endangered property. The width of the fuel break shall be determined by height, type and amount of growth, wind conditions, geographical conditions and type of exposures threatened, UFC 1103.2.4 (Minimum width of clearance shall be 30 feet or to the property line, whichever is less. Specific conditions may require additional clearance width. UFC APPENDIX II-A, 16).

11. All fire protection equipment to be maintained in operative condition. UFC 1001.5.1

3 PROJECT CHARACTERISTICS

PROJECT DESCRIPTION

The subject ~~to~~ of this Supplement Draft EIR consists of amendments to the specific plan water treatment and storage facilities, and two separate rezones and subdivision maps. Each is described in detail below.

SPECIFIC PLAN AMENDMENT (03-CPB-0082)

Proposed amendments to the land use designations of the North Vineyard Station Specific Plan accommodate stormwater detention and drainage facilities, internal street and park site modifications, and addition of a water treatment facility. Minor internal residential density adjustments result in a slight change in overall holding capacity, which increases from 5,732 dwelling units to 6,063 dwelling units (Plate A and Table 3-1).

The following policies will be added to the Specific Plan:

> "In order to increase opportunities to provide affordable housing projects within the Plan Area which address the needs of low or very low income individuals or families, affordable Multifamily Residential ("MFR") housing projects otherwise allowed as set forth in Section 4.4 of this Plan shall be an allowed use in any residential land use designation of the Plan provided that 1) at such time as a landowner applies for a small lot tentative subdivision map, such application clearly designates any property for which such affordable multifamily housing project is intended, and 2) such application clearly states that such site is proposed for dedication to the Sacramento Housing and Redevelopment Authority (SHRA) for such purpose. If a small lot tentative subdivision map is approved which does not meet either of the requirements in the foregoing sentence, no multifamily project shall be permitted thereon unless it is located on land designated "MFR" on the Land Use Diagram of this Plan."
>
> "In the event a landowner agrees to dedicate a site to SHRA for development of an affordable housing project, the landowner shall be entitled to receive a density bonus on its remaining property comprising the subject tentative subdivision map for the housing units otherwise lost due to the dedication."

The following would be inserted towards the end of Section 604.13(A) of the Zoning Ordinance for North Vineyard Station:

3. Uses permitted in the RD-25 residential land use zone shall also be permitted in the RD-1, RD-2, RD-3, RD-4, RD-5, RD-7, RD-10, RD-15, and RD-20 residential land use zones provided that (1) such use shall only be permitted if the site on which the RD-25 use is proposed is designated within and in

conjunction with the approval of a small lot tentative subdivision map, and (2) the application for such tentative map clearly states that such site or the applicable portion of such site, is proposed for dedication and the approved tentative subdivision map shall include a condition requiring that such site or portion thereof be dedicated to the Sacramento Housing and Redevelopment Authority ("SHRA") for development of an affordable housing project.

In the event that a landowner agrees to dedicate a site to SHRA for development of an affordable housing project, the landowner shall be entitled to receive a density bonus on its remaining property comprising the subject tentative subdivision map for the housing units otherwise lost due to the dedication.

WATER TREATMENT AND STORAGE FACILITIES (04-PWE-0144)

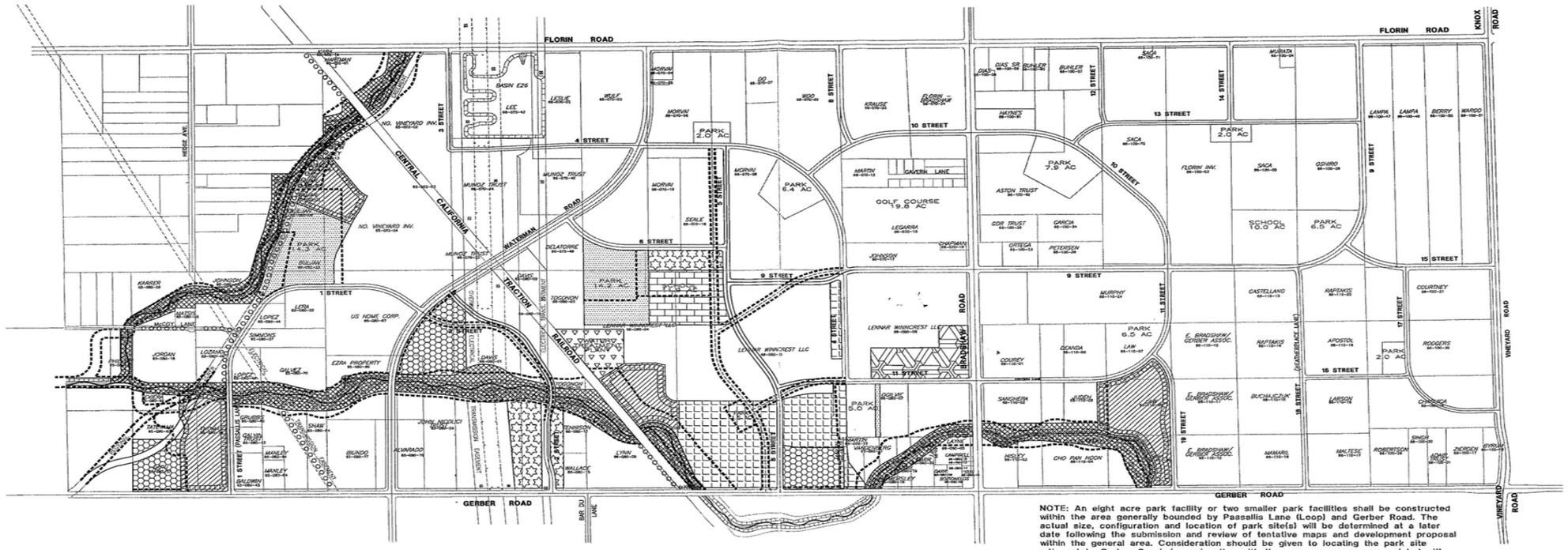
The requested work for the North Vineyard Water System has been divided into two projects:

PROJECT 1 – GROUND WATER TREATMENT AND STORAGE PLANT, AND ONE ON-SITE WELL PUMP STATION

Project 1 would be located in an area of new development bounded roughly by Elk Grove-Florin Road, Gerber Road, Vineyard Road, and Florin Road. The treatment, storage, and booster facility and on-site well would be constructed on a 6-acre parcel. A preliminary site plan is shown in Plate B. Project 1 will consist of the following components:

1. Two 1,500 gallon per minute (gpm) filter units with provisions for a third filter
2. One 2,000,000 gallon (2 MG) welded steel tank with provisions for a second tank
3. One 150,000 gallon welded steel backwash tank with provisions for a second backwash tank
4. Booster pumps
5. Chemical treatment facilities
6. Operations, chemical storage, and control building
7. On-site well pump station

Plate A
Specific Plan Amendment



NOTE: An eight acre park facility or two smaller park facilities shall be constructed within the area generally bounded by Paasalila Lane (Loop) and Gerber Road. The actual size, configuration and location of park site(s) will be determined at a later date following the submission and review of tentative maps and development proposal within the general area. Consideration should be given to locating the park site adjacent to Gerber Creek in conjunction with the open space area associated with Gerber Creek. Developing property owners shall contact the Southgate Park and Recreation District to determine the size, configuration and location of the park site(s).

LAND USE LEGEND

- BUSINESS / PROFESSIONAL
- COMMERCIAL
- SINGLE FAMILY RESIDENTIAL (1-3)
- SINGLE FAMILY RESIDENTIAL (3-5)
- SINGLE FAMILY RESIDENTIAL (4-7)
- MEDIUM DENSITY RESIDENTIAL (7-12)
- MULTI-FAMILY RESIDENTIAL (12-22)
- ADOPTED LAND USE DIAGRAM
- REVISED LAND USE DIAGRAM
- LANDSCAPE CORRIDOR
- DRAINAGE PARKWAY
- PARKWAY
- STORM WATER DETENTION BASIN
- OPEN SPACE
- PUBLIC SERVICES
- SCHOOLS
- PARKS

* NOTE: AREAS SHOWN IN WHITE HAVE NOT BEEN REVISED.

LAND USE SUMMARY - COMPARISON

RESIDENTIAL SUMMARY			EXISTING		PROPOSED		DIFFERENCE	
LAND USE	DENSITY RANGE	DENSITY FIXED COUNT	AREA NET/GROSS	UNITS	AREA NET/GROSS	UNITS	AREA NET/GROSS	UNITS
MULTI-FAMILY RES.	12 to 22	18 (net)	37.8 / 30.7	680	52.3 / 45.0	1,110	14.4 / 25.3	430
MEDIUM DENSITY RES.	7 to 12	10 (net)	18.7 / 19.4	187	30.9 / 32.7	309	12.2 / 13.3	122
SINGLE FAMILY RES.	4 to 7	6 (gross)	204.8	1,227	193.1	1,158	(11.5)	(69)
SINGLE FAMILY RES.	3 to 5	5 (gross)	611.7	3,058	585.0	2,925	(26.7)	(133)
SINGLE FAMILY RES.	1 to 3	2 (gross)	283.4	567	269.8	539	(13.6)	(28)
EXISTING RESIDENTIAL			5.6	13	5.6	13	0	0
SUB-TOTAL:			1,164.6	5,732	1,151.4	6,063	(13.2)	331

NON-RESIDENTIAL SUMMARY	EXISTING		PROPOSED		DIFFERENCE	
LAND USE	AREA NET/GROSS		AREA NET/GROSS		AREA NET/GROSS	
GOLF COURSE	19.8	20.1	19.8	20.1	0	0
COMMERCIAL	29.9	30.5	30.1	30.7	0.2	0.2
BUSINESS / PROFESSIONAL	7.1	7.9	7.1	7.9	0	0
SCHOOLS	20.0	21.5	20.9	22.4	0.9	0.8
PARKS	63.5	68.3	66.9	71.5	3.4	3.3
PARKWAYS	---	2.5	---	0.8	---	(1.7)
DRAINAGE PARKWAY	---	75.5	---	73.7	---	(1.8)
OPEN SPACE / STORM WATER DETENTION	---	104.7	---	112.5	---	7.8
LANDSCAPE CORRIDORS	---	23.2	---	21.8	---	(1.4)
PUBLIC SERVICES	5.3	5.5	11.3	11.5	6.0	6.0
MAJOR STREETS	---	57.6	---	57.6	---	0
RAILROAD	---	14.6	---	14.6	---	0
SUB-TOTAL:	431.9		445.1		13.2	
TOTAL:	1596.5		1596.5		0	

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03 0082

SPECIFIC PLAN AMENDMENT

MACKAY & SOMPS
CIVIL ENGINEERS, INC.
SACRAMENTO, CALIFORNIA (916) 929-6092
Job Number: 7536-10 Date: 02/06/04

0 300' 600'
SCALE IN FEET

NORTH VINEYARD STATION
LAND USE COMPARISON
ADOPTED NOVEMBER 4, 1998 REVISED 12/24/02, 5/5/03, 12/12/03, 2/3/04,
COUNTY OF SACRAMENTO REVISED FEBRUARY 6, 2004

DONN C. REINERS INC
SPECIALISTS IN SITE PLANNING

Table 3-1
Land Use Summary - Comparison

LAND USE SUMMARY - COMPARISON

RESIDENTIAL SUMMARY			EXISTING			PROPOSED			DIFFERENCE		
LAND USE	DENSITY RANGE	DENSITY FIXED COUNT	AREA NET/GROSS		UNITS	AREA NET/GROSS		UNITS	AREA NET/GROSS		UNITS
MULTI-FAMILY RES.	12 to 22	18 (net)	37.8	39.7	680	62.2	65.0	1,119	24.4	25.3	439
MEDIUM DENSITY RES.	7 to 12	10 (net)	18.7	19.4	187	30.9	32.7	309	12.2	13.3	122
SINGLE FAMILY RES.	4 to 7	6 (gross)		204.6	1,227		193.1	1,158		(11.5)	(69)
SINGLE FAMILY RES.	3 to 5	5 (gross)		611.7	3,058		585.0	2,925		(26.7)	(133)
SINGLE FAMILY RES.	1 to 3	2 (gross)		283.4	567		269.8	539		(13.6)	(28)
EXISTING RESIDENTIAL				5.8	13		5.8	13		0	0
SUB-TOTAL:			1,164.6		5,732	1,151.4		6,063	(13.2)		331

NON-RESIDENTIAL SUMMARY	EXISTING		PROPOSED		DIFFERENCE	
LAND USE	AREA NET/GROSS		AREA NET/GROSS		AREA NET/GROSS	
GOLF COURSE	19.8	20.1	19.8	20.1	0	0
COMMERCIAL	29.9	30.5	30.1	30.7	0.2	0.2
BUSINESS / PROFESSIONAL	7.1	7.9	7.1	7.9	0	0
SCHOOLS	20.0	21.6	20.9	22.4	0.9	0.8
PARKS	63.5	68.2	66.9	71.5	3.4	3.3
PARKWAYS	---	2.5	---	0.8	---	(1.7)
DRAINAGE PARKWAY	---	75.5	---	73.7	---	(1.8)
OPEN SPACE / STORM WATER DETENTION	---	104.7	---	112.5	---	7.8
LANDSCAPE CORRIDORS	---	23.2	---	21.8	---	(1.4)
PUBLIC SERVICES	5.3	5.5	11.3	11.5	6.0	6.0
MAJOR STREETS	---	57.6	---	57.6	---	0
RAILROAD	---	14.6	---	14.6	---	0
SUB-TOTAL:	431.9		445.1		13.2	
TOTAL:	1596.5		1596.5		0	

ITEM 1: WATER TREATMENT PLANT

A water treatment plant, consisting of filter units, backwash pumps, and recycle pumps will be provided to remove manganese (and possibly iron and arsenic) from groundwater wells using a greensand and anthracite base media. Two 1,500-gpm filter units are to be provided initially, with provisions for an additional 1,500-gpm filter vessel. The filter vessels would be automated, backwashed in series and would incorporate recycled backwash water as a portion of the influent flow. The initial phase of the filter system installation will include two filters, each matching the capacity of a single production well. Separate backwash pumps will be used to backwash and clean the filters and to send the backwash water to the backwash tank. Separate recycle pumps will pump the water from the backwash tank, minus the filtered iron and manganese solids, back through the filter.

ITEMS 2 AND 3: WATER STORAGE AND BACKWASH TANKS

The proposed storage and treatment facility would include two welded steel storage tanks; one for storage of treated water, the other for backwash water settling, recycling, and disposal. The treated water storage reservoir would hold approximately 2.0 million gallons of water, and have a diameter of about 140 feet, and an overall height of about 22 to 24 feet at the center of the roof. The backwash tank, would have a diameter of approximately 40 to 45 feet in diameter and a height of about 16 to 18 feet, and would include a gravity drain for removal of accumulated solids removed by the filtration process. Both the treated water and backwash water storage tanks would be furnished with manways, vents, safety ladders, control valves, and corrosion control equipment. Space will be provided and provisions will be made during the design and construction phase to add an identical future storage tank and future backwash tank.

ITEM 4: BOOSTER PUMPS

The proposed facility will utilize vertical turbine booster pumps to deliver water from the storge reservoir into the water distribution system for public consumption. Initially, the facility would incorporate 3 boosters at 2,000 gpm each. Accommodations would be made for future inclusion of three additional booster pumps, for a total capacity of 12,000 gpm.

ITEM 5: CHEMICAL TREATMENT FACILITIES

Chlorine (sodium hypochlorite) will be added into the raw water pipeline used to convey water from the production wells, prior to the iron and manganese filter vessels in order to oxidize and enhance the removal of iron and manganese present in the pumped groundwater. Provisions would also be made to introduce ferric chloride into the same pipeline to reduce arsenic concentrations, if present in groundwater at concentrations that would require treatment. Finally, provisions may also be made to add fluoride. Should fluoride treatment occur, the fluoride would be added into the treated water stream from the water storage tank, just before being introduced into the water distribution system. All chemicals used in the treatment process will be stored inside a

sheltered structure or building, with containment provisions to limit the potential for a chemical release to the surrounding environment.

ITEM 6: BUILDING

A building will be designed to house the booster pumps, motor control center, chemical treatment facilities, and an emergency generator. The building will limit noise impacts, improve aesthetics, and increase security.

ITEM 7: ON-SITE WELL PUMP STATION

The production well, equipped with a vertical turbine pump, will be housed in the same building discussed previously, or in a separate station building on the site. The pump station will contain the well, lineshaft turbine pump, discharge head and station piping and controls. This on-site pump station will have a design capacity of 1,500 gpm.

PROJECT 2 – ~~REMOVE~~ REMOTE WELL PUMP STATIONS NO. 1 AND NO. 2

Additional sources of groundwater will be provided by two additional production wells to be installed at remote locations. The proposed remote well sites are each located approximately one-quarter mile from the treatment facility. A location map is shown in Plates C through E. These two remote wells (well sites No. 1 and No. 2) will pump water to the North Vineyard Station treatment, storage, and booster facility through a "raw-water" connection pipeline to be constructed as part of the Subdivision Project. The supply wells will each be equipped with vertical turbine pumps designed for a 1,500 gpm capacity each. Water quality from nearby existing wells indicates a likelihood of iron and manganese (and possibly arsenic) at levels above the MCL in the raw water. Therefore, the raw water from the wells will be routed through the treatment plant to produce water that meets drinking water standards. The remote well pump stations will be housed in a building to reduce noise impacts, improve aesthetics, and increase security. The pump stations would have concrete masonry buildings with removable roof sections containing the well pump, motor, and associated controls. The two remote pump stations would be equipped with a telemetry system for remote operation and they would be graded, paved, and surrounded with a concrete masonry wall for additional sound attenuation as well as for neighborhood esthetics and security of the sites.

Plate B
Conceptual Layout – Water Treatment Plant Site

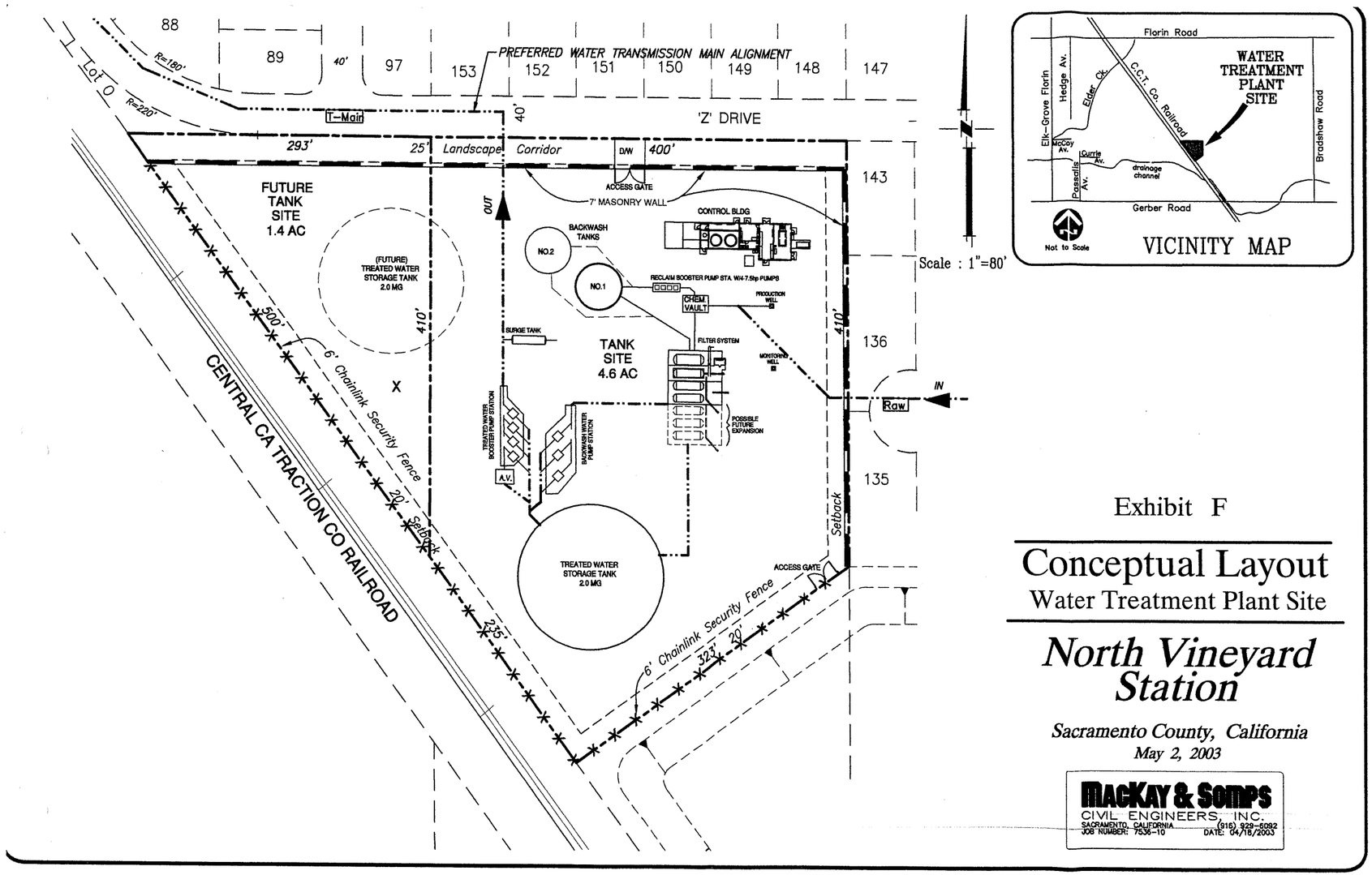


Plate C
Water Treatment Facilities – Alternate 1

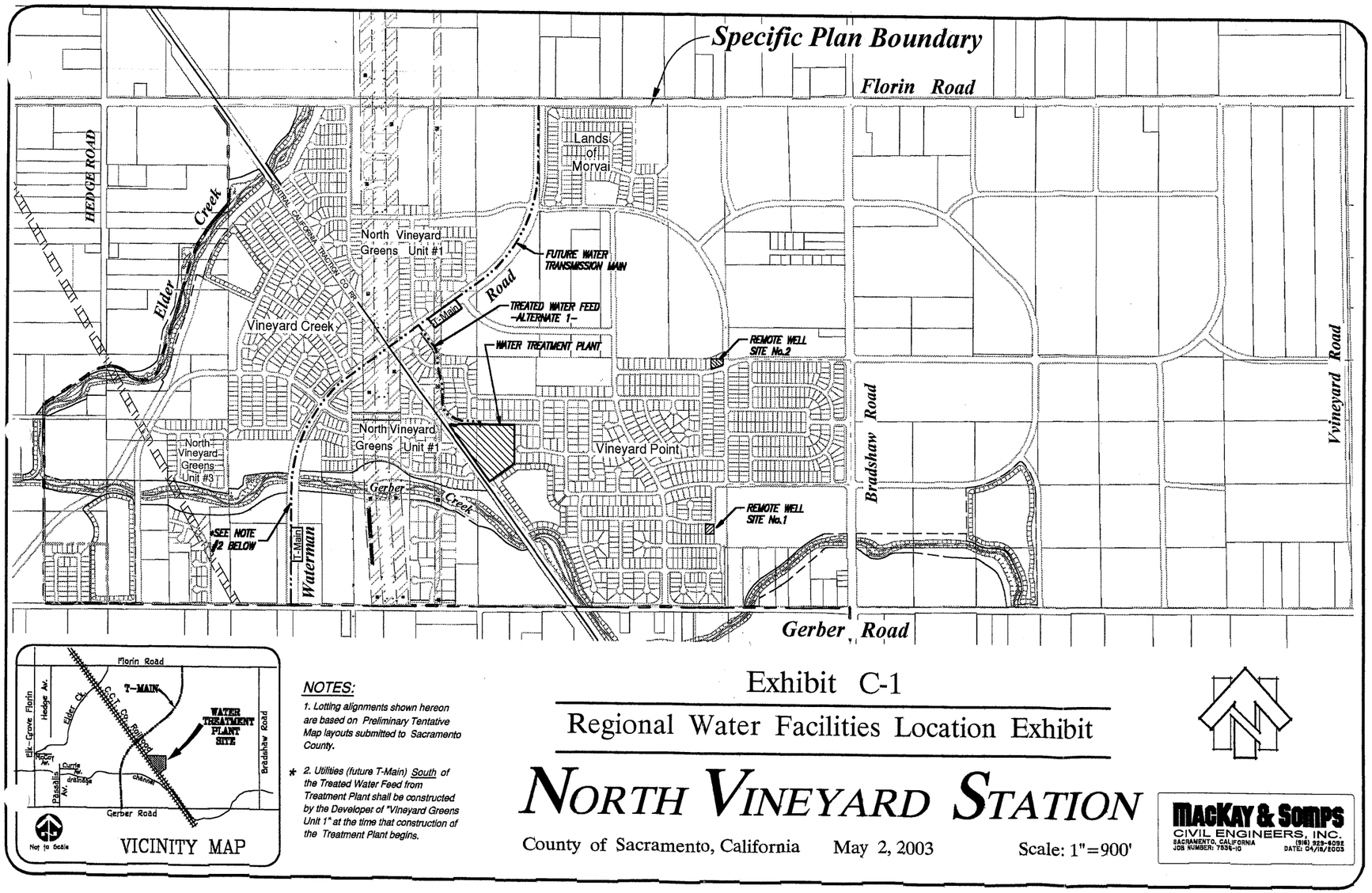


Plate D
Water Treatment Facilities – Alternate 2

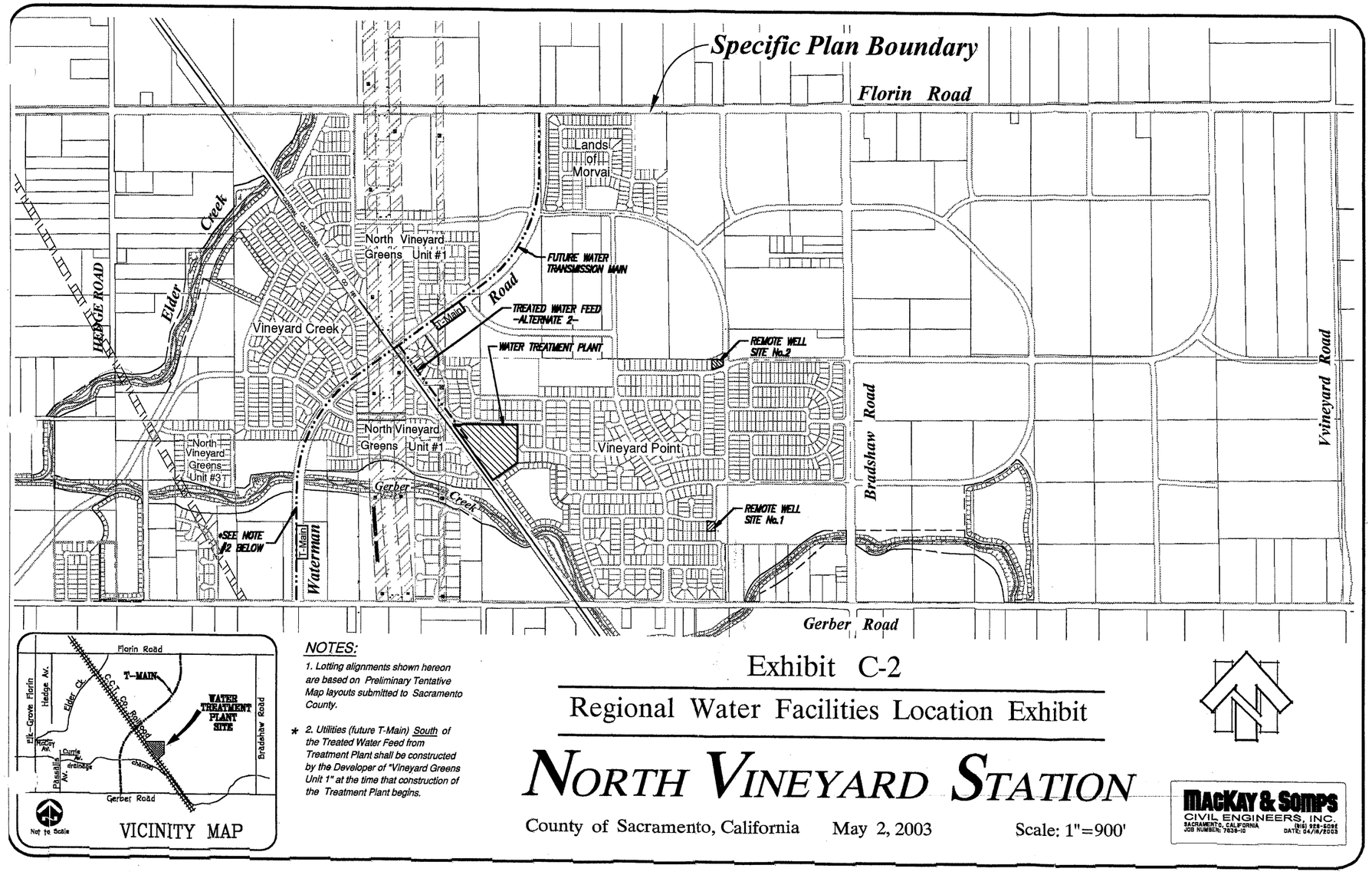
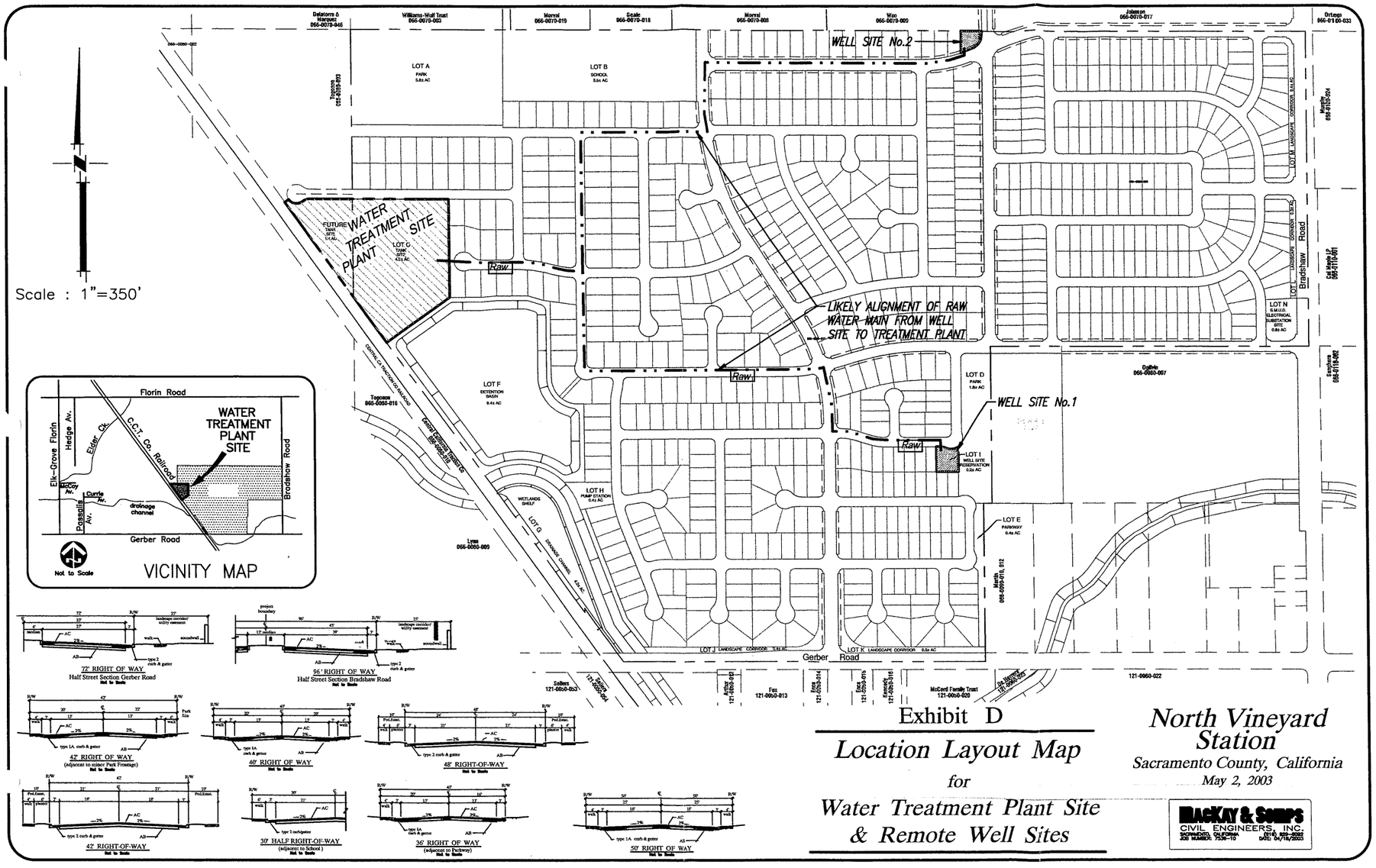


Plate E
Location Layout Map



VINEYARD CREEK SUBDIVISION (03-RZB-SVB-0385)

1. A **Rezone** of 104.8 gross acres from AG-20 to RD-5 residential-maximum 5 dwellings per acre (approximately 60.4 acres), RD-7 residential-maximum 7 dwellings per acre (approximately 18.2 acres), RD-10 residential-maximum 10 dwellings per acre (approximately 5 acres), RD-20 multi-family residential-maximum 20 dwellings per acre (approximately 7.5 acres), and O recreation (approximately 13.7 acres) (Plate F).

2. A **Vesting Tentative Subdivision Map** to create 390 total lots including: 377 residential lots, 1 park site lot, 3 open space lots, 1 detention facility lot, 2 future residential lots (5.0 acres of RD-10 and 2.1 acres of RD-5), 1 multi-family lot (7.0 acres), and 6 landscape corridor lots (Plate G).

3. A **Tentative Subdivision Map** to create 14 large lots from the same 104.8 acres for financing and marketing purposes (Plate H).

VINEYARD POINT SUBDIVISION (03-RZB-SDB-SVB-0293)

1. A **Rezone** of approximately gross181.8 acres from AG-20 to RD-5 residential-maximum 5 dwellings per acre (approximately 73.3 acres), RD-7 residential-maximum 7 dwellings per acre (approximately 80.1 acres), RD-10 residential-maximum 10 dwellings per acre (approximately 11.5 acres), RD-20 multi-family residential-maximum 20 dwellings per acre (approximately 6.9 acres), and O recreation (approximately 10.0 acres) (Plate I).

2. A **Vesting Tentative Subdivision Map** to a total of 769 lots – 754 residential lots, 1 multi-family lot, 1 park site lot, 1 pedestrian access lot, 1 school site lot, 1 water tank site lot, 2 well site lots, 1 detention basin lot, 1 drainage channel lot, 1 pump station lot, 1 SMUD site lot, and 4 landscape corridor lots (Plate J).

3. A **Tentative Subdivision Map** to create 14 large lots for the purposes of financing and/or phasing of the project (Plate K).

4. A **Special Development Permit** to allow deviations from various development standards of the North Vineyard Station Specific Plan and/or Zoning Code. Standards include public street frontage, lot area, lot width, lot depth, and setback (Plate L).

Plate F
Vineyard Creek – Rezone

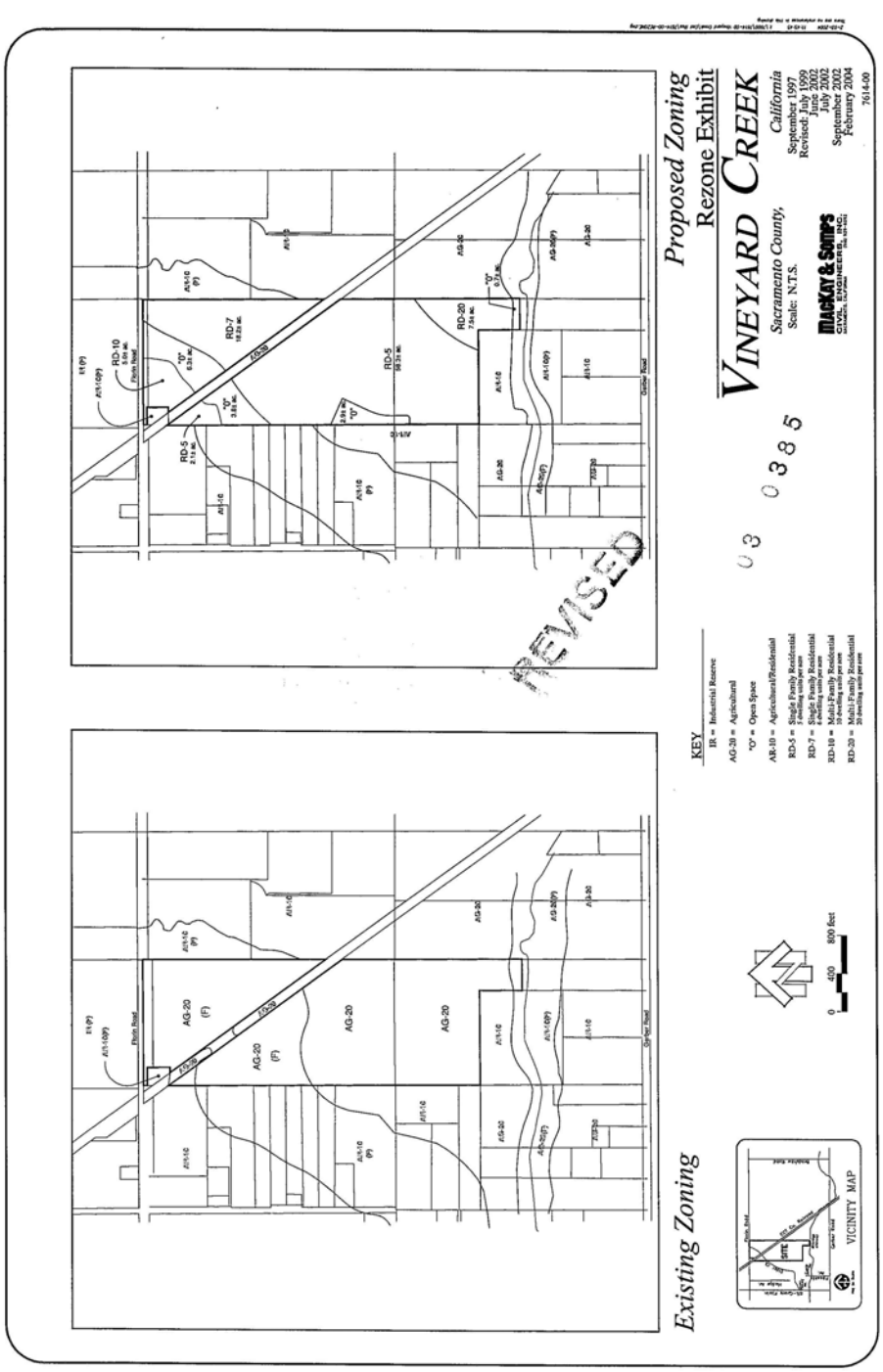


Plate G
Vineyard Creek – Tentative Subdivision Map

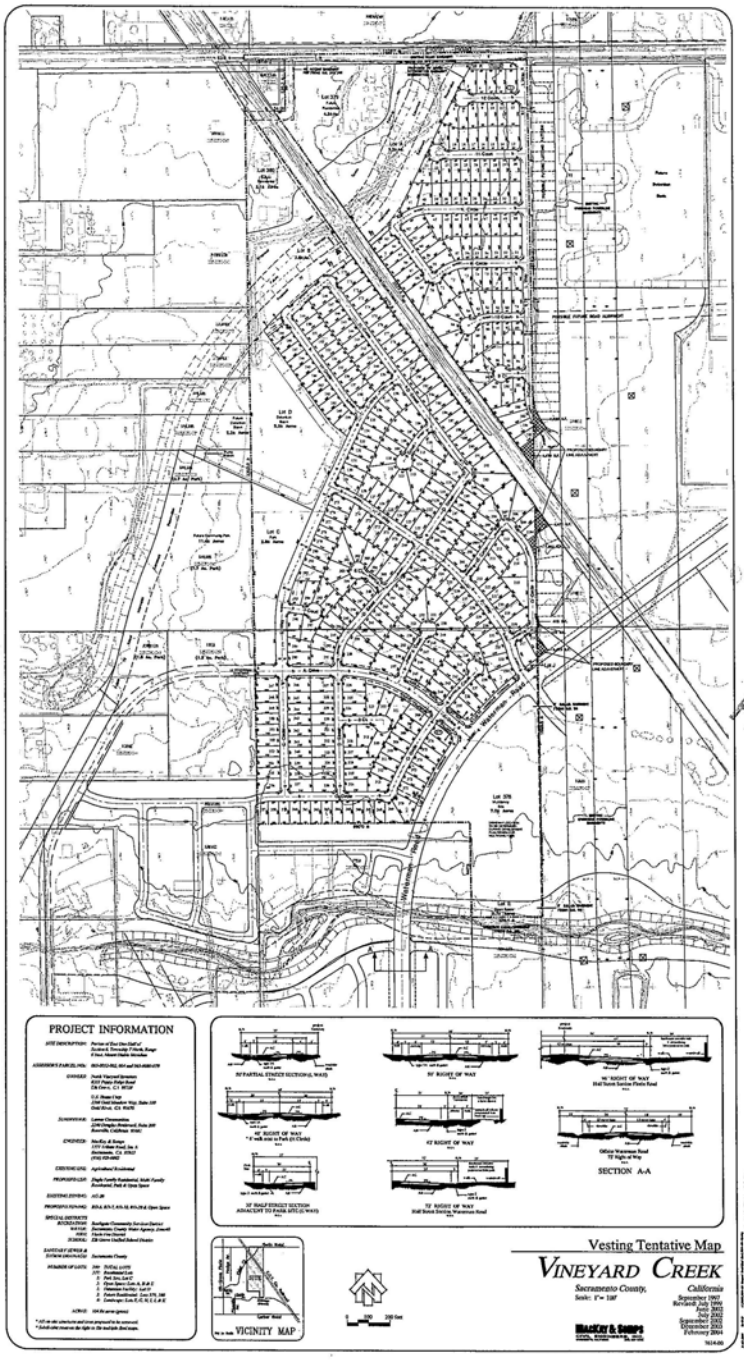


Plate H
Vineyard Creek – Large Lot Map

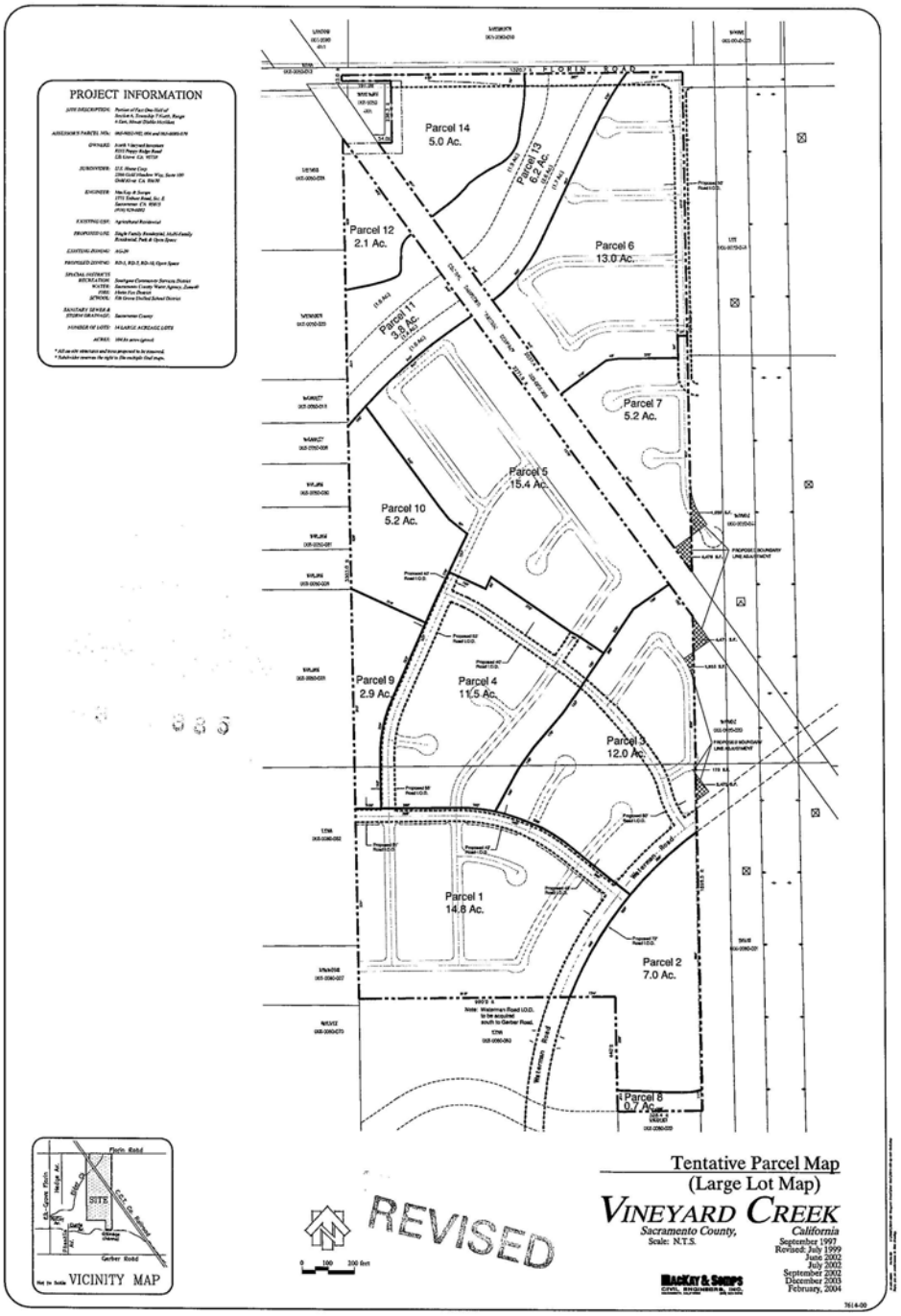


Plate I
Vineyard Point – Rezone

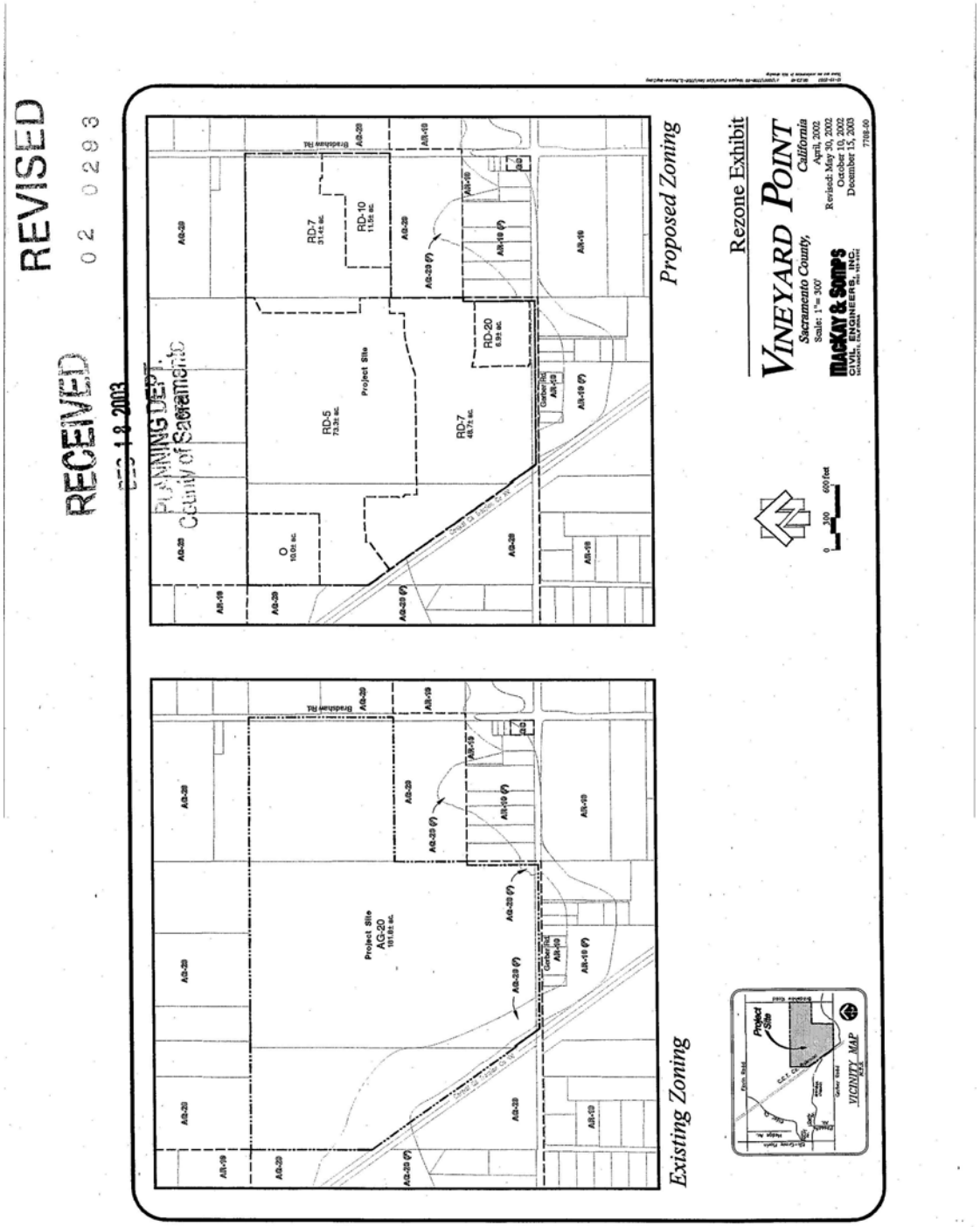


Plate J
Vineyard Point – Vesting Tentative Map

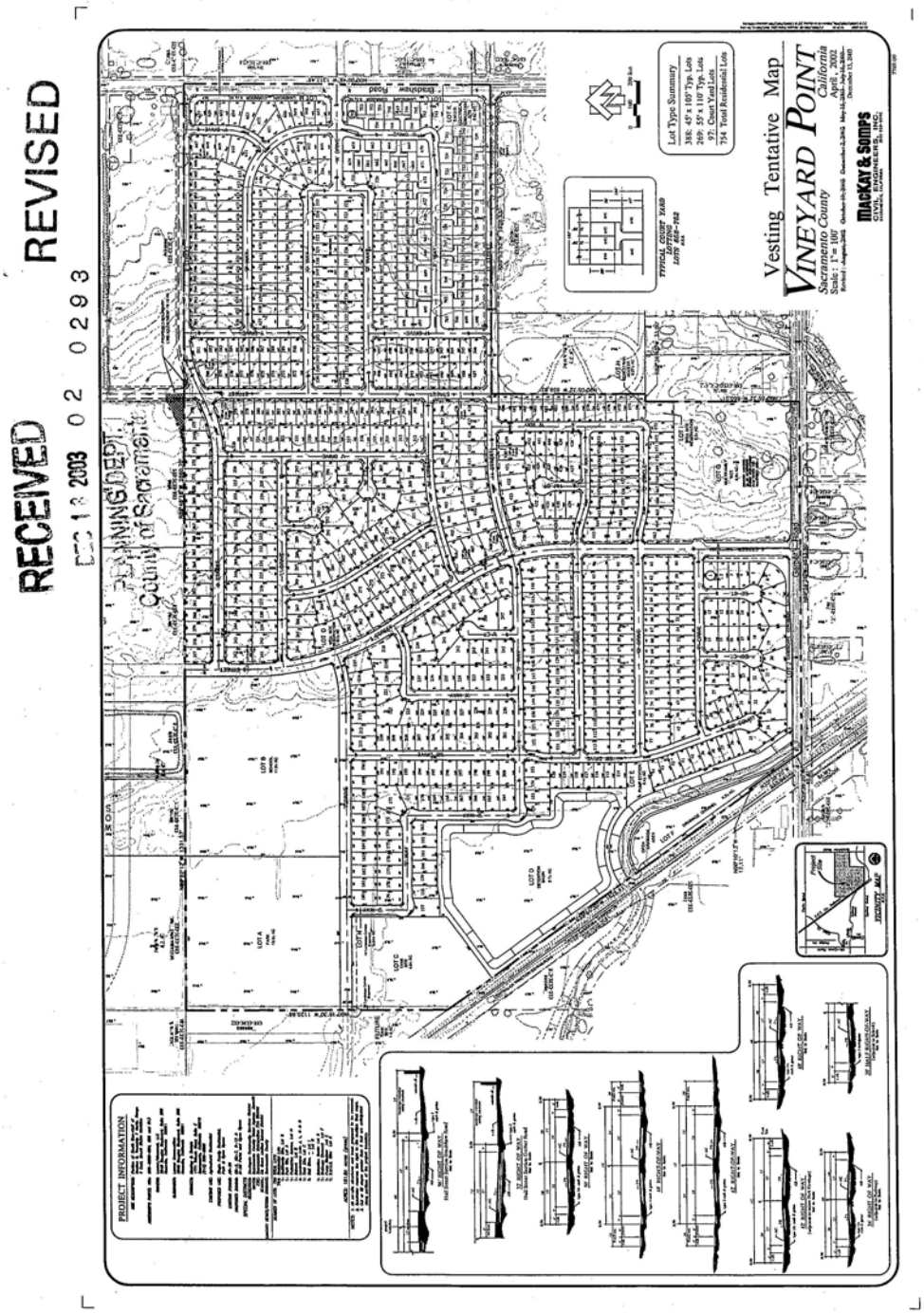


Plate K
Vineyard Point – Large Lot Map

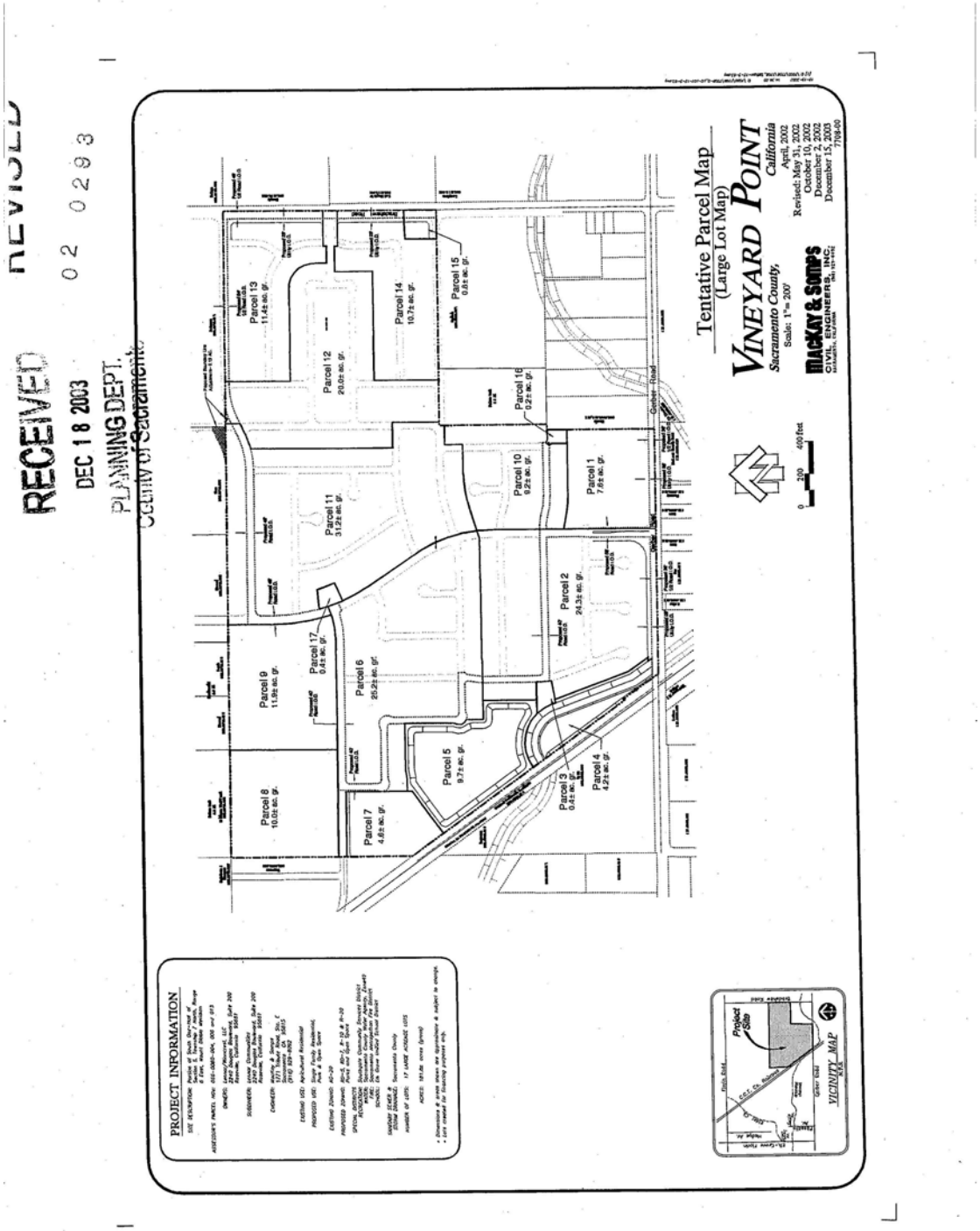
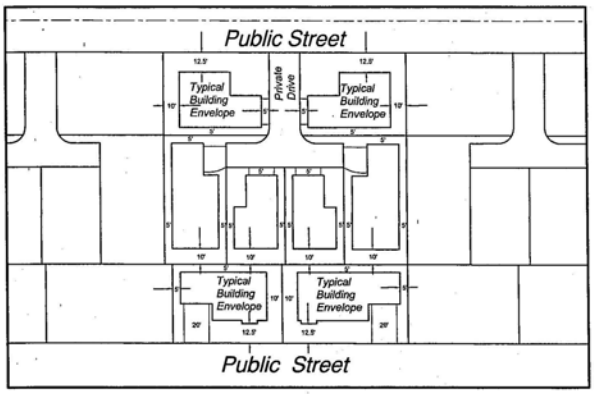


Plate L
Vineyard Point – Special Development Permit



02 0293

COURT YARD LOTS
RD-10
Scale: 1"= 40'

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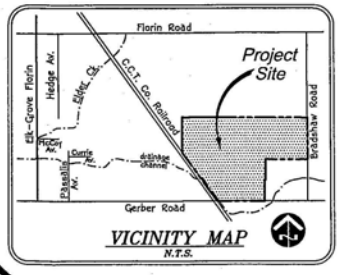
RESIDENTIAL DEVELOPMENT STANDARDS
(from North Vineyard Station Specific Plan)

	EXISTING	PROPOSED
	SFR/7-12	SFR/7-12
	RD-10	RD-10
LOT DIMENSIONS (min.)		
Area (sq. ft.)(1)	3,200	2,000
Area, Corner (sq. ft.)(1)	4,000	3,000
Width	35'	35'
Public Street Frontage(2)	30'	0'
Width, Corner(2)	45'	40'
Depth(3)	60'	55'
SETBACKS (min.)		
Front, Living Area (4) (5)	15'(6)	12.5'(6)
Front, Porch (5)	10'	10'
Front Garage (7)	20'(8)	5'
Side, Interior (4)	5'(9)	5'(9)
Side, Total Bldg Separation (9)	10'	10'
Rear, Living Area (4)	15'	15'
Rear, Ancillary Unit (10)	5'	5'
Detached Garage (11)	0'	0'

FOOTNOTES

(1) The minimum half-plex lot area is 3,000 sq. ft. for interior lots and 4,000 sq. ft. for corner lots. Half-plex lots have no minimum lot dimension requirements.
(2) The public street frontage for lots fronting on a curved street or the curved portion of a cul-de-sac or elbow may be measured along an arc located within the from 50 feet of the lot.
(3) The minimum lot depths listed herein supersede the minimum lot depth provisions in the Zoning Code.
(4) Architectural projections are allowed to extend two (2) feet into the required interior side yard and rear yard setbacks. Architectural projections are also allowed to extend two (2) feet into required 20-foot front yard setbacks. Architectural projections include eaves, bay windows (cantilevered and extending from the foundation), fireplaces, media bays, and architectural box-outs. Rear yard projections are allowed pre Zoning Code, Section 305-02 (b).
(5) Vehicular visibility requirements must be met.
(6) May be reduced to 10 feet where adjacent to detached sidewalk.
(7) Where swing driveways are used, the front yard garage setback may be reduced to 15 feet.
(8) Driveway length may be reduced to 19 feet where automatic roll-up doors are used.
(9) Zero-lot line units are permitted where the total building separation requirement is met.
(10) Ancillary units have the same front, side, and street sideyard setback requirement as the primary unit. If attached, the required rear yard is the same as for the primary unit. If detached, the separation from the primary unit is governed by the Uniform Building Code and the Uniform Fire Code. Ancillary units may be placed above attached or detached garages. One (1) on-site parking space is required per unit in addition to the two (2) garage and two (2) driveway spaces required for the primary unit.
(11) Side and rear setback dimension.
(12) Refer to Sacramento County Zoning code for applicable lot dimensions and building setbacks.

Special Development
Permit Exhibit



VINEYARD POINT
Sacramento County, California
Scale: 1"= 40'
April, 2002
Revised: December 15, 2003

MACKAY & SOMPS
CIVIL ENGINEERS, INC.
SACRAMENTO, CALIFORNIA (916) 929-6092
7708-00

PUBLIC FACILITIES FINANCING PLAN (02-PWE-0532)

The Public Facilities Financing Plan sets forth a strategy to finance the backbone infrastructure and other public facilities required to serve the proposed land uses in the North Vineyard Station Specific Plan (NVSSP). The strategy proposed is designed to be flexible enough to accommodate the development plans of a diverse set of multiple NVSSP property owners, while assuring the County of Sacramento that the required facilities are constructed when necessary. The Financing Plan includes a combination of existing fee programs, the development of the North Vineyard Station Fee Program (NVSFP), the possible use of Mello-Roos bond financing, and other funding mechanisms.

ENVIRONMENTAL SETTING

The North Vineyard Station Specific Plan (NVSSP) area includes several existing land uses including 13 residences, the 20-acre Bradshaw Golf Center, a convenience store/gas station/bar at the northwest corner of Bradshaw and Gerber Roads, a feed store, an equestrian center on Bradshaw, and a small nursery on Gerber Road. Other existing land uses include five separate easements that contain high voltage power lines, and the out of service 100-foot-side Central California Traction Railroad (CCTR) right-of-way traversing the NVSSP.

The NVSSP project area is predominantly utilized for agricultural-residential uses, with some urban development within the surrounding Vineyard area. Grassy fields and pastures characterize the project site. There are a number of single-family dwellings located within the planning area, along with barns and other outbuildings. The small amount of agricultural activity that occurs is generally limited to dry farming. Over the years, the majority of the site has been subdivided into parcels of one-half to thirty acres in size.

There are several existing commercial sites with the Plan Area, including the Bradshaw Golf Center occupying a 20-acre parcel on the west side of Bradshaw Road. There is also a convenience store/gas station/bar at the northwest corner of Bradshaw and Gerber Roads, a feed store and an equestrian center on Bradshaw, and a small nursery on Gerber Road.

Other existing land uses include five separate easements that contain high voltage power lines, with four truss tower transmission lines, a wood pole line and a steel pole line. The easements traverse the western side of the Plan area, oriented in a north-south direction. The Central California Traction Railroad owns a 100-foot wide right-of-way traversing the Plan area diagonally in a northwest-southeast direction. The tracks have been taken out of service.

Elder Creek and Gerber Creek flow through the Plan area. Elder Creek forms the northwestern boundary of the Plan area and has a watershed of approximately 5,000

acres at its confluence with Gerber Creek at the western boundary of the Plan area. Approximately 500 acres of that shed are within the boundary of the Plan area. Gerber Creek has a drainage area of approximately 3,100 acres, approximately 960 acres of which are within the plan area. The creek crosses Gerber Road several times, flowing in and out of the Plan area before draining into Elder Creek at the western boundary of the Plan area.

There are five categories of wetlands and waters of the United States within the Plan area, including vernal pool, seasonal wetland, freshwater marsh, drainage swale, and perennial creek, totaling approximately 51 acres. Stock ponds also occur in several locations within the Plan area.

The Plan area vegetation is characterized primarily by annual grasses and forbs. Very few native woody plant species occur, except for where water is at or near the surface. Following are descriptions of the principal terrestrial habitats within the Plan area:

The dominant habitat type in the Plan area is non-native annual grassland. These areas are typically not irrigated and occur in several forms including historically disturbed fallow ground, dry pasture (primarily used for cattle and horses), and “buffer” areas along r~~9~~oads and near houses. Flood irrigation of pastures occurs during the dry months in many parts of the Plan area. Plant species (forage) consists of a mixture of typical dryland species, as well as many species that occupy the margins of wetlands.

Numerous trees are scattered throughout the Plan area, typically associated with homesites or situated along fence lines. Predominant species are eucalyptus, black walnut, and fruitless mulberry. Other species include Italian stone pine, catalpa, Modesto ash, box elder, Japanese black pine, silver maple, London plane, weeping willow, and Monterey pine. Most of the vegetation around the residences consists of ornamental species.

PROJECT LOCATION

NORTH VINEYARD SPECIFIC PLAN AREA

The NVSSP planning area is located in the south-central unincorporated area of Sacramento County, at the western edge of the Vineyard community. The City of Sacramento’s Central Business District is located approximately eleven miles to the northwest. The Plan Area lies entirely within Sections 4 and 5 of Township 7 North, Range 6 East and within the USGS Elk Grove quadrangle map.

The Plan Area encompasses 1,590± acres of the Vineyard Community Planning Area. The Plan Area is bounded by Florin Road to the north, Gerber Road to the South, the northerly extension of the Vineyard Road on the east, and generally by Elder Creek’s north and south forks. Bradshaw Road transects the Plan Area in a north/south

alignment. The right-of-way of the Central California Traction Railroad transects the western portion of the planning area.

WATER TREATMENT FACILITY

The 6-acre site is located on the east side of the Central California Traction Railroad tracks, approximately 100 feet north of Gerber Road.

VINEYARD CREEK

The property is located on the south side of Florin Road, 1,300 feet east of Hedge Avenue, in the Vineyard community.

VINEYARD POINT

The property is generally located on the north side of Gerber Road and the east side of the Central California Traction Railroad, in the Vineyard community.

PROJECT OBJECTIVES

The overall goal of the North Vineyard Station Specific Plan is to provide for the orderly and systematic development of the planning area through the establishment of a comprehensive planning program that is consistent with the Sacramento County General Plan and to respond to opportunities and constraints in the local community area. The North Vineyard Station Land Use Plan has been developed in accordance to this objective and compliance with adopted goals, policies and diagrams of the Sacramento County General Plan, as adopted December 15, 1993. Staff from the Planning Department assisted the North Vineyard Station Citizens Advisory Committee (CAC) in the formation of a development strategy to characterize the type and form of development within the study area. This development strategy was articulated in the form of guiding principles. These principles were developed to ensure that a high quality land use plan would be developed to provide for the orderly and systematic development of the planning area that meets the objectives of the General Plan. These principles are as follows:

1. Plan, develop and maintain a comprehensive, balanced, integrated, safe and efficient transportation system to ensure mobility for all residents.

2. Promote efficient traffic patterns and effective levels of transit service, which connects the project area to surrounding neighborhoods and provide access to larger market areas throughout the County while minimizing congestion on residential streets.

3. Prepare a Comprehensive Drainage Master Plan to mitigate the threat of flooding within the project area.

4. Provide and maintain an adequate level of public services to the project area including water, sewer, parks, schools, police, fire and library services.

5. Promote the location of desirable~~s~~ land uses to minimize land use compatible conflicts.

6. Locate desirable future land uses to maximize the opportunity to create an overall pattern of planned orderly development containing a system of land use adequately and sufficiently served by a balanced system of transportation and community services and facilities.

7. The project area should have a center focus that combines commercial, civic, cultural and recreational uses.

8. As many activities as possible should be located within easy walking distance of transit stops or within core area.

9. All Planning Should be in the form of complete and integrated communities containing housing, shops, work places, parks and civic facilities essential to the daily life of the residents.

10. Provide a diversity of housing types to enable citizens from a wide range of economic levels and age groups to live within the area.

11. Encourage a housing production mix the sizes, types and price range of units and allow for innovative housing construction technologies to provide amenities requested by area residents, including large garages and larger homes.

12. Provide a well defined edge, such as agricultural green belts or wetland corridors, and avoid urban encroachment to such areas.

13. Allow for agricultural residential use as a buffer between urban areas and agricultural or constrained areas such as floodplain and wetland resource areas.

14. The area should contain an ample supply of specialized open space in the form of squares, greens and parks whose frequent in encouraged through placement and design.

15. Provide opportunities for open space, recreation and visual relief by planning for parks, trails and parkways. Establish a loop trail that encircles the area and promote open space and recreation use of the areas creeks and sloughs.

16. Whenever possible, the natural terrain, drainage & vegetation of the area should be utilized in conjunction with parks, greenbelt & open space.

17. Counter increasing crime/perception of crime through design improvements and crime prevention activities to increase the safety of residents, business,

employees and customers and to maintain and promote neighborhood patronage.

18. Incorporate crime prevention techniques in the urban design of all new developing area within the community. Development plans shall address crime prevention measures including increased visibility and interaction between uses

19. Encourage the concentration ~~i~~of employment and activity centers, particularly in relation and proximity with higher density residential areas, in order to facilitate shorter distances and the use of non-auto modes of travels.

20. Streets, pedestrian paths and bike paths should contribute to a system of fully connected routes to all destinations. Their design should encourage pedestrian and bicycle use by being small and spatially defined by buildings, trees and lighting.

21. Establish development standards that foster compatible design solutions and are aimed at improving how new development projects will fit into the area with the overall intent of defining the area's character.

22. Ensure that a Public Infrastructure Plan and Infrastructure Financing Plan is adopted, as a component of the Specific Planning program, Prior to the occurrence of any new urban development within that area.

23. Public facilities constructed and completed timely with the constru~~i~~ction of new residential projects.

24. Improve the quality of life for current and future residents of the project area by ensuring that adequate level of public services are provided.~~;~~

INTENDED USE OF THE EIR

The SEIR will be used as an informational document to the public and by the Sacramento County Subdivision Review Committee, Policy Planning Commission and Board of Supervisors in evaluating the proposed project and rendering a recommendation or decision to approve, or deny the proposed project.

In addition, the EIR will be used as an informational document to the public and by other responsible agencies including, but not limited to: the California Department of Fish and Game, Regional Water Quality Control Board, U.S. Corps of Engineers, U.S. Fish and Wildlife Service, and the Board of Directors for: the Sacramento County Water Agency; the Sacramento Regional County Sanitation District; and the County Sanitation District No. 1.

4 LAND USE

BACKGROUND

The NVSSP area consists of approximately 1,595± acres. The Specific Plan provides a comprehensive plan for development of an area that was designated for Urban Growth by the Sacramento County General Plan. It refines the policy direction provided by the General Plan and replaces or supplements the Zoning Map and regulations. The Plan includes development standards and zoning to address the unique situations within the Plan area, sets forth a Land Use Diagram for future development, and contains programs for the provision of public facilities. As such, the Plan serves as a policy and regulatory document, with policy direction and project development concepts consistent with the County's General Plan. The current project is an amendment to the previously approved 1998 plan.

The prior Final EIR for the North Vineyard Station Specific Plan (certified on August 12, 1998; County Control Number: 93-SFB-0238) summarized impacts to land use in the following manner:

> "The County General Plan Land Use Element recognizes that the demand for land has created a number of problems in Sacramento County. These problems include an increased consumption of open space, deteriorating air quality, decrease in housing affordability, degradation of public facilities, and increase in traffic congestion. The General Plan also notes that efficient land and resource use in Sacramento County can best be achieved by being committed to a mitigating pattern of land use that concentrates development in configurations designed to protect valuable agricultural lands, conserve natural resource areas, reduce automobile travel distances and related air pollution, as well as conserve energy, and enhance the efficient provision of infrastructure and services.
>
> The Preferred Plan and Alternatives may not meet several General Plan goals, objectives and policies which are intended to maximize efficiency in land use and improve community identity as the projected growth needs of the County are accommodated during the 20-year planning horizon. The densities and land use patterns proposed are similar to the low density development typical of other suburban communities. The Preferred Plan and Alternatives are land consumptive and auto-oriented, which tends to exacerbate traffic and air quality impacts; however, these impacts were acknowledged during the update of the County General Plan when the subject Specific Plan area was designated for growth. In order to minimize further environmental degradation, it is essential that the projected growth needs of the General Plan are met within approved urban growth areas. If the designated growth areas are not developed to their full potential, direct, adverse physical impacts to the environment could occur

> through the further loss of agricultural lands and open space/natural habitat areas.
>
> In conclusion, potential land use compatibility impacts associated with holdover agricultural-residential or general agricultural uses located both within and just outside the Urban Development Area ***can be mitigated to less than significant levels*** through implementation of General Plan policies, proposed Specific Plan policies and established Zoning Code development standards.
>
> Land use impacts resulting from non-compliance with General Plan goals, objectives and policies are considered ***potentially significant and adverse.*** Mitigation of potential land use impacts to a less than significant level would require redesign of the Plan are to be consistent with the intent of the General Plan for new growth areas. "

This Supplemental EIR focuses on land use impacts associated with the proposed amendments to the Specific Plan, the adoption of new land use policy, and the development of land within the Specific Plan Area.

SPECIFIC PLAN AMENDMENTS

The proposed amendments to the NVSSP consist of a slight increase in residential density, as well as designating the drainage parkway corridor. The residential density adjustments result in an overall holding capacity increase from 5,732 dwelling units to 6,063 dwelling units, or about a 6% increase.

The increase in density is in response to the need for more affordable housing sites within the County, as outlined in the current General Plan Housing Element Update process. Legal Services of Northern California challenged the May 2002 vacant land inventory, suggesting that there is a lack of vacant multi-family land of suitable size and location to accommodate very low and low-income housing within the unincorporated area of the County. The vacant land inventory acknowledges that there is an inadequate supply of multi-family zoned land to met the demand for very low and low-income housing needs identified in the Regional Housing Needs Assessment.

The Sacramento County Planning and Community Development Department (Planning Department) has identified the need to create more multi-family land (multi-family development is generally seen as the most feasible way for meeting the affordability index) to ensure a viable affordable housing program through the new community and specific plans now being processed. New development areas are seen as offering the best opportunity to accommodate affordable housing needs. The Planning Department is working with communities and development interests to identify more multi-family land within the Florin-Vineyard Gap Comprehensive Plan, the Elverta Specific Plan, and the North Vineyard Station Specific Plan.

The proposed Affordable Housing Program, the implementation tool for the Housing Element policies, is currently in the draft stage. The Affordable Housing Program is being developed by the Planning Department and the Sacramento Housing and Redevelopment Agency (SHRA) with significant input from affordable housing stakeholders which includes market rate residential developers and builders, affordable housing builders, and affordable housing advocates.

The primary scope of the Affordable Housing Program is that all new residential development in the unincorporated county will be required to provide affordable housing and the goal is to have 15% of all new housing units constructed to be affordable to targeted low-income groups. As originally proposed, the Housing Element update Policy HE-45 had called for a 10% affordability factor; however the Policy Planning Commission has recommended a 15% affordability factor and the current Draft Affordable Housing Program has followed through with a 15% requirement.

The June 2004 Draft Affordable Housing Program currently states:

> ***Scope:*** ***All new residential construction in the unincorporated county will contribute to affordable housing.***
>
> - *The affordable units will be within the same growth area (e.g., specific plan. Community plan) as the market rate housing.*
> - *New construction seeking tentative subdivision maps,parcel maps, zoning of rezoning, and multifamily development plan review are subject to the program's requirements.*
> - *The market rate developer may choose between land dedication and construction to meet the affordable housing obligation. If the County determines there are no viable sites for land dedication, the market rate developer may also choose to pay an in-lieu fee.* (June 23, 2004)

In anticipation of this requirement, the applicants for the NVSSP are attempting to meet affordable housing component by increasing multi-family residential sites in three areas of the Plan effectively adding 439 more multi-family units for a total of 1,119 units on 65 acres. In addition, another site has been redesignated as medium-density residential (7 to 12 units per acre), adding another 122 units for a total of 309 medium density units on 32.7 acres for development as possible affordable units. These increases in higher density units are offset by slightly fewer single-family units, resulting in a net increase of 331 units for the NVSSP area for a gross holding capacity of 6,063 units on 1,595 acres. This represents just under a 6% increase in units in the Plan area from the previously approved 5,732 units.

Realizing that some of the multi-family and medium density sites will be developed for market rate housing, the applicants have proposed the following amendment to the NVSSP policies in order to encourage additional affordable housing opportunities:

"In order to increase opportunities to provide affordable housing projects within the Plan Area which address the needs of low or very low income individuals or families, affordable Multifamily Residential ("MFR") housing projects otherwise allowed as set forth in Section 4.4 of this Plan shall be an allowed use in any residential land use designation of the Plan provided that 1) at such time as a landowner applies for a small lot tentative subdivision map, such application clearly designates any property for which such affordable multifamily housing project is intended, and 2) such application clearly states that such site is proposed for dedication to the Sacramento Housing and Redevelopment Authority (SHRA) for such purpose. If a small lot tentative subdivision map is approved which does not meet either of the requirements in the foregoing sentence, no multifamily project shall be permitted thereon unless it is located on land designated "MFR" on the Land Use Diagram of this Plan.

In the event a landowner agrees to dedicate a site to SHRA for development of an affordable housing project, the landowner shall be entitled to receive a density bonus on its remaining property comprising the subject tentative subdivision map for the housing units otherwise lost due to the dedication."

The following language would be inserted towards the end of Section 604.13(A) of the Zoning Ordinance for the North Vineyard Station Specific Plan:

3. Uses permitted in the RD-25 residential land use zone shall also be permitted in the RD-1, RD-2, RD-3, RD-4, RD-5, RD-7, RD-10, RD-15, and RD-20 residential land use zones provided that (1) such use shall only be permitted if the site on which the RD-25 use is proposed is designated within and in conjunction with the approval of a small lot tentative subdivision map, <u>and</u> (2) the application for such tentative map clearly states that such site or the applicable portion of such site, is proposed for dedication and the approved tentative subdivision map shall include a condition requiring that such site or portion thereof be dedicated to the Sacramento Housing and Redevelopment Authority ("SHRA") for development of an affordable housing project.

   In the event that a landowner agrees to dedicate a site to SHRA for development of an affordable housing project, the landowner shall be entitled to receive a density bonus on its remaining property comprising the subject tentative subdivision map for the housing units otherwise lost due to the dedication.

VINEYARD CREEK AND VINEYARD POINT SUBDIVISIONS

Two separate subdivision maps and rezone projects are proposed along with the Specific Plan modifications. The Vineyard Creek project is a request for a Rezone from AG-20 to RD-5, RD-7, RD-10, RD-20, and O; and a tentative Vesting Subdivision Map to create 390 total lots including: 377 residential lots, one park site, three open space

lots, one detention facility lot, two future residential lots, one multi-family lot, and six landscape corridor lots. The project site is currently designated as an Urban Development Area by the Sacramento County General Plan, and for single-family residential (3-5 units per acre), single family residential (4-7 units per acre), medium-density residential (7-12 units per acre), multi-family residential (12-22 units per acre), and open space (O) uses by the amended North Vineyard Station Specific Plan.

The Vineyard Point project is a request for a Rezone from AG-20 to RD-5, RD-7, RD-10, RD-20, and O; and a tentative Vesting Subdivision Map to create 769 total lots including: 754 residential lots, one park site, one pedestrian access lot, one school site lot, one water tank site lot, two well site lots, one detention facility lot, one drainage channel lot, one pump station lot, one SMUD site lot, and four landscape corridor lots. The project site is currently designated as an Urban Development Area by the Sacramento County General Plan, and for single-family residential (3-5), single family residential (4-7), medium-density residential (7-12), multi-family residential (12-22), public services, and open space (O) uses by the amended North Vineyard Station Specific Plan.

IMPACTS AND ANALYSIS

INCREASED DENSITY OF PLAN

The increase in the number of units in the Plan area does not affect the planned infrastructure for the NVSSP as is discussed in subsequent sections of this SEIR. In fact, the increased holding capacity bring the Plan in line with the original Preferred Specific Plan for 6,339 units as analyzed in certified Final EIR in 1998.

The addition of units from the density bonus program should not have a significant effect on the Plan Area. Historically, in Sacramento County, most development does not occur at the zoned maximum densities. Typically developments tend to net 75% to 90% of their holding capacity. Those applicants that choose to participate in the density bonus program would more than likely exceed their unit allocation. However, this would be offset by those properties that develop conventionally with results under their allocated units. Furthermore, efficient use of land, which has urban services, that steers development pressures from the urban fringe areas is considered environmentally superior.

PROPOSED SUBDIVISION MAPS

SPECIFIC PLAN CONSISTENCY

The proposed land use designations for the Vineyard Creek Subdivision are consistent with the amended North Vineyard Station Specific Plan Land Use Diagram. In addition to land use designations, the NVSSP contains a dwelling unit cap of 6,063 units. This

cap is enforced via the Specific Plan Allocation Table 4.1.2, which contains a cap on the number of dwelling units that can be developed on specific parcels within the NVSSP area. The dwelling unit allocation for the single-family residential area is 400. The NVSSP requires development at density of no less than 75% of the unit allocation, in this case 300 units. The applicant is proposing the creation of 377 single-family lots (94% of the maximum). Vineyard Creek is, therefore, consistent with the density requirements of the NVSSP.

The proposed land use designations for the Vineyard Point Subdivision are consistent with the amended North Vineyard Station Specific Plan Land Use Diagram. The dwelling unit allocation for the single-family and medium-density residential area is 855. The NVSSP requires development at density of no less than 75% of the unit allocation, in this case 640 units. The applicant is proposing the creation of 754 residential units (88% of the maximum). Vineyard Point is, therefore, consistent with the density requirements of the NVSSP.

The NVSSP contains the following policies regarding residentially designated areas:

1. Preserve the integrity of existing neighborhoods by preventing the encroachment of incompatible land uses and associated activities (e.g., excessive through traffic).

2. Rear and side yards shall face streets designated as Arterial and Thoroughfare streets on the Circulation Plan. Subdivisions shall be separated from Arterial and Thoroughfare streets by landscaped areas, sound walls, fences, and/or berms that conform to the Design Guidelines included in this Plan.

3. Subdivisions shall be designed in order to reduce through traffic; however, multiple linkages for pedestrians and bicyclists are encouraged.

4. Residential subdivisions shall be designed to facilitate pedestrian and bicycle travel.

5. Design and architecture of proposed residential projects should consider the Design Guidelines included in the Specific Plan.

6. Private open space and recreation amenities that will meet the needs of the resident population shall be provided in multi-family residential projects.

7. Residential lotting patterns should promote opportunities for public access into public open spaces. Parks and other community open spaces should be accessible at points along the street systems.

8. Residential subdivisions shall be designed to facilitate surveillance of parks and open space areas by residents and Sheriff patrols.

9. Single Family and Medium Density Residential dwellings shall have frontage on, and driveway access to, Collector Streets only in accordance with average daily traffic counts described in Section 7.5.1.

10. Provide a range of land use densities within newly developing areas to enhance community vitality and create a mix of lot and housing types.

11. Variation of housing within neighborhoods is encouraged, provided the mix is architecturally compatible.

12. Long stretches of backup lots along parkways and drainage/creek corridors should be discouraged. The use of front on streets, side yard lotting patterns and open-ended cul-de-sacs are appropriate.

13. Provide adequate buffering within the urban-residential areas where adjacent land uses differ significantly. Appropriate buffering techniques include larger lots, additional setbacks, landscape corridors or any appropriate combination.

The NVSSP also contains residential development and design standards. The proposed project would be expected to comply with the standards set forth in the NVSSP. The proposed project appears to be generally consistent with the policies listed above.

The other land use proposed on the project sites is Open Space. The NVSSP contains the following policies regarding Open Space:

1. Storm drainage in open space areas shall be by means of natural or natural-appearing stream courses, rather than closed culverts, except where in conflict with other planned facilities.

2. Except where wetlands mitigation, drainage channel, or stormwater detention construction is proposed and where necessary to prevent erosion, grading and construction shall be prohibited in designated open space areas. In instances where grading is permitted, the minimum necessary shall be allowed.

3. Pedestrian and bicycle trails and pathways are encouraged within open space areas to the extent possible. Such facilities shall be located and designed to minimize disturbance of natural features.

4. To the maximum extent feasible, uses abutting Open Space shall be oriented and designed to permit surveillance of these areas in order to discourage unlawful activities.

5. Where residential development abuts Parkways and Drainage Parkways, fences shall adhere to the following design: six (6) feet in height, consisting of three (3) feet of wrought iron on top of three (3) feet of masonry wall.

Again, the NVSSP contains further guidelines regarding the development of open space. The guidelines vary depending on the specific type of open space proposed. Several types of open space are proposed on the subject site, including a park, drainage parkway, and storm water detention. Project development would be expected to comply with specific requirements contained in the NVSSP associate with each of the proposed open space areas. The projects appear generally consistent with the Open Space Policies contained in the NVSSP.

ZONING CONSISTENCY

Both the Vineyard Creek and Vineyard Point sites are currently zoned AR-20 for agricultural uses on minimum 20-acre lots. Approval of the proposed zoning change from AG-20 to various residential and open space zones would allow substantially more intensive uses than could otherwise be developed pursuant to the existing zoning. Potential impacts due to the intensification of land uses, including land use conflicts and growth inducement, were analyzed in the Final EIR for the North Vineyard Station Specific Plan. The FEIR pointed out that although the Plan Area and much of the surrounding properties are currently zoned for agricultural-residential and general agricultural uses, the conversion of this land for urban development was committed during the General Plan approval process and the related land use impacts were also acknowledged at that time.

The evolution of the project area from rural setting to an urban one will result in some inherent land use conflicts that, albeit temporary in some situations, could last for several years. Those residents choosing to maintain a rural lifestyle will feel the pressures of encroaching urbanization, while some urban dwellers may find adjacent agricultural practices to be annoying. Some small scale farming operations may find some of their activities will have to be curtailed or substantially modified in order to mitigate impacts to adjacent urban uses. Conversely, urban uses can bring undesirable influences to agricultural uses such as trespass, vandalism, domestic pets, and traffic congestion.

The previous EIR concluded that potential land use compatibility impacts associated with holdover agricultural-residential or general agricultural uses located both within and just outside the Urban Development Area can be mitigated to less than significant levels through implementation of General Plan policies, proposed Specific Plan policies, and established Zoning Code development standards.

CONCLUSION ON LAND USE IMPACTS

The proposed developments are generally consistent with the General Plan, North Vineyard Station Specific Plan, and the Sacramento County Zoning Code. The proposed amendments to the Specific Plan are in response to a need throughout the unincorporated County for affordable housing. The number of potential additional units that may be developed in the Plan area as a result of these changes represents only a small overall increase in the total number of units within the NVSSP.

Impacts to Land Use are considered less-than-significant.

MITIGATION MEASURES:

None required.

5 PUBLIC FACILITIES FINANCING PLAN

INTRODUCTION

The NVSSP area is designated as an urban growth area in the County of Sacramento General Plan. A land use plan has been prepared to accommodate future development while corresponding public facility master plans have been prepared to identify the major facilities required for NVSSP to develop. This chapter discusses the NVSSP Financing Strategy which identifies the major infrastructure improvements necessary to support the proposed level of development, analyzes phasing constraints, provides the costs per acre for infrastructure categories, and identifies existing and potential funding sources.

State Planning and Zoning Laws (California Government Code) require specific plans to identify in detail the essential infrastructure and services needed to support the land uses described in the plan, as well as a program of implementation and financing measures necessary to carry out those improvements (Section 65451).

The project site is not included in any existing Public Facilities Financing Plan area and will therefore require a financing strategy to fund public facilities needed to serve new development in the Plan Area. The requirement for a financing strategy is established by Policy LU-8 of the County General Plan, which states:

> Policy LU-8. Infrastructure financing plans which specify the extent, timing, and estimated cost of all necessary infrastructure shall be approved by the Board of Supervisors, together with the approval of zoning for any urban uses in urban growth areas. The resulting financing mechanisms shall be implemented prior to the approval of all entitlements in urban growth areas.

Because the proposed project includes requests for rezoning and tentative subdivision map entitlements, preparation and approval of a financing plan for the NVSSP area is required at this time.

DESCRIPTION OF PROPOSED FINANCING PLAN

The NVSSP Public Facilities Financing Plan provides the following summary of the Financing Plan:

INTRODUCTION

This Public Facilities Financing Plan sets forth a strategy to finance the backbone infrastructure and other public facilities required to serve the proposed land uses in the

North Vineyard Station Specific Plan (NVSSP). The strategy proposed is designed to be flexible enough to accommodate the development plans of a diverse set of multiple NVSSP property owners, while assuring the County of Sacramento that the required facilities are constructed when necessary. The Financing Plan includes a combination of existing fee programs, the development of the North Vineyard Station Fee Program (NVSFP), the possible use of Mello-Roos bond financing, and other funding mechanisms.

PROJECT SUMMARY

The NVSSP is located in Sacramento County approximately 13 miles southeast of Downtown Sacramento and two miles north of Elk Grove. The NVSSP is approximately 1,597 acres in size and is bounded by Florin Road on the north, Gerber Road on the south, the extension of Vineyard Road on the east, and Elder Creek (west side, top of channel) which roughly constitutes the western border.

The NVSSP is characterized as a primarily underdeveloped, semi-rural area containing a scattering of 13 older residences and a few non-residential uses. Buildout within the NVSSP is planned for 5,732 housing units (includes the 13 older residences for a net new buildout of 5,719 units), including 4,852 single family units, 187 medium density units, and 680 multi-family units. The NVSSP also includes 64 acres of parks, 21 acres of schools, 39 acres of commercial and business professional, a 20-acre (existing) golf course, a 10-acre transit center and 264 acres designated as streets, parkway, railroad right of way (ROW), and drainage.

The NVSSP is anticipated to buildout over a ten to twenty-year period. During this period, it is anticipated that development within the NVSSP will likely occur in six phases: Phase A-1, Phase A-2, Phase B, Phase C, Phase D, and Phase E. The actual phases of development may be different from that outlined in the Financing Plan. Plate PF -1 shows the phasing plan.

BACKBONE INFRASTRUCTURE AND PUBLIC FACILITIES SUMMARY

Buildout of the NVSSP will require construction of $106.4 million in roadway, frontage lane improvements, water, sewer and drainage backbone infrastructure costs, including ROW acquisition and $95.8 million in other public facility improvements.

Total improvements are estimated to be $202.2 million at buildout, $26.7 million in Phase A-1, $52.4 million in Phase A-2, $32.5 million in Phase B, $37.0 million in Phase C, $29.2 million in Phase D, and $24.3 million for Phase E of development as summarized in Table 5-1. A brief summary of the key components of each phase is shown in the Phase Summary in Table 5-2.

Plate PF -1
North Vineyard Station Specific Plan
Development Phasing

North Vineyard Station Specific Plan

Development Phasing Exhibit for Entire Plan Area

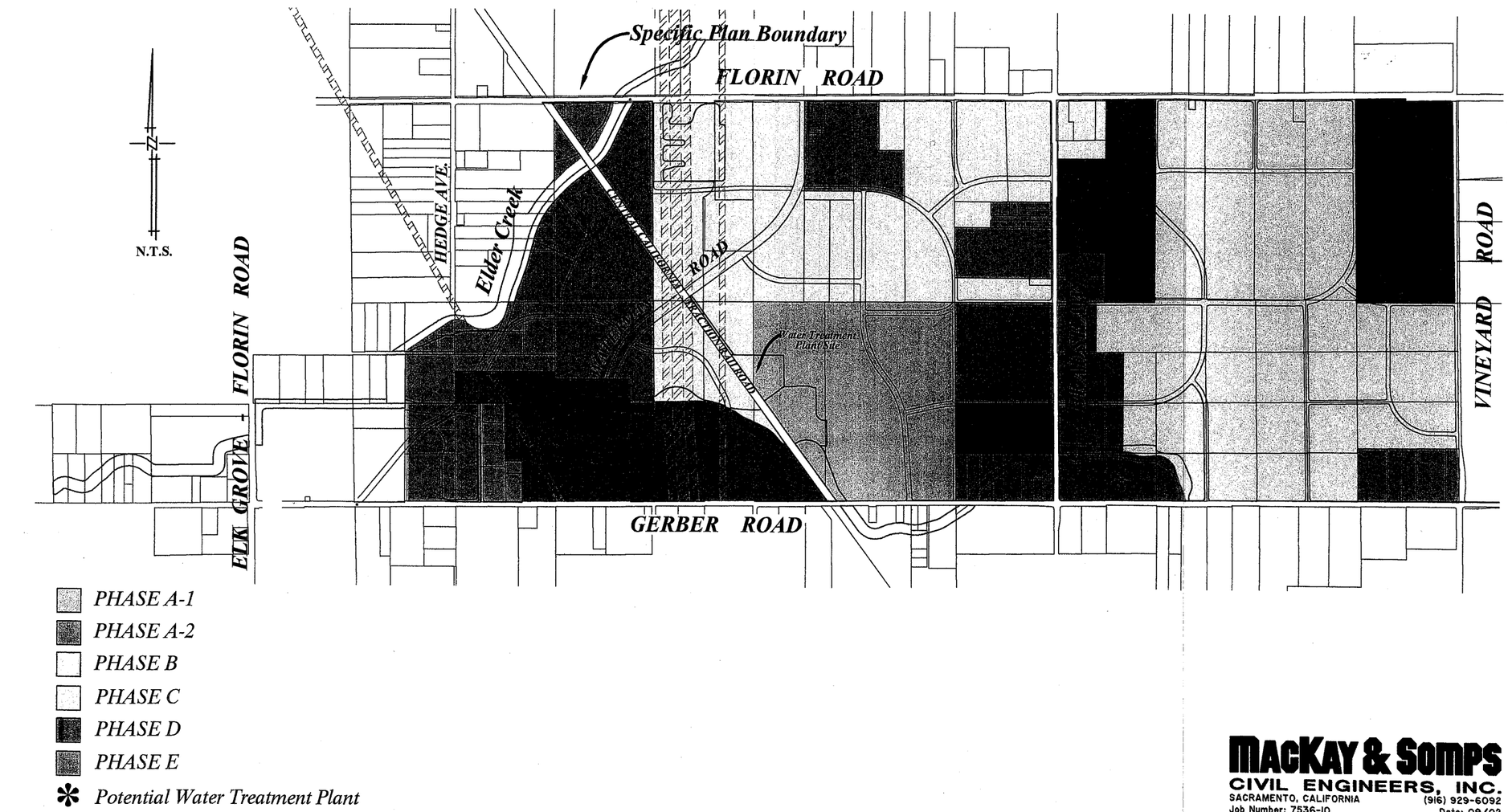


Table 5-1
North Vineyard Station Financing Plan
Preliminary Cost Estimates by Phase (2003 $)

DRAFT

Figure 1
North Vineyard Station Financing Plan
Preliminary Cost Estimates By Phase (2003 $)

Facility	Reference: Appendix A	Reference: Financing Plan Chapter	Phase A-1	Phase A-2	Phase B	Phase C	Phase D	Phase E	Buildout
Major Infrastructure									
Roadway	A - 1	V	$7,091,200	$10,194,100	$11,431,000	$3,443,700	$4,998,200	$7,712,600	$44,870,800
Frontage Lane Improvements	A - 2	V	$280,800	$2,767,100	$1,212,900	$1,142,700	$1,819,400	$947,700	$8,170,600
Water	A - 3	VI	$2,756,800	$10,131,500	$347,200	$1,640,500	$490,500	$0	$15,366,500
Sewer	A - 4	VII	$3,823,000	$1,937,000	$1,206,000	$3,654,000	$1,197,000	$0	$11,817,000
Drainage - Zone 11A	A - 5	VIII	$1,780,900	$5,163,300	$0	$3,377,200	$2,636,800	$707,900	$13,666,100
Drainage - NVSSP Supp.	A - 5	VIII	$979,900	$6,269,800	$0	$2,619,700	$1,894,800	$712,800	$12,477,000
Subtotal Major Infrastructure			**$16,712,600**	**$36,462,800**	**$14,197,100**	**$15,877,800**	**$13,036,700**	**$10,081,000**	**$106,368,000**
Public Facilities									
Parks and Recreation	A - 6	IX	$1,029,800	$2,044,200	$1,264,400	$2,330,900	$1,799,900	$3,725,800	$12,195,000
Schools	A - 7	X	$7,654,000	$12,047,000	$13,275,000	$16,027,000	$11,726,000	$8,633,000	$69,362,000
Library	A - 8	XI	$171,000	$272,000	$320,400	$371,400	$267,200	$192,000	$1,594,000
Fire Protection	A - 9	XII	$650,900	$901,300	$1,033,900	$1,453,200	$1,010,700	$655,200	$5,705,200
Transit	A - 10	XIII	$452,500	$715,600	$2,418,800	$1,007,900	$1,351,100	$1,031,900	$6,977,800
Subtotal Public Facilities			**$9,958,200**	**$15,980,100**	**$18,312,500**	**$21,190,400**	**$16,154,900**	**$14,237,900**	**$95,834,000**
TOTAL COSTS			**$26,670,800**	**$52,442,900**	**$32,509,600**	**$37,068,200**	**$29,191,600**	**$24,318,900**	**$202,202,000**

"Total_cost"

Source: MacKay & Somps and EPS.

Table 5-2
North Vineyard Station
Phasing Summary

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Figure 1a
North Vineyard Station
Phasing Summary

	Phase A-1	Phase A-2	Subsequent Phases (B, C, D & E)
Roadway	**Construction:** Reconstruct Gerber Rd. from Elk Grove-Florin to west of Bradshaw at Gerber Creek Crossing #3. Consisting of two travel lanes, shoulders and a center turn lane. **Notes:** Two points of access will be required. **Estimated Cost** $7,091,200 **Estimated Fee Revenue** $4,238,600	**Construction:** 2-lane roadway with center turn lane for Waterman Rd. between Gerber Rd. and southwest of CTRR crossing for development of the portion of the Phase A-2 property that is immediately southwest of the CTRR crossing. For property northeast of the CTRR crossing, Waterman Rd. will be constructed from Florin Rd. south for the length which abuts the developing property. Construction of full intersection improvements at Waterman Rd. & Gerber Rd. and 450' in length from each side of the intersection will also be required. **Notes:** The full length of Waterman Rd. is required to be constructed prior to recordation of maps for 2,200 cumulative equivalent dwelling units. Adequate secondary access will be required. Subsection A-1.2 identifies offsite roadway improvements required in this phase with cumulative dwelling unit thresholds to identify timing during the buildout of this phase. **Estimated Cost** $10,194,100 **Estimated Fee Revenue** $6,718,500	**Construction:** On-site and offsite roadway improvements have been identified and cumulative unit thresholds established to provide necessary roadway access and capacity. **Notes:** Refer to Figure A-1.2 for details of the unit threshold indicating the timing of construction of roadway capacity improvements **Estimated Cost** $27,585,500 **Estimated Fee Revenue** $33,913,700
Frontage Lane	**Construction:** The north side of Gerber Rd. between the CCTC RR crossing and Gerber Creek Crossing #3 will be fully improved. **Estimated Cost** $280,800 **Estimated Fee Revenue** $771,800	**Construction:** Full improvement to the south side of Florin, Waterman and west side of Bradshaw frontage will be required. **Estimated Cost** $2,767,100 **Estimated Fee Revenue** $1,223,500	**Construction:** Full improvement of major road frontages associated with each phase. **Estimated Cost** $5,122,700 **Estimated Fee Revenue** $6,175,300
Sewer	**Construction:** A trunk sewer will be required in Gerber Rd. from Elk Grove-Florin Rd to the area needing sewer service **Estimated Cost** $3,823,000 **Estimated Fee Revenue** $1,317,000	**Construction:** The Regional Sanitation District is programmed to construct the Bradshaw Interceptor Sewer along Gerber Creek that serves this phase. To serve the northern portion of this phase a trunk sewer must be constructed in Florin Rd. east of and connecting to the Bradshaw Interceptor. **Estimated Cost** $1,937,000 **Estimated Fee Revenue** $1,920,000	**Construction:** Subsequent phases will need to construct trunk sewers to serve each development phase extending from previous trunk sewers or the Bradshaw Interceptor. **Estimated Cost** $6,057,000 **Estimated Fee Revenue** $10,020,300

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Figure 1a
North Vineyard Station
Phasing Summary

	Phase A-1	Phase A-2	Subsequent Phases (B, C, D & E)
Water	**Construction:** Initial water supplyprovided by SCWA from existing sources outside the NVSSP on a first come first serve basis. Availability of water from existing system subject to change, reflecting ongoing development & increasing water demands outside the NVSSP area. SCWA will re-evaluate available capacity prior to approval of infrastructure improvement plans. Water transmission main will be extended past the so-western boundary of the NVSSP along Gerber Road and connect to the Zone 40 transmission facilities in Elk Grove Florin Road. A fire well facility will be constructed on-site to supplement emergency water supplies. **Notes:** Tentative Map approvals will be required to comply with General Plan Policy CO-20. Staff of Zone 40 will review, at the time of approval of any development improvement plans, the need for additional water supply facilities. **Estimated Cost** $2,756,800 **Estimated Fee Revenue** $2,510,300	**Construction**: Upon exhaustion of available water from the existing Zone 40 system, the water supply system will require expansion to include two additional groundwater wells, conversion of the previously constructed fire well to a domestic supply well, a water treatment facility and storage tank within the Plan Area. Phase A-2 includes water transmission lines extending north from the Phase A-1 construction to the new treatment/storage facility and into the NVSSP. It includes construction along Bradshaw Road. **Notes:** Groundwater production will be limited to a maximum pumping rate of 2,220 gpm. Tentative Map approvals will be required to comply with General Plan Policy CO-20. **Estimated Cost** $10,131,500 **Estimated Fee Revenue** $3,955,500	**Construction:** Prior to cumulative development of approximately 2,600 units (resulting in a maximum day demand of 2,220 gpm) increased surface water deliveries from SCWA supplies must occur. **Estimated Cost** $2,478,200 **Estimated Fee Revenue** $16,853,100
Drainage	**Construction:** Due the geographical location of this phase, the necessary improvements consist of construction of Detention Basin G41 with pumping facilities and improvement of Gerber Creek between the CTRR crossing and Gerber Rd. **Estimated Cost** $2,760,800 **Estimated Fee Revenue** $2,361,000	**Construction:** Consistent with the NVSSP Master Drainage Plan (January, 2003), the following is required: construction of Detention Basin E24B for development areas which drain to this basin. Elder Creek channel must be improved from upstream of Florin Rd. to Detention Basin E24B. Detention Basin E26 to be constructed for development areas draining to this basin, together with an adequate outfall to Elder Creek. A portion of Detention Basin E24A for the most southwestern portion of the planned development within Phase A-2 which drains into this basin. Full Channel Improvements for Gerber Creek from the easterly end of the existing channel near the eastern boundary of the Champions Golf Course to approximately 600 ft. east of the new Waterman Rd. bridge. **Estimated Cost** $11,433,100 **Estimated Fee Revenue** $3,655,200	**Construction:** As subsequent phases proceed, each phase must comply with the Master Drainage Plan (January 2003) or demonstrate through a detailed hydraulic analysis to the satisfaction of the Department of Water Resources that any proposed modification of the phasing contained in the Master Drainage Plan can achieve the original objectives. **Estimated Cost** $11,949,200 **Estimated Fee Revenue** $16,140,800
Other Facilities and Services	**Construction:** Park facilities will be improved within this phase as Southgate P&R programs the onsite park land. School fees will be provided in the phase for the Elk Grove Unified School District to utilize in the implementation of its Master Plan. Fees will be contributed for new capital facilities for library, fire protection, and transit. The respective service providers will determine the timing of actual construction of needed facilities. **Estimated Cost** $9,958,200 **Estimated Fee Revenue** $7,906,400	**Construction:** Park facilities will be improved within this phase as Southgate P&R programs the onsite park land within this phase. School fees will be provided in the phase for the Elk Grove Unified School District to utilize in its Master Plan. Respective service providers will determine the timing of construction of their respective facilities. **Estimated Cost** $15,980,100 **Estimated Fee Revenue** $11,337,200	**Construction:** Park facilities and school facilities will be dedicated, acquired and improved or constructed as subsequent phases develop. Fee contributions to a regional library facility, regional fire facilities and a transit park and ride will occur phase by phase. Timing of providing these facilities will be determined by the respective agencies. **Estimated Cost** $69,895,700 **Estimated Fee Revenue** $52,318,900

Source: MacKay & Somps
The NVSSP Financing Plan contains a possible phasing plan based upon logical infrastructure phasing and at least in the initial phases, expected development timing. This represents only one possible phasing scenario. The NVSSP Financing Plan is proposed to permit other phasing approaches but is structured to ensure timely construction of necessary infrastructure. The following description is the approach for Phases A-1 & A-2 together with key thresholds identified for infrastructure to serve subsequent phases (B, C, D, & E).
Prepared by EPS

FINANCING SUMMARY

PURPOSE

The purpose of the NVSSP Financing Plan is to recommend the appropriate financing mechanisms to fund the necessary backbone infrastructure and other public facility costs required to serve the NVSSP. The goal is to identify financing mechanisms that are flexible enough to ensure the required improvements are constructed when necessary. The financing mechanisms utilized will be dependent upon the types of facilities and when the facilities are needed. Construction will be phased so that facilities are available when needed.

This Financing Plan recommends a combination of existing fee programs, the proposed NVSFP, bond funding mechanisms, and other financing mechanisms to fund the backbone infrastructure and public facilities costs required to serve the NVSSP at buildout as shown in Table 5-3. Existing fee programs will be used extensively; however, it is not anticipated that these mechanisms will fully fund all of the needed improvements. Therefore, in order to provide for funding for the total cost of improvements, the Financing Plan recommends the establishment of a new NVSFP.

The Financing Plan also anticipates the use of other funding mechanisms such as developer advances, the Elk Grove Unified School District's (EGUSD's) existing Mello Roos Community Facilities District (CFD) No. 1, and matching State school funding. Developer advances or bond financing through a NVSSP Mello-Roos CFD formed by the County will be used to fund infrastructure improvements needed during the development of the NVSSP before the collection of fees or other revenue reimbursement sources.

EXISTING FEE PROGRAMS

Existing fee programs include Sacramento County development impact fee programs and the EGUSD's mitigation fees as outlined below.

Sacramento County District IV Road and Transit Fees
Sacramento County Water Agency (SCWA) Zone 40 Water Fees
County Sanitation District No. 1 (CSD-1) Sewer Fees
Sacramento County Regional Sanitation District (SCRSD) Sewer Fees
Sacramento County Zone 11A Drainage Fees
Sacramento Metro Fire District Capital Facilities Fee
EGUSD School Fee Program

Existing fees are shown in Table 5-4. The Financing Plan assumes that these existing mechanisms will be used as primary funding sources. It is estimated that the NVSSP will generate $125.2 million in existing fee program revenue at buildout as shown in Table 5-5. A mapping factor of 90 percent was used to estimate the total amount of fee revenue anticipated from the plan area. Fee revenue was calculated by multiplying the existing fee per unit by the reduced, mapping factor number of units.

Table 5-3
North Vineyard Station Financing Plan
Sources and Uses – Buildout

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Figure 2
North Vineyard Station Financing Plan
Sources and Uses - Buildout

Facility	Estimated Costs At Buildout	Existing Fee Programs		Proposed Fee Program	Difference
		Program	Amount		
Major Infrastructure					
Roadway	$44,870,800		$0	$44,870,800	**$0**
Frontage Lane Improvements	$8,170,600		$0	$8,170,600	**$0**
Water [1]	$15,366,500	Zone 40	$23,318,900	$0	**$7,952,400**
Sewer [1]	$11,817,000	CSD-1	$13,257,300	$0	**$1,440,300**
Drainage - Zone 11A [2]	$13,666,100	Zone 11A	$9,680,000	$0	**($3,986,100)**
Drainage - NVSSP Supplemental	$12,477,000		$0	$12,477,000	**$0**
Subtotal Major Infrastructure	**$106,368,000**		**$46,256,200**	**$65,518,400**	**$5,406,600**
Public Facilities					
Parks and Recreation	$12,195,000		$0	$12,195,000	**$0**
Schools [3]	$69,362,000	Elk Grove USD/State Funding	$69,362,000	$0	**$0**
Library	$1,594,000		$0	$1,594,000	**$0**
Fire Protection	$5,705,200	Sac Metro Fire	$5,705,200	$0	**$0**
Transit	$6,977,800		$0	$6,977,800	**$0**
Subtotal Public Facilities	**$95,834,000**		**$75,067,200**	**$20,766,800**	**$0**
TOTAL	**$202,202,000**		**$121,323,400**	**$86,285,200**	**$5,406,600**

"sources_buildout"

[1] Any surplus at buildout in actual fees collected over actual cost of facilities needed to serve the NVSFP will be applicable to other benefitting areas in the Zone 40 or CSD-1 system.
[2] Any negative difference at buildout will be funded by Zone 11A fees collected from other benefitting areas outside the plan area.
[3] Includes funding from Elk Grove Unified School District Level 2 fees, EGUSD CFD 1 and the State. See Chapter X for details.

Table 5-4
North Vineyard Station Financing Plan
Fee Summary – Buildout
Existing Conditions

Figure 3a
North Vineyard Station Financing Plan
Fee Summary - Buildout
Existing Fee Programs

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Buildout	Total	SFR 1-3	SFR 3-5	SFR 4-7	MDR 7-12	MFR 12-22	Commercial	Business Professional
LAND USE INFORMATION								
Estimated Units	5,147	510	2,752	1,104	168	612		
Acres	1,156	283	612	205	19	38	30	7
Typical Units Per Acre		1.8	4.5	5.4	9.0	16.2		
Assumed Average Sqft of Structures		3,500	3,000	2,200	1,500	1,000	325,502	105,598
EXISTING FEE PROGRAMS		*Per Unit [1]*					*Per Acre*	
County of Sacramento Applicable to Region								
Roadway - District IV		$749	$749	$749	$749	$567	$23,740	$25,918
Sewer - SRCSD		$4,500	$4,500	$4,500	$4,500	$3,375	$4,901	$13,329
Transit - District IV		$117	$117	$117	$117	$117	$5,554	$6,961
Sacramento Metro Fire Fee		$1,435	$1,230	$902	$615	$410	$5,990	$8,146
County of Sacramento Applicable to NVSFP								
Water - Zone 40		$4,641	$4,641	$4,641	$4,641	$3,481	$3,816	$3,816
Sewer - CSD-1 [1]		$6,172	$2,470	$2,058	$1,235	$685	$11,112	$11,112
Drainage - Zone 11A		$2,010	$2,010	$1,788	$1,131	$657	$15,010	$15,010
Subtotal County of Sacramento		**$19,624**	**$15,717**	**$14,755**	**$12,988**	**$9,292**	**$70,123**	**$84,292**
Elk Grove School District		$11,795	$10,110	$7,414	$5,055	$3,370	$3,703	$5,036
Total Existing Fees Per Unit		**$31,419**	**$25,827**	**$22,169**	**$18,043**	**$12,662**		
Total Existing Fees Per Acre							**$73,825**	**$89,327**

[1] The CSD-1 is a per acre fee that was adjusted to a per unit equivalent based on actual units per acre for purposes of this summary.

"Feesumunit"

Table 5-5
North Vineyard Station Financing Plan
Fee Revenue Summary – Buildout

Figure 4a
North Vineyard Station Financing Plan
Fee Revenue Summary - Buildout

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Buildout

Buildout	Total	SFR 1-3	SFR 3-5	SFR 4-7	MDR 7-12	MFR 12-22	Commercial	Business Professional
				Units			*Acres*	
LAND USE INFORMATION								
Units	5,147	510	2,752	1,104	168	612		
Acres		283	612	205	19	40	29.89	7.13
Assumed Average Sqft of Structures		3,500	3,000	2,200	1,500	1,000	325,502	105,598
EXISTING FEE PROGRAMS								
County of Sacramento Applicable to Region								
Roadway - District IV	$4,638,000	$382,000	$2,061,000	$827,000	$126,000	$347,000	$710,000	$185,000
Sewer - SRCSD	$22,714,000	$2,296,000	$12,385,000	$4,969,000	$757,000	$2,066,000	$146,000	$95,000
Transit - District IV	$819,000	$60,000	$322,000	$129,000	$20,000	$72,000	$166,000	$50,000
Sacramento Metro Fire Fee	$5,705,000	$732,000	$3,385,000	$996,000	$104,000	$251,000	$179,000	$58,000
County of Sacramento Applicable to NVSSP								
Water - Zone 40 [1]	$23,318,000	$2,368,000	$12,773,000	$5,125,000	$781,000	$2,130,000	$114,000	$27,000
Sewer - CSD-1	$13,257,000	$3,149,000	$6,797,000	$2,273,000	$208,000	$419,000	$332,000	$79,000
Drainage - Zone 11A	$9,680,000	$1,026,000	$5,532,000	$1,974,000	$190,000	$402,000	$449,000	$107,000
Subtotal County of Sacramento	**$80,131,000**	**$10,013,000**	**$43,255,000**	**$16,293,000**	**$2,186,000**	**$5,687,000**	**$2,096,000**	**$601,000**
Elk Grove School District	**$45,091,000**	$6,019,000	$27,825,000	$8,187,000	$851,000	$2,062,000	$111,000	$36,000
Total Existing Fee Programs	**$125,222,000**	**$16,032,000**	**$71,080,000**	**$24,480,000**	**$3,037,000**	**$7,749,000**	**$2,207,000**	**$637,000**
PROPOSED NVSFP								
North Vineyard Station Fee Program								
Roadway	$44,870,800	$4,975,000	$21,555,500	$8,759,100	$995,300	$3,412,800	$4,319,700	$853,400
Frontage Lane Improvements	$8,170,600	$906,000	$3,925,100	$1,595,100	$181,200	$621,400	$786,400	$155,400
Supplemental Drainage	$12,477,000	$1,386,100	$6,524,200	$2,670,900	$300,300	$692,500	$729,100	$173,900
Parks and Recreation	$12,195,000	$1,384,700	$6,517,900	$2,669,200	$299,500	$1,084,100	$183,600	$56,000
Library	$1,594,000	$184,800	$869,000	$355,900	$40,000	$144,300	$0	$0
Transit	$6,977,800	$531,900	$2,301,700	$930,700	$120,700	$1,356,100	$1,488,600	$248,100
Total Proposed NVSFP	**$86,285,200**	**$9,368,500**	**$41,693,400**	**$16,980,900**	**$1,937,000**	**$7,311,200**	**$7,507,400**	**$1,486,800**
TOTAL FEE REVENUE	**$211,507,200**	**$25,400,500**	**$112,773,400**	**$41,460,900**	**$4,974,000**	**$15,060,200**	**$9,714,400**	**$2,123,800**

"Feerevsum"

[1] Commercial and Business Professional are estimated using an average per acre fee. The actual is fee based on a calculation of the fee per acre plus the fee per building.

[2] NVSFP fees are based on fees per acre as established by DUE factors as shown in the individual infrastructure chapters and Appendix E.

PROPOSED NVSFP

A new NVSFP is recommended to fund roadway, frontage lane improvements, drainage, parks and recreation, the fair share of a library, and transit facilities. Proposed fees are shown in Table 5-4and are estimated on a per acre basis based on DUE factors provided by Sacramento County. The total funding by the new NVSFP is estimated at approximately $86.3 million at buildout as shown in Table 5-5.

OTHER FUNDING MECHANISMS

DEVELOPER ADVANCES

This Financing Plan anticipates that developer advances will be used to advance fund any infrastructure improvements needed in the initial phases of the NVSSP and before the collection of fees or other revenue sources.

EGUSD'S CFD NO. 1 AND STATE FUNDING

The school fee revenue differences will be funded by expected revenue from the EGUSD's existing districtwide CFD No. 1 and State funding.

BOND FUNDING MECHANISMS

Although the NVSSP infrastructure and public facilities are primarily included in fee programs to ensure that each development pays its fair share of these costs, many major improvements will be required at the onset of each phase of development. One or more CFDs will likely be formed to provide public debt financing for improvements needed early in the development of each phase. Fee credits will be provided for appropriate facilities that are also funded by the existing and new fee programs.

The amount of available CFD bond proceeds for construction is estimated to be $55.9 million assuming that all NVSSP development participates in the CFDs.

FINANCING PLAN IMPLEMENTATION

The last requirement of General Plan Policy LU-8 is that the resulting financing mechanisms be implemented before the approval of Final Maps in the NVSSP. Implementation of the Financing Plan ensures that new development will be committed to pay its fair share of the cost of backbone infrastructure and other public facilities required to serve the project area. Facilities will be constructed as they are needed to serve new development. The Sacramento County Public Works Infrastructure Finance Section (IFS) will administer implementation of the Financing Plan, which will require:

- Preparation of a Nexus Study and Ordinances to implement the NVSFP;
- Formation of the Mello-Roos CFD(s) and administration of subsequent bond sales and tax collection;

- Reviewing the CIPs;
- Monitoring identified revenue sources;
- Estimating fee program cash flows;
- Accounting for fee payments, fee credits and/or reimbursements;
- Close coordination with all appropriate County departments to implement the Financing Plan;
- Updating and adjusting the fee program as new infrastructure cost, land use, and revenue information become available.

NVSSP FINANCING STRATEGY

The financing strategy and funding sources for NVSSP at buildout are summarized in Table 5-5. Approximately $125.2 million will be funded through the existing fee programs, including Elk Grove School District Fees. Approximately $86.3 million will be paid through the new NVSFP for roadways, frontage lan~~ed~~e improvements, parks, libraries, and transit. In addition, a portion of school costs will be funded through the EGUSD CFD No. 1 and State funding. The NVSFP also includes a supplemental Drainage fee that is proposed as a sub zone of Zone 11.

Table 5-3 compares projected NVSSP buildout funding revenues from all sources to buildout cost estimates. This comparison shows that projected NVSSP buildout fee revenue will cover buildout costs with a $7.9 million surplus from Zone 40 water fees, a $1.4 million surplus from CSD-1 sewer fees and a $4.0 million difference in Zone 11A fees. Any difference in actual fees collected over the actual cost of facilities needed to serve the NVSSP will be applicable to other regional facilities benefiting areas as described in each individual infrastructure section. It is anticipated that actual fees collected for drainage improvements will be less than the estimated cost of improvements. However, the difference will be funded by fees collected from other areas benefiting from regional facilities within the Zone 11 program.

Developers will privately finance the construction of many of the facilities needed during the first three development phases. After constructing such facilities, developers may be reimbursed for their advances from NVSFP revenues as well as from existing fee program revenues should Phase 1 CFD bonding capacity be insufficient.

Because of the diverse ownership patterns in the NVSSP and the uncertain development phasing, the financing strategy includes a provision for the formation of one or more Mello-Roos CFDs for bond financing of some facilities needed in each development phase of the NVSSP. The proposed initial CFD would fund all or a portion of the infrastructure improvement costs for roadways, water, sewer, and drainage for the areas described in Phases A-1 and A-2. Property owners in other phases may join the initial CFD or set up additional sub-area Mello-Roos CFDs which would be formed for an individual project or group of projects to fund facilities. To the extent that bond financing is utilized, the developer may receive credits and reimbursements against the

appropriate fees. Some development projects or phases may not require bond funding and would handle their infrastructure cost responsibilities through either payment of fees and/or developer advances.

The proposed cost estimates and funding sources are only estimates. The actual costs funded under each category may be adjusted as information regarding project phasing and the facility construction schedule becomes available. Fee credits will be determined by each responsible agency before the sale of CFD bonds.

PHASE A-1 AND A-2 FINANCING STRATEGY

Phase A-1 and A-2 are assumed to be the first development areas of the NVSSP. The funding sources and infrastructure and public facilities costs are outlined in Table 5-6 and Table 5-7. Facilities will be constructed as they are needed to serve new development. As in all development fee programs, however, there is a lag between when the fees are generated and construction of the facilities. Development projects will be conditioned to construct facilities as needed. Developers will receive either fee credits or construct facilities as needed. Developers will receive either fee credits or reimbursements for eligible projects based on the County's reimbursement policies. Properties participating in the Mello-Roos CFD will receive fee credits for eligible facilities funded by the CFD, as determined by each responsible agency.

In Phase A-1, there are approximately $26.7 million in major infrastructure and public facilities costs. It is estimated that $13.2 million will be funded through existing fee programs. The proposed NVSFP will fund $8.2 million. The difference in the amount of fee revenue compared to the cost of infrastructure improvements for this phase will be made up from other funding sources such as Mello-Roos CFD bond funding or developer funding.

In Phase A-2, there are approximately $52.4 million in major infrastructure and public facilities costs. It is estimated that $30.4 million will be funded through existing fee programs. The proposed NVSFP will fund $13.0 million. The difference in the amount of fee revenue compared to the cost of infrastructure improvements for this phase will be made up from other funding sources such as Mello-Roos CFD bond funding or developer funding.

Because of large up-front costs, a Mello-Roos CFD is planned to finance these facilities with land secured bonds. Table 5-8 shows the total bond proceeds available by phase. Table 5-9 shows Phase A-1 and A-2 infrastructure and facility costs proposed to be eligible for CFD bond funding. The total of amount of facilities costs identified exceeds the amount of bond proceeds at this time. It is expected that the facilities list and bond amounts will be fine tuned during the process of forming the Mello-Roos CFD.

The Financing Plan also anticipates that developer advances may be used to fund any infrastructure improvements needed in the initial phases of the NVSSP and before the collection of fees or other revenue reimbursement sources. This Financing Plan assumes that fee credits and/or reimbursements for facilities otherwise funded by the

County fee programs may be available if developers fund and construct fee-funded facilities. Fee credits for completed improvements may be offset against fees until the fee credits are expended. If the cost of the facility exceeds the potential credits for a developer, the County may enter into reimbursement agreement with the developer. Fee credits and reimbursements are available within different time frames depending upon the type of facilities constructed.

INFRASTRUCTURE FACILITY IMPROVEMENTS

ROADWAY

Development within the NVSSP area will have impacts on the entire local circulation network. Portions of roadway improvements benefiting the NVSSP will also benefit other plan areas. For example, the NVSSP is located immediately north of the Elk Grove/West Vineyard Public Facilities Financing Plan Area (EGWV) and some improvements will benefit both areas.

The roadway Capital Improvement Program (CIP) is based on traffic mitigation measures identified in the previously approved NVSSP Environmental Impact Report (EIR) and additional traffic analysis based on the proposed phasing of project development conducted since the approval of the EIR. The additional analysis identified roadway segments and intersections that would be adversely impacted by buildout of the NVSSP under existing plus proposed project conditions. It has been estimated that the NVSSSP will be responsible for $44.9 million of the total local and regional roadway improvements.

In conjunction with the County of Sacramento Transportation Division, the roadway CIP projects will be prioritized based on traffic study results, availability of other funding sources, and the County's overall transportation priorities. The CIP lists a prioritized estimate of roadway improvements for each phase of development.

WATER

The NVSSP will ultimately be served by wells, surface water, distribution mains, treatment and storage facilities located within the NVSSP and in conjunction with other sources provided by Zone 40.

The NVSSP is located within the boundaries of SCWA Zone 40, which usually constructs the necessary water facilities. Development within the NVSSP will be required to pay the Zone 40 fee. Fee revenue generated from this fee is meant to fund water supply, treatment, and transmission facilities within Zone 40.

The NVSSP is expected to generate approximately $23.3 million Zone 40 fee revenue for buildout, or a surplus of $7.9 million. Any surplus in actual fees collected over the actual cost of facilities needed to serve the NVSSP will be applicable to other areas benefiting from regional facilities within the Zone 40 system.

Table 5-6
North Vineyard Station Financing Plan
Sources and Uses – Phase A-1 (2002 $)

DRAFT

Figure 9
North Vineyard Station Financing Plan
Sources and Uses - Phase A-1 (2002 $)

Facility	Estimated Costs At Buildout	Existing Fee Programs		Proposed Fee Program	Difference
		Program	Amount		
Major Infrastructure					
Roadway	$7,091,200		$0	$4,238,600	**($2,852,600)**
Frontage Lane Improvements	$280,800		$0	$771,800	**$491,000**
Water [1]	$2,756,800	Zone 40	$2,510,300	$0	**($246,500)**
Sewer [1]	$3,823,000	CSD-1	$1,317,000	$0	**($2,506,000)**
Drainage - Zone 11A [2]	$1,780,900	Zone 11A	$1,077,300	$0	**($703,600)**
Drainage - NVSSP Supplemental	$979,900		$0	$1,283,700	**$303,800**
Subtotal Major Infrastructure	**$16,712,600**		**$4,904,600**	**$6,294,100**	**($5,513,900)**
Public Facilities					
Parks and Recreation	$1,029,800		$0	$1,282,500	**$252,700**
Schools [3]	$7,654,000	Elk Grove USD/State Funding	$7,654,000	$0	**$0**
Library	$171,000		$0	$171,000	**$0**
Fire Protection	$650,900	Sac Metro Fire	$650,900	$0	**$0**
Transit	$452,500		$0	$452,500	**$0**
Subtotal Public Facilities	**$9,958,200**		**$8,304,900**	**$1,906,000**	**$252,700**
TOTAL	**$26,670,800**		**$13,209,500**	**$8,200,100**	**($5,261,200)**

"sources_a1"

[1] Any surplus at buildout in actual fees collected over actual cost of facilities needed to serve the NVSFP will be applicable to other benefitting areas in the Zone 40 or CSD-1 system.
[2] Any negative difference at buildout will be funded by Zone 11A fees collected from other benefitting areas outside the plan area.
[3] Includes $5.9 million in funding from Elk Grove Unified School District Level 2 Fees and $2.6 million funded by EGUSD CFD 1 and the State. See Chapter X for details.

Table 5-7
North Vineyard Station Specific Plan
Sources and Uses – Phase A-2 (2002 $)

DRAFT

Figure 10
North Vineyard Station Financing Plan
Sources and Uses - Phase A-2 (2002 $)

Facility	Estimated Costs At Buildout	Existing Fee Programs		Proposed Fee Program	Difference
		Program	Amount		
Major Infrastructure					
Roadway	$10,194,100		$0	$6,718,500	**($3,475,600)**
Frontage Lane Improvements	$2,767,100		$0	$1,223,500	**($1,543,600)**
Water [1]	$10,131,500	Zone 40	$3,955,500	$0	**($6,176,000)**
Sewer [1]	$1,937,000	CSD-1	$1,920,000	$0	**($17,000)**
Drainage - Zone 11A [2]	$5,163,300	Zone 11A	$1,613,700	$0	**($3,549,600)**
Drainage - NVSSP Supplemental	$6,269,800			$2,041,500	**($4,228,300)**
Subtotal Major Infrastructure	**$36,462,800**		**$7,489,200**	**$9,983,500**	**($18,990,100)**
Public Facilities					
Parks and Recreation	$2,044,200		$0	$2,040,100	**($4,100)**
Schools [3]	$12,047,000	Elk Grove USD/State Funding	$12,047,000	$0	**$0**
Library	$272,000		$0	$272,000	**$0**
Fire Protection	$901,300	Sac Metro Fire	$901,300	$0	**$0**
Transit	$715,600		$0	$715,600	**$0**
Subtotal Public Facilities	**$15,980,100**		**$12,948,300**	**$3,027,700**	**($4,100)**
TOTAL	**$52,442,900**		**$20,437,500**	**$13,011,200**	**($18,994,200)**

"sources_a2"

[1] Any surplus at buildout in actual fees collected over actual cost of facilities needed to serve the NVSFP will be applicable to other benefitting areas in the Zone 40 or CSD-1 system.
[2] Any negative difference at buildout will be funded by Zone 11A fees collected from other benefitting areas outside the plan area.
[3] Includes $8.2million in funding from Elk Grove Unified School District Level 2 fees and $5.2 million funded by EGUSD CFD 1 and the State. See Chapter X for details.

Table 5-8
North Vineyard Station Financing Plan
Summary of Bonding Capacity by Phase

Figure 8
North Vineyard Station Financing Plan
Summary of Bonding Capacity By Phase

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Bonding Capacity	Assumption	Phase A-1	Phase A-2	Phase B	Phase C	Phase D	Phase E	Buildout
UNIT INFORMATION								
Plan Area Units		541	852	1,136	1,133	828	657	5,147
Plan Area Acres		118.5	172.8	165.3	348.6	227.9	123.0	1,156.1
Annual Special Tax Revenue		**$616,000**	**$972,000**	**$1,058,000**	**$1,291,000**	**$931,000**	**$674,000**	**$5,545,000**
Less Delinquency	10.0%	$62,000	$97,000	$106,000	$129,000	$93,000	$68,000	$554,000
Less Administrative	2.5%	$15,000	$25,000	$27,000	$32,000	$23,000	$17,000	$138,000
Remaining Left for Debt Service		**$539,000**	**$850,000**	**$925,000**	**$1,130,000**	**$815,000**	**$589,000**	**$4,853,000**
BOND SIZING [1]								
Total Bond Size		**$6,575,000**	**$10,368,000**	**$11,283,000**	**$13,783,000**	**$9,941,000**	**$7,184,000**	**$59,196,000**
Term (Years)	25							
Less Estimated Issuance Costs	5.0%	$329,000	$519,000	$564,000	$689,000	$498,000	$360,000	
Less Bond Reserve Fund	10.0%	$658,000	$1,037,000	$1,128,000	$1,379,000	$993,000	$718,000	
Less Capitalized Interest for 12 Months	6.5%	$427,000	$674,000	$733,000	$896,000	$646,000	$466,000	
Construction Proceeds		**$5,161,000**	**$8,138,000**	**$8,858,000**	**$10,819,000**	**$7,804,000**	**$5,640,000**	**$46,467,000**
Construction Proceeds per Unit								
Assuming 2% Annual Escalator								
Total Bond Size (rounded)		**$7,908,000**	**$12,470,000**	**$13,569,000**	**$16,578,000**	**$11,956,000**	**$8,641,000**	**$71,193,000**
Cumulative Bond Size (rounded)		**$7,908,000**	**$20,378,000**	**$33,947,000**	**$50,525,000**	**$62,481,000**	**$71,122,000**	**$71,193,000**
Construction Proceeds (rounded)		**$6,207,000**	**$9,789,000**	**$10,652,000**	**$13,014,000**	**$9,385,000**	**$6,784,000**	**$55,887,000**
Cumulative Construction Proceeds (rounded)		**$6,207,000**	**$15,996,000**	**$26,648,000**	**$39,662,000**	**$49,047,000**	**$55,831,000**	**$55,887,000**

[1] Assuming levels of debt service listed above.

"bond_cap_sum"

Table 5-9
North Vineyard Station Financing Plan
Proposed Authorized Facilities for Phase A-1 and Phase A-2

DRAFT

Figure 11
North Vineyard Station Financing Plan
Proposed Authorized Facilities For Phase A-1 and Phase A-2

Facility	Source	Phase A-1	Phase A-2	Total	Estimated Fee Revenue	Difference
Facility Cost						
Roadways	Appendix A-1 Table A-1.1	$7,091,200	$10,194,100	$17,285,300	$10,957,100	$6,328,200
Frontage Lane Improvements	Appendix A-1 Table A-1.1	$280,800	$2,767,100	$3,047,900	$1,995,300	$1,052,600
Water	Appendix A-3 Table A-3.1	$2,756,800	$10,131,500	$12,888,300	$6,465,800	$6,422,500
Sewer	Appendix A-4 Table A-4.1	$3,823,000	$1,937,000	$5,760,000	$3,237,000	$2,523,000
Drainage - Zone 11A	Appendix A-5 Table A-5.1	$1,780,900	$5,163,300	$6,944,200	$2,691,000	$4,253,200
Drainage - Supplemental	Appendix A-5 Table A-5.1	$979,900	$6,269,800	$7,249,700	$3,325,200	$3,924,500
Improvement Costs Proposed To Be Eligible for CFD Funding				**$53,175,400**		**$24,504,000**
Bond Construction Proceeds Available	Figures B-2 and B-3			**$15,996,000**		
Shortfall in Estimated Bond Proceeds To Be Developer Advanced For CFD Eligible Facilities [1] [2]				**($37,179,400)**	**$28,671,400**	**($8,508,000)**

"auth_facilities"

[1] At this stage of planning for the CFD, the eligible facilites list is larger than the amount of estimated bond proceeds. The list of eligible facilities will be updated based on the conditions at the time of CFD formation.

[2] Developer advances in excess of available CFD funds will be eligible for standard fee credits or reimbursements through the NVSFP.

In cases where developers advance fund the initial phases of Zone 40 infrastructure construction required to serve the NVSSP, they are subject to reimbursement within a five-year time period. Two hundred dollars (per residential unit) of the Zone 40 water fees is paid before improvement plan approval. The remainder of the fee is paid before building permit issuance.

This Financing Plan anticipates that developer advances or bond financing will be used to advance fund any infrastructure improvements needed in the initial phases of the NVSSP and before the collection of fees or other revenue sources. This Financing Plan assumes that fee credits and/or reimbursements for facilities otherwise funded by fee programs may be available if developers fund and construct fee-funded facilities. It is anticipated that the Zone 40 fee program will cover the Phase A-1 costs. However, there is a $6.4 million cumulative difference estimated in Phase A-2. This difference will have to be funded by Mello-Roos CFD bond funding or by developer funding.

SEWER

The County of Sacramento has established a countywide policy to provide public sewer service to all new residential developments of densities greater than one dwelling unit per acre. The NVSSP area is currently within the sphere of influence of the Sacramento CSD-1 and SRCSD. The NVSSP must be annexed to both CSD-1 and SRCSD. The NVSSP has been divided into two major sheds which are the BR Gerber Road Shed and the BR Florin Road Shed. The sewer sheds do not necessarily coincide with the drainage sheds.

The total estimated cost of NVSSP sewer infrastructure is approximately $11.8 million at buildout. This estimate includes trunk sewer lines, removal and replacement of existing pavement, and erosion control.

Installation of sewer improvements will be determined by the phasing of development projects to be served by sewer facilities. Individual projects will be required to complete sewer facility improvements as conditions of project approval. CSD-1 will ensure adequate sewer facility improvements are constructed in order to meet the demands of new development.

DRAINAGE

The Sacramento County Water Resources Department requires new development to follow specific guidelines to protect new and existing structures from the possibility of a 100-year flood event. The NVSSP must provide storm drainage facilities to modify peak flows such that they do not exceed pre-development flows.

The NVSSP lies in the drainage sheds of Elder and Gerber Creeks. Elder Creek enters the NVSSP from the north crossing under Florin Road approximately 1,000 feet east of the CCTR tracks. Gerber Creek enters the NVSSP from the south approximately 1,700 feet west of Bradshaw Road. The two creeks converge and leave at the western edge

of the NVSSP. The entire Elder and Gerber Creek watershed lies within the County Urban Services boundary.

SCWA Zone 11A will assume responsibility for providing storm drainage service to the NVSSP.

The NVSSP will ultimately be served by a drainage system that includes channel improvements, flood control detention ponds, storm water quality basins, new bridges, and trunk pipes and appurtenances. The total estimated cost of the NVSSP drainage improvements is $26.1 million at buildout, which includes the estimated cost of right-of-way acquisition for drainage improvements. Of this, $13.6 million is Zone 11A construction.

The phasing of drainage improvements is highly dependent upon the geographic location and timing of development. If development does not proceed in the sequence anticipated to make the following phasing estimates, a detailed hydraulic analysis will need to be prepared to demonstrate to the satisfaction of Sacramento County Department of Water Resources that the current 100-year elevations have been maintained.

PARKS AND RECREATION

The Southgate Recreation and Park District requires land dedication of 5 acres per 1,000 population. According to the NVSSP and as revised based on comments from the Parks District, a total of one regional park, six neighborhood parks, three mini-parks and a conceptual park designation in the Pasallis Lane area are planned. The parks-and-recreation CIP also includes drainage parkway facilities, linear parkway facilities, and a community center in the NVSSP.

The total cost of parks is estimated to be $12.2 million. This amount includes $7.8 million for park development, $2.8 million for a community center, $686,000 for drainage parkway facilities, and $138,000 for linear parkway improvements, open space acquisition, pedestrian signals and crosswalks, and Park Recreation and Open Space Master Plan preparation, and $670,000 for contingency. Basic improvements include finished grading, drainage, turf, irrigation, walkways, trees, signage, lighting, tot lots, and other items including engineering, inspection, contract administration, and water fees.

Park development phasing will be the responsibility of Southgate Recreation and Park District. The level of park improvements will correspond to the intensity of development. Historically, development has not fronted the cost of park improvements within the District. Agreements for developer-funded park improvements will be determined on a case-by-case basis with the district.

Historically properties along creeks and drainage channels have been obtained for open space uses through project dedication and condition of approval. The NVSFP proposes a supplemental fee for acquisition of the drainage corridor, including open space buffers

located immediately adjacent to the drainage channel. Acquisition of the open space buffer will be a part of the overall drainage corridor acquisition as detailed in the ROW acquisition program.

Ultimately, the open space areas will include the joint use trail system that will serve as a drainage maintenance path and a pedestrian bicycle path. The gravel maintenance road improvements that are in the Drainage CIP and are funded by the Water Agency channel improvements. The District will construct the joint use trail from park fee proceeds after sufficient development has occurred so that large stretches of the trail can be constructed at one time. Here again, the District may choose to enter into Developer agreements for developer-funded improvements to be determined on a case-by-case basis with the District. The extent of frontage improvements adjacent to parks, open space, and parkways required for each project will be determined as each project is processed for tentative map approval.

SCHOOLS

The Elk Grove Unified School District (EGUSD) has determined the need for two elementary school sites within the NVSSP. EGUSD has also determined the need for a new high school and/or middle school, however construction and timing is dependent on State funding. The EGUSD has determined the need for $69.4 million in school facilities. The elementary school portion is $34.1 million.

The EGUSD will manage the construction of school facilities. At this time, phasing information is not available. Phasing for the two elementary schools and the proposed high school or middle school will depend on State funding.

LIBRARY

Typical Library Authority standards require one 12,000 square foot library to serve 50,000 residents. Based on the estimated build-out population of the NVSSP and this standard, the NVSSP would not justify its own new library, but rather would likely be required to contribute toward library facilities created to serve a larger community area. According to a letter dated November 14, 2001 from Rich Hiseley, Fiscal Officer Sacramento Public Library, to Susan Goetz, County of Sacramento Public Infrastructure Finance, the NVSSP will be served by a 13,500 square foot library facility that will also serve the Vineyard Springs Plan Area.

The total estimated cost for the joint use library is $6.4 million and the NVSSP share allocation is $1.6 million. The total estimated cost includes construction, site work, books, furniture, and site acquisition.

The Library Authority will manage the phasing of library facilities. As the NVSSP will likely be contributing fee revenue for library facilities, the phasing of development within the NVSSP will not likely have an impact upon the phasing of library facility construction.

FIRE PROTECTION

The Sacramento Metropolitan Fire District will provide initial fire protection services from Station 55. As the build-out progresses, an additional station may be necessary. The District estimated that new fire protection facilities anticipated to serve the NVSSP would cost an estimated $5.5 million. This cost estimate was provided before the adoption of the new Sacramento Metro Fire Fee as discussed below and has been included in this financing plan for reference purposes only. It is anticipated that the 5.5-acre Public Services site in the NVSSP could accommodate a fire station.

Sacramento Metropolitan Fire District will be responsible for phasing. The District has determined that fire-station construction would begin when the area is occupied by 2,500 single family residences, valued at an average sale price of $200,000 per unit. Based on this requirement, construction for the station is estimated to start in Phase C.

TRANSIT

Regional Transit's 20-year *Transit Master Plan* and *Vision Document* specify that enhanced bus service is planned on Elk Grove Florin Road and Bradshaw Road, and bus trunk line service is planned on Bradshaw and Calvine Roads. In addition to bus service, RT plans to utilize the existing CCTR alignment for possible extension of light rail service or high occupancy vehicle (HOV) thoroughfare for buses. RT has indicated that these services are planned but not guaranteed. The provision of future transit services will be dependent upon community-wide land use patterns, densities/intensities, street configurations, and the availability of capital and operating funds.

The NVSSP conceptually designates a ten-acre Transit Center to ultimately provide parking for carpools and buses. The site may also be used as a possible light rail station.

RT will manage the installation of transit facilities. Phasing of the bus stop facilities will be dependent upon the construction of adjacent projects with frontage on these major arterial or thoroughfare roadways. RT will determine the construction timing of the transit center/park-and-ride facility based on RT's implementation of bus routes and possible extension of light rail to serve the area. RT does not see the need for the park-and-ride in the early stages of development. In addition, this facility could be constructed in stages consistent with fee collections. The park-and-ride could also be split into several smaller park-and-rides. If it is ultimately determined that all, or a portion, of the transit center/park-and-ride facility will not be required, then the fee proceeds may be used for other public transit related improvements that serve the NVSSP area including, but not limited to, light rail facilities.

COUNTY INFRASTRUCTURE FINANCING SECTION COMMENTS

The County Infrastructure Financing Section provided the following comments to the Notice of Preparation:

> "The General Plan Land Use Policy, LU-8 states: "Infrastructure financing plans which specify the extent, timing and estimated cost of all necessary infrastructure shall be approved by the Board of Supervisors together with the approval of zoning for any urban uses in urban growth areas. The resulting financing mechanisms shall be implemented prior to the approval of all entitlements in urban growth areas."
>
> In order to ensure that development within the specific plan area comply with this policy, and fully participate in the North Vineyard Station Specific Plan Public Facilities Financing Plan, the following mitigation measures are recommended:
>
> No rezone shall be approved prior to the approval of the North Vineyard Station Specific Plan Public Facilities Financing Plan and any rezone agreement and/or tentative map within the specific plan area should include the following condition:
>
>> "No final map shall be recorded until the financing mechanisms recommended in the North Vineyard Station Specific Plan Public Facilities Financing Plan (Financing Plan) have been implemented. The property owners shall comply with the implementation financing mechanisms recommended in the Financing Plan."
>
> In addition, to ensure the timely delivery of the required facilities, more specific zoning conditions that set the thresholds based upon individual facilities' requirements will be developed by the Departments of Transportation, Water Resources, and Water Quality in cooperation with the Infrastructure Finance Section prior to approval of any rezone."

IMPACTS AND ANALYSIS

Impact:

A Public Facilities Financing Plan is tangible to environmental impacts in that it provides the mechanism to ensure that needed improvements to mitigate a project's traffic, drainage, water supply, sewer and other infrastructure/service impacts can be implemented in a timely manner. Implementation of the following mitigation measures will reduce the Specific Plan's potential impacts associated with infrastructure financing to a less than significant level.

MITIGATION MEASURES:

No final map shall be recorded until the financing mechanisms recommended in the North Vineyard Station Specific Plan Public Facilities Financing Plan (Financing Plan) have been implemented. The property owners shall comply with the implementation financing mechanisms recommended in the Financing Plan.

6 PUBLIC SERVICES

INTRODUCTION

The following is a discussion of public facilities and service supply/demand issues related to the project. Some of the service providers have submitted comments pertaining to their ability to provide service to the project, including recommended conditions of approval that must be satisfied by the developer before service can be adequately provided. It should be noted that the Public Facilities Financing Plan, Drainage, Water Supply, and Sewer Service are discussed in separate sections of this EIR.

FIRE PROTECTION

The Sacramento Metropolitan Fire District provided the following comments and conditions of approval in response to the NOP and subdivision maps:

> *"The Sacramento Metropolitan Fire District (District) has recently completed a review of the proposed development within the North Vineyard Community Plan and surrounding areas and concludes that upon a build out of the area an additional fire station will be required to provide emergency response services within the community. The current plan depicts a Public Services parcel on the Delatorre property (APN 066-0070-046) that was proposed as a potential future fire station location. The District concludes upon a review of the proposed development contained within the Plan and the surrounding areas that the new fire station location should be located near Bradshaw Road, south of Florin Road, on the proposed road labeled "10 Street", preferably just east of Bradshaw Road. The exact location of the future fire station will need to be determined by the District following a review of the final land use diagram and roadway circulation. The final site selection will also be subject to real property negotiations to acquire property for a fire station. The District will require a minimum of 2.5 net acres of level property with a minimum of 330' of frontage and 330' of depth complete with utilities adequate to support the fire stations."*

The District has also provided the following recommended conditions for the proposed project:

1. *"In every new building where the total floor area exceeds 3,599 square feet an automatic fire sprinkler system shall be installed and equipped with an electronic monitoring system. The system shall be designed and installed as per the guidelines of National Fire Protection Association standard 13, latest edition, and the Fire Prevention Standards of this fire district number 442.501.*

2. *The minimum required fire flow for commercial developments is outlined in the Uniform Fire Code, Table A-III-A-1, but shall not be less than 1500 gallons per minute at 20 pounds per square inch residual for a duration of two (2) hours.*

3. *The required fire flow for the proposed project will vary depending on the type of construction, total square footage of the structure(s) and weather or not a fire sprinkler system is provided or required. This determination will be made when the appropriate information is provided to our office.*

4. *Every building shall be accessible to fire district fire apparatus by means of an all-weather driving surface designed to meet Traffic Index 5.5. The access shall be a minimum of 20 feet wide and have a minimum turning radius of 40 feet inside and 60 feet outside. The minimum vertical clearance 13 feet 6 inches. The access roadways are to be extended within 150 feet of all portions of the exterior walls of the first story. Dead-end fire Department access roads in excess of 150 feet shall be provided with an approved means for turning around the fire apparatus. This fire apparatus access lane and turnaround shall be identified in accordance with the California Vehicle Code. The access roadways are to be provided prior to any construction or storage of combustible materials on site.*

5. *All fire department connections for the automatic fire extinguishing system shall be located within forty feet of a fire hydrant and a minimum of forty feet from any openings within the protected building.*

6. *Commercial buildings exceeding 5,000 square feet must be tested to verify adequate transmission and reception of public safety radio signals. These signals operate on the 800 MHz frequency. If reception or transmission is not adequate, 800 MHz radio amplification systems shall be installed in the building.*

7. *If the crossing of a creek is going to be included, the installation of a private bridge shall be required and shall be designed for a minimum of HS20-44 loading as prescribed by the American Association of State Highways and Transportation Officials. The width shall be minimum of twenty (20) feet. The maximum allowable grade change of the approach to and the departure from the bridge will not exceed eight (8) percent for a distance of ten (10) feet.*

8. *Fire hydrants are to spaced every three hundred (300) feet and located as approved by the Fire District. Water main inter-ties may be required. The type and kind of fire hydrants shall be approved by the Fire District. The hydrant shall be within (8) feet of fire department access. (reference UFC 903.4 and SCC 1240).*

9. *All fire hydrants are to be installed and made serviceable prior to any construction or storage of combustible materials on the site. The fire hydrants*

are to be accessible via an all weather-driving surface approved by the Fire District, during all phases of construction.

10. *The approved civil plans shall be submitted in the approved electronic format (DXF or DWG Auto CAD version 2000 or later.*

11. *Any traffic signal modifications planned at Elk Grove Florin Rd, Gerber Rd, Bradshaw Rd, and Florin Rd and any new signals devices compatible with those employed by the fire department in changing those signals "green" for our direction of travel during an emergency response. Any new signal lights is required to install "Opticom.""*

The Fire District also provided the following comments for the proposed subdivisions:

1. *"Provide approved steamer type fire hydrants for residential areas located as follows:*

   A. *Maximum 500 feet between hydrants: Provide steamer type fire hydrants as follows:*

      1. *One fire hydrant shall be located between 150 and 250 feet from the end of the access roadway or cul-de-sac.*

      2. *A hydrant installed at the end of an access roadway, as a "blow off" for the water district does not meet the fire department requirements.*

      3. *Existing "wharf" fire hydrants are not acceptable to meet the requirements for new construction.*

      4. *Each steamer hydrant shall have a minimum flow of 1000 gpm at 20 pounds of residual pressure for residential areas where the total square feet of the building and garage is no more than 3600 square feet. UFC App. III A, Sect. 5.1*

   NOTE: Specifications for fire hydrants are available at the Fire Prevention office.

2. *Fire department notes and details shall be shown on the Civil Drawings. Copies of the standards are included with the Engineers copy of this letter. See c.c.'s UFC 903.2.*

3. *An approved water supply capable of supplying the required fire flow for fire protection shall be provided to all premises upon which facilities, buildings or portions of buildings are hereafter constructed or moved into or within the jurisdiction. When any portion of the facility or building protected is in excess of 150 feet from a water supply facility or building, on-site fire hydrants and mains capable of supplying the required fire flow shall be provided when required by the Chief. UFC 903.2*

For residential subdivisions, the required fire flow is 1000 gallons per minute for dwellings with attached garages having no more than 3,600 square feet. For dwellings with garages over 3,600 square feet, additional flow is required starting at 1750 gallons per minute.

EXCEPTION:

A. Group R, Difvision 3 Occupancies provided with an approved automatic fire sprinkler system, per NFPA 13D, in areas not provided with a public water supply.

B. Group U, Division 1 Occupancies.

4. *In Group R Occupancies, the roof covering shall not be less than Class "C" when there is no public water supply source with a distribution system conforming to County Standards. Sacramento County Code 16.04.060.*

5. *Provide access roadways with all-weather driving surface of not less than 20 feet of unobstructed width, with a minimum turning radius of 22 feet inside/40 feet outside dimension. It shall be capable of supporting the imposed loads of fire apparatus and having a minimum of 13 feet, 6 inches of vertical clearance. The access roadway shall be extended to within 150 feet of all portions of the exterior walls of the first story of any building. Dead-end fire department access roads in excess of 150 feet long shall be provided with approved provisions for the turning around of fire apparatus. Submit a detailed drawing to this office showing the "turnaround," when required, for review and approval prior to construction. UFC 902.*

6. *If there are no immediate plans for new construction or storage of combustible materials on this site, the above mentioned requirements may be held in abeyance until such time that development occurs. It is important to note that if the property is sold, the seller of the property is encumbered to disclose the above requirements to the buyer.*

7. *There shall be no parking on any street narrower than 28 feet. Parking shall be allowed only on one (1) side on streets from 28 feet to 36 feet wide. Streets that are wider than 36 feet, parking shall be allowed on both sides. Measurements shall be from edge of pavement to edge of pavement. UFC 901.4. On private streets, marking of the fire lanes per the County Fire Marshals' standard may be required.*

8. *Provide approved address numbers on the building in such a position as to be plainly visible and legible from the street or road fronting the property. Said numbers shall contrast with their background and on all new buildings, shall be illuminated at night. UFC 901.4.4.*

   NOTE: In order to meet this requirement the following methods are acceptable:

A. Name the access road and ensure that the new addresses be listed for the newly named "street, and meet the requirement above or …

B. Provide approved address numbers on the homes and for each of the homes on the access drive, provide approved address numbers posted next to the entrance to the access drive, facing the public street in an approved manner to meet the above requirement.

9. Should security gates be considered for this project, the developer shall contact this office for approval of specific clearances, locking mechanisms, or systems, which will accommodate emergency fire department use and then follow established permit procedures pursuant to Sacramento County Code, Chapter 16.70. Further information can be obtained by calling the Crime Prevention Unit of the Sacramento county sheriff's Office at (916) 440-5151. UFC 1208.

10. Remove from any roof, court, yard, vacant lot or open space all accumulations of wastepaper, hay, grass straw, weeds, litter or combustible or flammable waste material, waste petroleum products or rubbish of any kind. All weeds, grass, vines or other growth, when same endangers property or is liable to be fired shall be cut down and removed by the owner or occupant of the property. When total removal of growth from a piece of property if impractical due to size or to environmental factors, approved fuel breaks may be established between the land and the endangered property. The width of the fuel break shall be determined by height, type and amount of growth, wind conditions, geographical conditions and type of exposures threatened, UFC 1103.2.4 (Minimum width of clearance shall be 30 feet or to the property line, whichever is less. Specific conditions may require additional clearance width. UFC APPENDIX II-A, 16).

11. All fire protection equipment to be maintained in operative condition. UFC 1001.5.1" (April 21, 2004)

Compliance with District requirements should ensure that impacts associated with fire protection services are less than significant.

LAW ENFORCEMENT

The County Executive provided the following comments regarding funding for law enforcement services within the Plan Area:

"The North Vineyard Station Specific Plan adopted November 4, 1998, examined law enforcement services and included the following discussion:

'The Department's adopted service standard is 1.0 patrol officer per 1,000 residents. In 1994, there were insufficient patrol officers to meet the

> *Departments service standard on a Countywide basis, including District No. 7.'*

The service standard ratio discussed above is 1.00/1000. Currently, the Sacramento County Unincorporated Area is below this standard and has a ratio of .74/1000. During Budget Hearings in May 2004, it is anticipated that the County Board of Supervisors may reduce Sheriff's Patrol/Investigative Services as much as $25.0 million in annual spending. This is irrespective of any future cuts that may be necessary as a result of potential 2004-05 State Budget reductions.

This $25.0 million potential annual spending decrease may be a permanent reduction to the base level of Patrol/Investigative Services in the Unincorporated Area. According to County staff, there is no plausible scenario for alternative funding to backfill these reductions without additional revenue sources for the foreseeable future. A cut of this magnitude would reduce the funding base for Patrol/Investigative Services from its current base level of 375.0 deputies to 187.0 deputies (a reduction of 188.0 deputies) to serve the Unincorporated Area. This reduction of service will result in an even further worsening of the County's service level (Ratio of .36/1000).

Given the current fiscal situation, it will not be possible to provide development within the North Vineyard Station Specific Plan area with adequate law enforcement as measured by the service standard of 1.0 patrol officer per 1000 residents. Also, new development results in a negative impact on General Fund services including law enforcement services. New development will not generate sufficient revenues to offset the impact of increased demand for law enforcement services. Approval of new development without any additional revenue sources will only worsen the current situation and will further reduce the County's average service level.

Therefore, it is recommended that any rezone in the North Vineyard Station Specific Plan area be conditioned as follows:

> *"No final map shall be recorded until an analysis is prepared that addresses the negative impact on the County General Fund of providing law enforcement services to the North Vineyard Station Specific Plan area and a Mello-Roos Community Facilities District, or other financing mechanism, is in place to fund law enforcement services."*

It is anticipated that following this year's Budget Hearings, the Board of Supervisors will engage in discussions regarding possible tax/fee options for services that have been or will be cut. As part of this discussion, my office will seek direction from the Board for conceptual approve of a Mello-Roos Community Facilities District (or other mechanism) to fund police services in newly developing areas." (May 3, 2004)

Although law enforcement service is available to serve the Plan area, staffing ~~will~~ does not meet service standard levels. Although not considered a significant environmental effect, the project will place increased demands on law enforcement services that are currently limited. To assist in reducing crime levels and the strain on law enforcement resources, the Plan area should be designed with safety as a prime consideration. Coordination with the Sheriff's Department, planners and developers for future development with the Plan area will lessen impacts to police protection services. ~~to less-than-significant.~~

SCHOOLS

The project sites for the Vineyard Creek and Vineyard Point projects are located within the Elk Grove Unified School District, which has been heavily impacted by the high rate of growth occurring within its boundaries during recent years. The project proponent will be required to provide developer fees as mandated by current state law. In March 2003, the Board of Education adopted a new residential development fee in accordance with Senate Bill 50. The new fee ($3.43/square foot) became effective on March 18, 2003, and is subject to change annually. This fee becomes due at the building permit stage of development.

The Elk Grove Unified School District reviewed the subject application and provided comments and estimates of student generation and financial impacts. The comments indicate that the Vineyard Creek project would impact enrollment on the Elk Grove Unified School District by adding 236 students in K-6th; 64 students in 7th and 8th; and 111 students in 9th-12th. The comments also indicate that the Vineyard Point project would impact enrollment on the Elk Grove Unified School District by 374 students in K-6th; 103 students in 7th and 8th; and 173 students in 9th-12th.

The comments also refer to General Plan policies that describe alternatives for addressing overcrowded schools, as follows:

> *County Planning policies PF-39, 40, 43, 45 and 46 are stated in the Public Facilities Element of the Sacramento County General Plan adopted by the Board of Supervisors on December 15, 1993. These policies describe several alternatives for addressing overcrowded schools. We request the Planning Commission and/or the Board of Supervisors comply with these provisions on this project.* (February 19, 2004 comment letter to Planning Department)

Although the project would result in increases to student population, established case law indicates that school overcrowding, standing alone, is not a change in the physical conditions, and cannot be treated as an impact on the environment[1].

[1] Goleta Union School District v. The Regents of the University of California (36 Cal-App. 4th 1121, 1995)

PARKS AND RECREATION

The Southgate Park and Recreation District (SPRD) is the local governing body for management of public park land in the Plan Area. SPRD provided the following comments in response to the Notice of Preparation:

- ***"Reasonable Foreseeable Construction of Recreational Facilities.***
  A project is defined as the whole of an action that results in a reasonably foreseeable physical change in the environment. Pursuant to Appendix G of the California Environmental Quality Act (CEQA) Guidelines, projects that include recreational facilities or require the construction or expansion of recreational facilities, which may have an adverse physical effect on the environment, are considered to have a significant impact on recreation and require a discussion of the impacts and an evaluation of potential mitigation measures. The Supplemental EIR should identify reasonably foreseeable development of dedicated park space and recreational trails and analyze the potential of such development to result in significant environmental impacts. Potential impacts areas include biological resources, hydrology and water quality, noise and transportation/traffic. The trail placement and alignments were further defined and provided to the County of Sacramento Planning Department with their Vineyard Creek Map Comments contained in Resolution 03-120. Descriptions of the other recreation, park and trail facilities/improvements have also previously been provided to the County and are attached for your reference.

- ***Land Use Policy Conflicts***
  The District's required standard for land dedication is 5 acres per 1,000 individuals. Further, the District is responsible for maintaining landscape corridors throughout the project area. Pursuant to Appendix G of the State CEQA Guidelines, projects that conflict with an applicable land use policy are considered to have a significant impact on land use and require the evaluation of mitigation measures. The County of Sacramento should evaluate and present this impact, require dedication of sufficient parkland, identify the easements for landscape corridors, and include a requirement to restore the landscape corridors to preproject conditions at the completion of construction. All construction within 200 feet of an open space preserve or a recreational area should be coordinated with the preserve or recreational area manager.

- ***Recreation Facility User Hazards***
  The District Master Plan Map dated July 1, 2003, includes park areas and trail alignments in the proposed project area. In accordance with Appendix G of the State CEQA Guidelines, the proposed project may substantially increase hazards to pedestrians and cyclists using these recreational facilities, thus requiring the consideration of mitigation measures. Of particular concern are the bicycle/pedestrian trail crossings at roadways, especially at Bradshaw Road. The District recommends that the County of Sacramento analyze these impacts

and include mitigation measures to reduce the potential safety hazard to below the threshold for significance.

- ***Water Treatment Plant Impacts***
  The proposed project has the potential to result in significant impacts related to aesthetics, noise, and recreation due to the water treatment plant. The District recommends that the County of Sacramento analyze these impacts and include mitigation measures to reduce the potential safety hazard to below the threshold for significance. Potential mitigation measures include directing all outdoor lighting away from the perimeter of the property with cutoff shields and prismatic glass coverings to prevent illumination from spilling onto adjacent residential areas, landscaping on all sides of the water treatment plant, pedestrian/bicycle access across the water treatment plant area from the park to the detention basin, "decorating" the detention basin with native plantings and improving the basin with recreational amenities such as a walking trail and benches. The financing plan needs to be updated to provide for such improvements. The District would be willing to accept responsibility for maintenance of the trail and landscaped/improved areas with the appropriate funding mechanism in place and with final design approval." (April 20, 2004)

  (NOTE: The comment writer references Appendix "G" of the CEQA Guidelines. Appendix G is now a suggested checklist and no longer defines mandatory findings of significance as implied by the comments.)

Improvements, such as trail alignment and landscaping, associated with the Drainage Parkway are considered to be an element of the overall Drainage Master Plan. Impacts associated with these recreational improvements are considered in the context of evaluating the DMP.

Future development may have the potential to impact existing and planned park site facilities in the area, as well as creating the need for additional facilities, due to increased resident population. However, until specific development proposals are made, it is difficult to accurately assess impacts to specific sites and/or facilities. However, no environmentally significant impacts to recreational opportunities for existing and future residents are expected.

The Draft NVSSP Financing Plan includes a line item to construct a signalized crossing where the bike/pedestrian trail crosses Bradshaw Road. The need for crossings at Waterman Road, Gerber Road, and at interior collectors will be evaluated at the time detailed specifications for those roadway segments are submitted. Appropriate parkland acreage will be dedicated within the Plan area and no significant impacts with regard to recreational facilities are anticipated.

PUBLIC TRANSIT

Regional Transit provided the following comments in response to the NOP and subdivision maps:

> *"Currently RT does not provide transit in the vicinity of the project. RT's 20-year Vision identifies Bradshaw Road as a future transit corridor. It also identifies the California Traction Railroad alignment as a light rail corridor. The property north of Gerber Road adjacent to the railroad alignment has the potential of being a good location for a station and transit-oriented development.*
>
> *An effective transit system is dependent upon land use patterns within ½ mile of a station. Transit supportive development densities need to be in the medium density range, street configurations and lot patterns need to support the major investment. It is important for this development proposal to either be designed to support transit, or not preclude future opportunities in its design. Property near the potential station site may be identified as open space for a time, physical barriers such as walls, cul-de-sacs etc. should not impede access to the potential station area."* (April 7, 2004)

VINEYARD CREEK COMMENTS

> *"RT does not currently provide service to this area, however the RT 20-Year Vision (enclosed) has proposed the provision of the following transit services:*
>
> - *Enhanced bus service on Elk Grove-Florin Road.*
> - *Bus trunk service on Calvine and Bradshaw Roads.*
> - *Extending light rail along the Central California Traction Company railroad alignment.*
>
> *These transit services are not guaranteed, they represent services RT would like to be able to provide. The provision of these future transit services will be dependent upon community-wide land use patterns, densities/intensities, street configurations, and the availability of transit capital and operating funds. This project as well as other development projects within the North Vineyard Station Specific Plan reviewed by RT staff indicate that the area will be developed primarily with low-density single family residences, which do not provide sufficient densities to support the provision of transit services."*

VINEYARD POINT COMMENTS

> *"Currently RT does not provide transit in the vicinity of this project. However, RT's 20-year Vision identifies Bradshaw Road as a future transit corridor. The provision of future transit services will be dependent upon community-wide land use patterns, densities/intensities, street configurations, and the availability of*

transit capital and operating funds. Thus, it is important to consider transit during the initial design of the project. This helps to maximize the availability of resources. It is premature to designate bus stop locations at this time.

Prior to the preliminary design stages, RT urges the project proponents to consider certain forms of subdivision design. Many common forms of subdivision design impede access to transit and the provision of transit service such as walls or other physical barriers, cul-de-sacs, circuitous street patterns, and speed bumps. For example, if this is a gated development, the provision of pedestrian cut throughs and paths to both Gerber and Bradshaw Roads would be essential to the vitality of any future transit service along this potential transit corridor. RT has found that pedestrians will walk ¼ mile to a bus stop, but that the number significantly decreases as the walking distance increases."

PUBLIC FACILITIES FINANCING PLAN COMMENTS

"RT's 20-year Transit Master Plan and 20-year Vision document identify the Central California Traction Company (CCTC) railroad right-of-way as a potential future transit corridor. The development of transit service in the CCTC corridor will be contingent upon many factors, including, but not limited to:

1. *Land use development within the corridor at residential densities and commercial intensities to sustain transit service,*

2. *Site designs and street configurations that enhance access to transit facilities, and,*

3. *Adequate capital and operating resources to construct and operate the transit mode and level of service desired.*

Typically, the presence of isolated pockets of residential developments will not generate sufficient ridership to warrant higher levels of bus service. The proposed development should be phased to minimize "leapfrog" patterns which results in large expanses of vacant land between developed areas. Extending transit services throughout "leapfrog" communities lowers transit productivity and increases costs of the transit operator. The County's General Plan Policy (LU-7) states that "the County shall not approve land use projects which are for non-contiguous development, that is, leapfrog."

Given the long-range time frame of RT's Plans, a bus service using existing streets should also be considered. However, the lack of sufficient population or employment density to justify bus service in the Vineyard community is likely to result in the absence of any transit service in the near future, unless a specific funding source is available to RT for the capital and operating costs of service in the CCTC corridor or to the North Vineyard Station planning area.

Section IV (page 27) – Land Use

A total of 5,517 housing units are planned for the site, including 4,850 single-family units, 187 medium density units and 679 multi-family units. In addition, the plan includes 37 acres of commercial and business professional development as well as a 6-acre transit center.

Currently, RT does not provide any transit service to the Plan Area. As mentioned above, RT's 20-year vision document identifies Bus Trunk Line service corridors along Bradshaw and Florin Roads and Bus Rapid Transit (BRT) corridor along Elk Grove-Florin Road, west of the site. In addition, a future light rail corridor is proposed to utilize the existing Central California Traction Company (CCTC) railroad alignment connecting this area of the Sacramento County with the Downtown Sacramento/Amtrak/Folsom light rail corridor. The CCTR alignment travels through the Plan Area to the west.

Considering RT's future plan for this area, staff recommends that:

a. Transit supportive or transit-oriented uses should be located along the identified major arterials such as Bradshaw Road and Florin Road. In addition, uses that enhance transit usage should be located around the proposed transit center. The design of the Land Use Plan should encourage public transit. Land uses are generally more intense adjacent to arterial streets in order to encourage ridership.

b. Multi-family developments are more transit supportive than single-family units. A total of 4,850 single-family units are proposed compared to 679 multi-family units. If North Vineyard Station is substantially developed in a low-density residential manner without transit supportive design features and less number of Multi-family units, it is highly unlikely that it will receive high levels of transit service.

Section XIV – Public Transit (page 78)

The document identifies a 6-acre transit center on page 27 ("Buidout" Section) while on page 78 it identifies the transit center as a 10-acre site ("Proposed Facilities" Section). RT's previous response to the proposal (January 28, 1997) refers to a 10-acre transit center to be utilized for park and ride purposes. Please clarify the size of the proposed transit center. While RT acknowledges the identification of this transit center/plaza facility, the location of the facility is crucial to its successful utilization. Preferably, the transit center should be located at an intersection with major roadways (such as Florin or Bradshaw Roads) surrounded by pedestrian-oriented uses that would also be transit-supportive.

a. Public Transit Standards

Given the uncertainty in determining the location of future bus stops and shelters in the along the arterials, RT recommends that consideration be given to including provisions for the placement of bus shelters within the Public Utility Easements (PUE's) that are adjacent to public street right of

ways. If bus shelters cannot be accommodated within PUE's, RT requests that bus shelter easements, approximately 10;W x 20'L be made available to RT at such time when bus service may commence.

b. Light Rail

The South Line Phase 1 project is currently under construction with revenue service to commence in September of 2003. RT is in the process of preparing the final environmental document to construct the second phase of the south area LRT line. In addition, RT's 10 year system expansion plan includes extension of the south line to Grant Line Road.

c. Transit Facilities

Figure 33 on page 79 indicate that the estimated fee for transit facility improvements is $2.1 million. The fee is proposed to be utilized for land acquisition, engineering/contingency and construction associated with the proposed park and ride facility. RT recommends that the plan area fee program revenues collected from the Specific Plan area include the purchase of buses and the operation of transit services in the area."

Implementation of the proposed project will not disrupt or interfere with expected transit operations in the area and no cumulative impacts were identified. The plan provides for the implementation of future facilities by RT such as bus operations, light rail, bus turnouts, and transit centers. Impacts due to the proposed project are considered less than significant.

REQUIREMENTS/RECOMMENDATIONS OF VARIOUS AGENCIES

A. Sacramento Municipal Utility District

1. Vineyard Creek – Large Lot Tentative Map

   a. Dedicate a 12.5-foot public utility easement for overhead and underground facilities and appurtenances adjacent to Florin Road.

   b. Dedicate a 12.5-foot public utility easement for underground facilities and appurtenances adjacent to all public street rights of ways.

   c. Dedicate any Irrevocable Offer of Dedication and 12.5-feet adjacent hereto as a public utility easement for underground facilities and appurtenances.

   d. The owner/developer of the above noted property MUST disclose to future/potential buyer the following existing and potential 69 & 230 kV facilities.

There is an existing overhead electrical 69 & 230 kV line located adjacent to the East property line.

2. Vineyard Creek – Small Lot Vesting Tentative Subdivision Map

   a. Dedicate a 12.5-foot public utility easement for underground facilities and appurtenances adjacent to all public street rights of ways.

   b. Dedicate the Landscape Corridors adjacent to Florin Road as a public utility easement for overhead and underground facilities and appurtenance.

   c. Dedicate the Landscape Corridors as a public utility easement for underground facilities and appurtenances.

   d. The owner/developer of the above noted property MUST disclose to future/potential buyer the following existing and potential 69 & 230 kV facilities.

      There is an existing overhead electrical 69 & 230 kV line located adjacent to the East property line.

3. Vineyard Point – Large Lot Tentative Parcel Map

   a. Dedicate a 12.5-foot public utility easement for underground facilities and appurtenances adjacent to all public ways.

   b. Dedicate a 12.5-foot public utility easement for underground and overhead appurtenances adjacent to Bradshaw Road.

   c. Dedicate the Irrevocable Offer of Dedication and 12.5 feet adjacent thereto as a public utility easement for underground facilities and appurtenances.

   d. Designate a parcel of land for an electric substation to be acquired by the Sacramento Municipal Utility District having an approximate size of 150 feet by 150 feet of net useable area. The tentative location will be within the Vineyard Point development. The exact size and location of the substation site shall be by mutual agreement of SMUD and the property owners prior to the recordation of the final map.

   e. Any revisions or deletions relative to the above conditions must be submitted in writing by the Real Estate section of SMUD. The County of Sacramento should accept no verbal or other written agreements.

   f. The owner/developer must disclose to future/potential owners the existing or proposed 69kV electrical facilities.

4. Vineyard Point – Small Lot Vesting Tentative Subdivision Map

a. Dedicate a 12.5-foot public utility easement for underground facilities and appurtenances adjacent to all public ways.

b. Dedicate a 12.5-foot public utility easement for underground and overhead appurtenances adjacent to Bradshaw Road.

c. Designate a parcel of land for an electric substation to be acquired by the Sacramento Municipal Utility District having an approximate size of 150 feet by 150 feet of net useable area. The tentative location will be within the Vineyard Point development. The exact size and location of the substation site shall be by mutual agreement of SMUD and the property owners prior to the recordation of the final map.

d. Any revisions or deletions relative to the above conditions must be submitted in writing by the Real Estate section of SMUD. The County of Sacramento should accept no verbal or other written agreements.

e. The owner/developer must disclose to future/potential owners the existing or proposed 69kV electrical facilities.

B. Land Division & Site Improvement Review

1. Vineyard Creek – Large Lot Tentative Map

   a. Offsite portion of 50-foot IOD adjacent to Parcels 6 and 7 must be secured prior to recordation.

   b. Dedicate a standard 12.5-foot Public Utility Easement for underground facilities and appurtenances adjacent to all public ways, private drives and/or Irrevocable Offer of Dedication (IOD).

   c. Prior to recordation of a final map or certificate of compliance, dedicate land or pay in lieu fees, or both, for park purposes, as required by and in accordance with the procedures and standards set forth in Chapter 22.40, Title 22 of the Sacramento County Code.

2. Vineyard Creek – Small Lot Vesting Tentative Subdivision Map

   a. Secure offsite right of way for “L” Way and “7” Court; “G” circle and “B” Way, and install public street improvements pursuant to the Sacramento County Improvement Standards.

   b. Dedicate a standard 12.5-foot Public Utility Easement for underground facilities and appurtenances adjacent to all public ways, private drives and/or Irrevocable Offer of Dedication (IOD).

c. Comply with all requirements of Chapter 1, Article 5, Title III, of the Sacramento County Zoning Code, relating to walls and landscape corridors adjacent to streets, including required maintenance provisions.

d. Prior to recordation of a final map or certificate of compliance, dedicate land or pay in lieu fees, or both, for park purposes, as required by and in accordance with the procedures and standards set forth in Chapter 22.40, Title 22 of the Sacramento County Code.

3. Vineyard Creek – Rezone

a. Grant the County right-of-way for Florin Road, based on a 108-foot standard, and Waterman Road, based on an 84-foot standard, and install public street improvements pursuant to the Sacramento County Improvement Standards.

C. Southgate Recreation and Park District

1. Comments and recommendations for Vineyard Creek Subdivision

a. Landscape Corridors shall be a minimum of 25 feet wide with a sound wall, along Florin Road and Waterman Road, and will be accepted by the District (proposed Lots F, G, H, I, J, & K). The Developer shall dedicate the landscape corridors to Southgate as a gift deed and be fully developed by the Developer with plans and specifications to be approved by the District. Corridors shall have a square curb and meandering six foot wide pathway separated from traffic. The District shall accept the completed landscape corridors after they have passed inspections and shall maintain the landscape corridors through assessment district proceeds. It is understood that the District does not maintain subdivision signage. The District does not require subdivision entrance lighting, however, more residents are requesting landscape lighting to illuminate subdivision entryways and street names. In lieu of lighting the District does request the installation of wiring and connection to the electric box, on each side of Lots F and H at A Drive and Waterman Road, on each side of Lots H and J of F Way at Waterman Road, and on the east side of Lot K on Florin Road at L Way (for future installation of lighting, should it become necessary).

b. The Developer shall install a 6’ high masonry wall for lots that back up or side-on to the landscape corridors along Florin Road, Waterman Road and A Drive. The design for all masonry walls shall be treated with graffiti-resistant coating and the design approved by the District. A Rain Bird maxicom controller, with telephone line and electricity shall be provided to tie into the District’s computerized irrigation system as well as a certified reduced pressure backflow device.

c. The Developer shall consent to the inclusion of this subdivision within the North Vineyard Station Financing District, which will be a Landscaping and

Lighting Assessment District or a Mello Roos Community Facilities District, and the Southgate District-wide Landscaping and Lighting Assessment District. The Developer shall be responsible for notification to all subsequent purchasers of parcels of land of the inclusion within said financing districts. These financing districts will be established by the District for additional improvements and ongoing maintenance and operations.

d. As determined by the County Board of Supervisors, this subdivision will be included in the Southgate Recreation and Park District component of the North Vineyard Station Public Facilities Financing Plan. The District reserves the right to revise park land dedication requirements and financing mechanisms to adapt to changes resulting from modifications to the policy or the creation of a new Plan by the County of Sacramento.

e. The District will accept Park Lot C as identified on the revised Tentative Subdivision Map dated February 2004, with lot C being approximately 2.9± gross acres in size. The additional unmet Quimby requirements for the subdivision shall include the 11.4± gross acres adjacent to Park Lot C. The District will not give Quimby credit for property encumbered or otherwise with restrictions. Additional park site property shall be immediately adjacent to Park Lot C, as shown on the map, and conveyed to District at the ~~Same~~same time the 2.9 acres are conveyed. Since there will be an estimated over-dedication of 5.1 acres of parkland for this project, the District agrees to enter into a Developer Requirement Agreement, with the Developer, which shall address the Quimby credits for this project.

f. The District requests review of all Army Corp of Engineer, Fish and Game, Fish and Wildlife or any other State or Federal Agency comments and requirements as well as the final permit and conditions as they pertain to the open space property, and will then determine acceptance of the conditions and respective property.

g. Open space areas shall front on a public road per County of Sacramento General Plan requirements. On areas of Open Space that front on a public street, a “setback” area of approximately 10 feet (from back of sidewalk into Open Space area) shall be minimally landscaped by Developer (to District’s specifications) to provide for an aesthetic transition into the Open Space area. Similar to the landscape corridors; Developer shall bear all costs associated with the installation of related infrastructure, post and cable fencing and minimal landscaping (including drip irrigation). Any lots, including the multifamily Lot 378, backing or siding on to the open space area shall have a 6’ high open, tubular steel fence constructed by Developer, and approved by the District. Fencing belongs to and is the responsibility of the residential property owner. Open space will have post and cable fencing along the back edge of the open space landscaped area, a vertical curb and connected 6-foot wide concrete sidewalk along all Streets fronting open space area. Irrigation system to be connected to the District’s maxicom computerized

irrigation system inclusive of: controller, phone line and electricity. The District requests an ADA accessible drinking fountain with backflow prevention device along with an appropriate drainage inlet, be provided by the Developer on Lot B, adjacent to parcel 170. Open Space Lots A, B & E (approximately 9.5 acres) and as shown on the Tentative Map dated February 2004, shall be dedicated to the District as a gift with a clear title report, and be fully developed and improved by the developer with plans and specifications to be approved by the District. No Quimby credit or Developer Fee credit will be given for this open space or the improvements. Developer shall pay for these improvements. Location of improvements to be determined by District and Developer. The Developer shall install street lighting along streets fronting on all open space areas, on the open space side of the street. The District shall accept the completed open space area after they have passed inspections, accepted conditions required by the Army Corp of Engineers, and received a clear title report. The Developer shall agree to the inclusion in an additional assessment zone, to go towards the maintenance of the trail and open space area. The District shall maintain the trails and open space areas through assessment district zone proceeds. The District shall not own or otherwise take responsibility for creek channel maintenance or drainage functions.

h. The developer shall assure that the park land to be dedicated is appropriately graded to the District's specifications and pursuant to County standard; shall provide adjoining streets, sidewalks with vertical curbs; electrical, phone, storm drainage, sewer, and water stubs; connect to and provide water meter, reduced pressure backflow preventer; and pay all permit fees including building, sewer, water meter, water development and drainage fees for the park sites and landscape corridors in order to allow for improvements to the park lots, open space lots (limited) and landscape corridors within this subdivision. Rain Bird maxicom controllers with telephone line and electricity shall be connected to the District's computerized irrigation system.

i. It is understood that it is the responsibility of the property owner to care for and keep maintained the ten foot pedestrian easements and is not a part of the Landscape Corridors to be conveyed to the District, as shown on the Tentative subdivision map dated February 2004.

j. The District would appreciate the opportunity to further comment on this map after the Public Facilities Financing Plan has been approved in order to make any necessary adjustments.

k. In the event that the Central California Traction Railroad Corridor is abandoned and the County of Sacramento determines that these tracks shall become part of a Rails-to-Trails system, the District desires that the developer provide a landscaped access to this trail system from the proposed subdivision. This access should be a minimum of 30 feet in width, and be dedicated to the District, with no land dedication credits given to the

developer for this acreage. The location can be determined at a future point in time; however, access points to consider could include but are not limited to access from the proposed Elder Creek Trail as it intersects the CCTRR. In lieu of the CCTRR becoming a trail, the District requests a low flow crossing across Lot B, adjacent to parcel 170 and on the west side of the CCTRR and a 50' wide easement along the southwest side of the CCTRR, to facilitate the bicycle/pedestrian trail planned for the North Vineyard Station community. This crossing is key to providing continuity to this trail system.

l. The District desires to work with the Developer and County Water Resources in identifying potential recreational uses of the 7.4-acre detention basin site. Due to the basin's relationship to the Park Lot C, active and overlapping joint use is realistic. In order to accommodate recreational uses advance planning needs to occur to address design issues including and not limited to access points and parking. A public access point and parking area needs to be identified since the access point identified next to parcel 169 is for maintenance purposes only.

m. The developer shall construct a bicycle/pedestrian trail and landscaping along Gerber and Elder Creeks as required under the North Vineyard Station PFFP and as per District requirements for standards and location. The District has identified on the Drainage Corridor/Open space map the specific location of the trail, provided to MacKay and Somps in February 2004. For purposes of the Vineyard Creek subdivision, the trail shall be on the eastern/southern side of Elder Creek along the sewer interceptor path, continuing northerly to Florin Road. As mentioned above, in lieu of the CCTRR becoming a trail, the District requests a low flow crossing across Lot B, adjacent to parcel 170 and on the west side of the CCTRR and the construction of a northwesterly trail within a 50' wide easement to follow the western side of the CCTRR to Florin Road, to facilitate the bicycle/pedestrian trail planned for the North Vineyard Station community. This crossing is key to providing continuity to this trail system. There will be 2 trails converging on to Florin Road in order to negotiate around the CCTRR, for this subdivision. Connections from the subdivision to the trail shall be provided at the locations indicated on the attached map or as determined by the District and Developer at a future date, due to changed conditions. Points of trail connections from the sidewalk to the trail shall be near the northwest corner of Lot D, at the end of H Circle by Parcel 170, between Parcels 63 and 41 on K Circle, between Parcels 20 and 21 on 11 Court, and between Parcels 5 and 6 on 12 Court. Additional trail connections shall be made from the Detention Basin and Park Lot. The trails are part of the overall Gerber Creek and Elder Creek Open Space area as identified in the Sacramento County land use plan. Improvements along bike trail and open space corridors shall compliment the design planned in the North Vineyard Station Plan. Trail and Open space area shall be gift deeded to the Southgate Recreation and Park District with no Quimby credits given for this area. Developer shall enter into a Developer Requirement Agreement for these improvements and may be credited developer fees for all agreed to

bike trail improvements. Due to the proximity of the creek to the subdivision the District requests a southern public access point and connection from the subdivision to the Gerber Creek trails. Location of creek access to be mutually determined by the Developer and the District. Trail alignment shall meander throughout the corridor. Trail design shall be provided to Developer by District. Typically, the trail shall not be closer than 20' from the top of bank along the creek and outside of any environmental constraints. Trail setback from the rear or side of residential property lines and streets shall be as far as possible, with a minimum distance of 50'. It is important that adequate space be provided in order to provide separation for bicycle, pedestrian and equestrian uses.

n. The District has previously had discussions with the County Sanitation District regarding the joint use, improvement and maintenance of land reserved for sewer interceptor and planned for trails. The Southgate District goes on record as supporting this joint use concept and wherever possible and feasible project planning should include and incorporate complimentary design and use of said land. A similar joint use agreement for this area is highly recommended.

2. Comments and recommendations for Vineyard Point Subdivision

a. Landscape Corridors, a minimum of 25 feet wide with soundwall, along Gerber and Bradshaw Road will be accepted by the District (proposed Lots J, K, L & M). In this revised map Landscape corridor lot K was eliminated when Lot G was added to the map. There should be a continuous corridor and sidewalk on Gerber Road. Lot K needs to be re-inserted on the map. The Developer shall dedicate the landscape corridors to Southgate as a gift deed and be fully developed by the Developer with plans and specifications to be approved by the District. Corridors shall have a square curb and meandering pathway separated from traffic. The District shall accept the completed landscape corridors after they have passed inspections and shall maintain the landscape corridors through assessment district proceeds. It is understood that the District does not maintain subdivision signage. The District does not require subdivision entrance lighting, however, as a note we have been receiving more comments from residents requesting landscape lighting to illuminate subdivision entryways and street names. This amenity is only a suggestion and not a requirement. In lieu of lighting the District does request the installation of wiring and connection to the electric box, and the running of the wire through conduit under the following streets, on each side of 'A' Drive at Bradshaw Road and on each side of 5 Street at Gerber Road (for future installation of lighting, should it become necessary).

b. The Developer shall install a 6' high masonry wall for lots that back up or side-on to the landscape corridor along Gerber Road and Bradshaw Road. The design for all masonry walls shall be treated with graffiti-resistant coating and the design approved by the District. A Rain Bird maxicom controller, with

telephone line and electricity shall be provided to tie into the District's computerized irrigation system as well as a certified reduced pressure backflow device.

c. The Developer shall consent to the inclusion of this subdivision within the North Vineyard Station Financing District, which will be a Landscaping and Lighting Assessment District or a Mello Roos Community Facilities District, and the Southgate District-wide Landscaping and Lighting Assessment District including the annexation to a new Zone in a landscaping and lighting assessment district, to ensure that adequate funding is available to pay for all costs associated with the repair, maintenance and monitoring in perpetuity for the capital development and operation and maintenance of the park facilities, open space property, trails and related improvements. The Developer shall be responsible for notification to all subsequent purchasers of parcels of land of the inclusion within said financing districts. These financing districts will be established by the District for additional improvements and ongoing maintenance and operations.

d. As determined by the County Board of Supervisors, this subdivision will be included in the Southgate Recreation and Park District component of the North Vineyard Station Public Facilities Financing Plan. The District reserves the right to revise park land dedication requirements and financing mechanisms to adapt to changes resulting from modifications to the policy or the creation of a new Plan by the County of Sacramento.

e. The District will accept Park Lot A as identified on the revised Tentative Subdivision Map dated December 15, 2003, with lot A being approximately 10.0 gross acres in size. The 1.8 gross acres previously shown as park lot D shall be removed and the acreage added to park lot A. An amendment to the North Vineyard Station Specific Plan will still allow for a future 5.0 acre park site immediately east of the former park lot D. Any additional unmet Quimby requirements for the subdivision shall be paid to the District in in lieu fees.

f. The Developer shall install a 6' high masonry wall for lots that back up or side-on to the future park site on 11 Street (former Park Lot D). The design for all masonry walls shall be treated with graffiti-resistant coating and the design approved by the District.

g. The District will accept the removal of the formerly designated Parkway Lot E (as previously shown on the Tentative Subdivision Map dated October 10, 2002) from this map.

h. The developer shall assure that the land to be dedicated is appropriately graded to the District's specifications and pursuant to County standard; shall provide adjoining streets, sidewalks with vertical curbs; electrical, phone, storm drainage, sewer, and water stubs; connect to and provide water meter, reduced pressure backflow preventer; street lights fronting on park and open

space property; and pay all permit fees including building, sewer, water meter, water development and drainage fees for the park site(s) and landscape corridors in order to allow for improvements to the park lot(s) and landscape corridors within the subdivision. Rain Bird maxicom controllers, with telephone line and electricity shall be connected to the District's computerized irrigation system. Additionally, traffic calming measures shall be initiated on 11 Street, at the points where it intersects 4 Street, in order to provide for a safe pedestrian crossing to and from the future park.

i. It is understood that it is the responsibility of the property owner to care for and keep maintained the ten food landscaped pedestrian easements.

j. Lot N Landscape Corridor, as shown on the Tentative subdivision map dated December 15, 2003 shall also extend around the northern side of Lot C to shield the tank site lot and to provide an aesthetic view from the park site. It is understood that it is the responsibility of the property owner to care for and keep maintained this corridor. It is also understood that there will be continuous sidewalk along this corridor.

k. The District would appreciate the opportunity to further comment on this map after the Public Facilities Financing Plan has been approved in order to make any necessary adjustments.

l. In the event that the Central California Traction Railroad Corridor is abandoned and the County of Sacramento Determines that these tracks shall become part of a Rails-to-Trails system, the District desires that the developer provide a landscaped access to this trail system from the proposed subdivision. This access should be a minimum of 30 feet in width, and be dedicated to the District, with no land dedication credits given to the developer for this acreage. The location can be determined at a future point in time. Design around the corridor and access should provide for the visibility to address security concerns, as requested by the Sheriff's Department and approved by the District.

m. The District desires to work with the Developer and County Water Resources in identifying potential recreational uses of the 9.7 acre detention basin site. In order to accommodate recreational uses an access point and parking area would need to be provided from the subdivision. This access point and parking area can be determined at a future point in time.

n. The District has master planned a trail along Gerber Creek, which is included as part of the North Vineyard Station Specific Plan. Due to the proximity of the creek to the subdivision the District requests a public access point from the subdivision to the Gerber Creek corridor and a connection to the future trail. Location of creek access to be mutually determined by the Developer and the District.

D. Sacramento County Executive

1. The County Executive recommends that any rezone in the NVSSP area be conditioned as follows:

   "No final map shall be recorded until an analysis is prepared that addresses the negative impact on the County General Fund of providing law enforcement services to the North Vineyard Station Specific Plan area and a Mello-Roos Community Facilities District, or other financing mechanism, is in place to fund law enforcement services."

MITIGATION MEASURES:

None required.

7 TRAFFIC AND CIRCULATION

BACKGROUND

The prior EIR for the NVSSP analyzed the impact of development of the NVSSP on traffic volumes and levels of service within and around the Specific Plan Area. Recommendations for improvements to intersections and roadway segments were made in order to mitigate for potentially significant and significant impacts. This revised traffic study, prepared by Fehr and Peers Transportation Consultants, looks at the impact of development on traffic volumes and levels of service in the context of NVSSP Phasing.

The number of dwelling units has fluctuated since the preparation of the revised traffic study. However, according to the Sacramento County Department of Transportation (Clark):

> "The Department of Transportation has reviewed the trip generation analysis prepared for the proposed changes in the land use plan for the North Vineyard Specific Plan by Fehr & Peers Transportation Consultant, April 3, 2002, and concurs with the conclusions that the changes in overall project trip generation are minor. The increase in project trip generation with the change in number of units is around 2%. Department of Transportation staff believes that this increase in the project trip generation will not result in any changes in the conclusions presented in the FEIR."

INTRODUCTION

PURPOSE

The purpose of this analysis was to determine off-site roadway improvements needed to accommodate traffic generated by the North Vineyard Station Specific Plan (NVSSP). Because the cost associated with the ultimate set of improvements is substantial, Sacramento County Transportation Division staff requested a phased traffic analysis to identify off-site roadway improvements needed to accommodate the development phases. Therefore, this analysis includes the evaluation of off-site traffic operations, including daily roadway capacity analysis and peak hour intersection operations, with the addition of Phase 1A in Year 2002 (existing conditions), Phase 1B in Year 2005, Year 2010 levels of development in Year 2010, and buildout of the NVSSP in Year 2015.

STUDY AREA

Plate TC -1 shows the location of the NVSSP with respect to the study area, including roadways and intersections bounded by State Route 16 (SR 16) to the north, Calvine Road to the south, Excelsior Road to the east, and Elk Grove-Florin Road to the west. Forty roadway segments and eighteen intersections were analyzed to determine the impacts of the proposed project on the roadway network within the project vicinity.

EVALUATION CRITERIA

The criteria for identifying roadway and intersection deficiencies are based on the County of Sacramento Transportation Division, *Traffic Impact Analysis Guidelines*, July 24, 1997. The following describes these criteria.

ROADWAY SEGMENTS

Study roadway segments were analyzed by comparing average daily traffic volumes to the capacity thresholds summarized in Table 7-1. The project results in an operational deficiency if the addition of project-generated traffic causes the demand on a facility to exceed its capacity, which is defined as LOS E.

According to standards set forth in *A Policy on Geometric Design of Highways and Streets* (1994) published by the American Association of State Highway and Transportation Officials (AASHTO), the minimum cross-section for rural arterials serving more than 400 vehicles per day includes 12-foot travel lanes and shoulders 6 feet or more in width. The following study roadway segments have roadway cross-sections less than this minimum cross-section:

- Gerber Road – East of Elk Grove-Florin Road;
- Vineyard Road – Calvine Road to Gerber Road; and
- Excelsior Road – Sheldon Road to north of SR 16.

The capacity of these roadways is 11,000 vehicles per day based on the 1994 *Highway Capacity Manual* methodologies, accounting for the roadways' substandard features, including the narrow travel lanes and shoulder widths. The two-lane rural roadway capacity is 7,000 vehicles per day less than the capacity of 18,000 vehicles per day for a two-lane roadway that has minimum 12-foot travel lanes and usable shoulders six feet or more in width.

Plate TC -1
Project Location Map

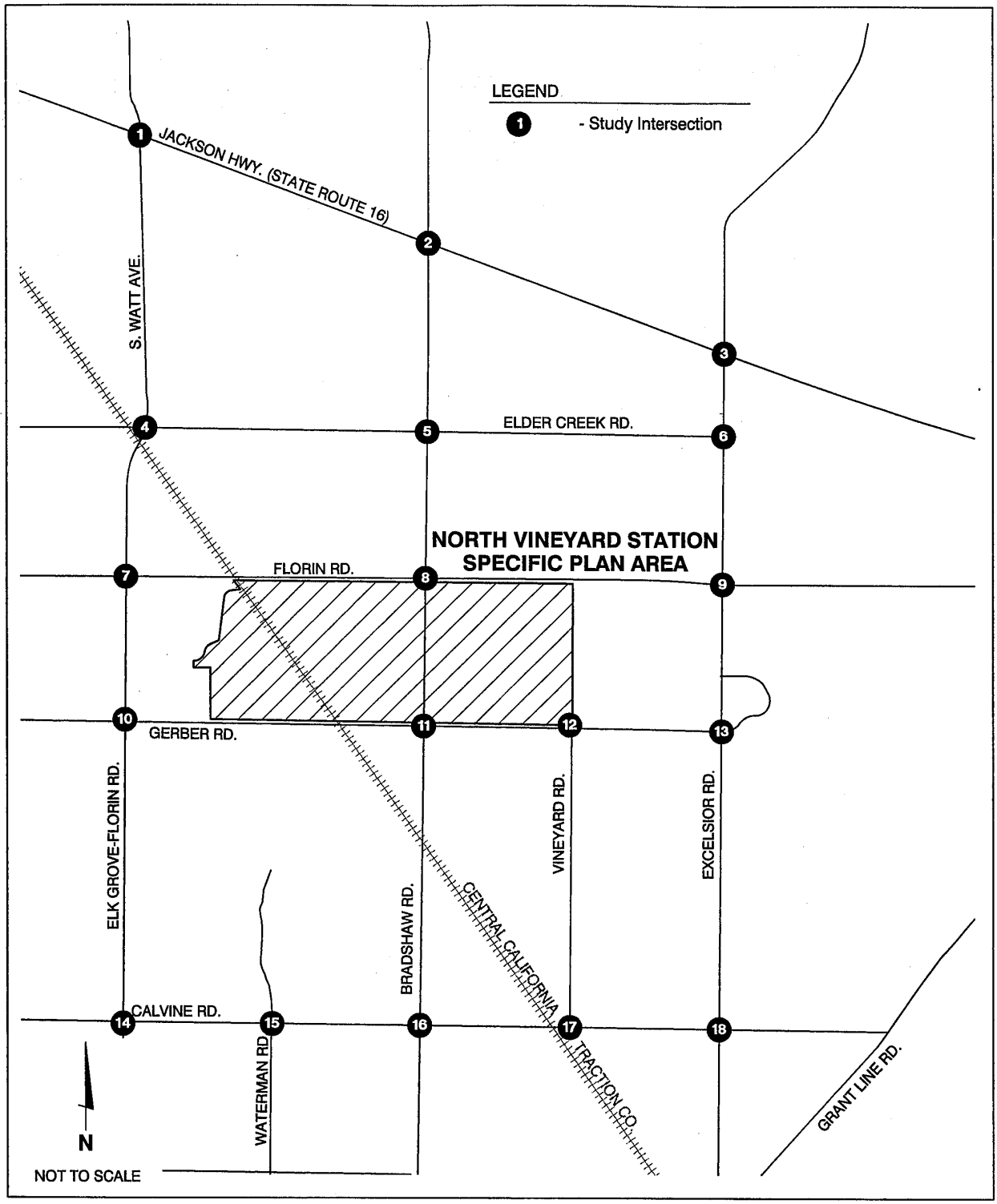


Table 7-1
Roadway Capacity Thresholds and Level of Service

Number of Lanes on Roadway	Maximum Daily Volume for Given Level of Service				
	A	B	C	D	E
Rural Two-lane Highway[1]					
2[1]	2,400	4,800	7,900	13,500	22,900
Rural Two-lane Roadways With Substandard Cross-sections					
2	1,300	2,600	4,300	6,800	11,000
Moderate Access Control Arterial[2]					
2	10,800	12,600	14,400	16,200	18,000
4	21,600	25,200	28,800	32,400	36,000
6	32,400	37,800	43,200	48,600	54,000

Notes:
[1] Capacities for rural 2-lane highway used to evaluate State Route 16.
[2] Capacities summarized above are for an arterial roadway with moderate access control (i.e., 2-4 stops per mile, limited driveways, and speeds between 35-45 mph.)
Source: *County of Sacramento Traffic Impact Guidelines,* July 24, 1997.

SIGNALIZED INTERSECTIONS

Analysis of signalized intersections was conducted using the methods described in *Interim Materials on Highway Capacity* (Circular No. 212, Transportation Research Board, January 1980) with adjustments for higher capacities as specified in the Sacramento County *Traffic Impact Analysis Guidelines,* July 24, 1997. The following capacities were used in this analysis:

- Two-phase signal – 1,650 critical movements per hour;
- Three-phase signal – 1,550 critical movements per hour; and
- Four or more phase signal – 1,500 critical movements per hour.

Table 7-2 summarizes signalized intersection level of service characteristics and corresponding volume-to-capacity (V/C) ratios. The V/C ratio is the projected volume divided by the theoretical capacity of the intersection. An intersection is defined to be at capacity when the V/C ratio is equal to 1.00.

Table 7-2
Level of Service Characteristics for Signalized Intersections

Level of Service	Description	Volume-to-Capacity Ratio
A	Uncongested operations; all queues clear in a single cycle.	≤ 0.60
B	Very light congestion; an occasional phase is fully utilized.	> 0.60 and ≤ 0.70
C	Light congestion; occasional queues on approaches.	> 0.70 and ≤ 0.80
D	Significant congestion on critical approaches, but intersection is functional. Cars required to wait through more than one cycle during short peaks. No longstanding queues formed.	> 0.80 and ≤ 0.90
E	Severe congestion with some longstanding queues on critical approaches. Traffic queue may block nearby intersection(s) upstream of critical approach(es).	> 0.90 and ≤ 1.00
F	Total breakdown, stop-and-go operation.	> 1.00

Source: *Interim Materials on Highway Capacity* (Circular No. 212, Transportation Research Board, January 1980).

UNSIGNALIZED INTERSECTIONS

Unsignalized intersections were analyzed using the method described in the *Highway Capacity Manual* (Special Report 209, Transportation Research Board, 1994). This methodology computes intersection level of service based on the weighted average total delay for all approaches. Table 7-3 summarizes the level of service criteria for stop sign-controlled intersections.

Table 7-3
Level of Service Characteristics for Unsignalized Intersections

Level of Service	Interpretation	Average Total Delay (seconds/vehicle)
A	Little or no delay.	≤ 5.0
B	Short traffic delays.	> 5.0 and ≤ 10.0
C	Average traffic delays.	> 10.0 and ≤ 20.0
D	Long traffic delays.	> 20.0 and ≤ 30.0
E	Very long traffic delays.	> 30.0 and ≤ 45.0
F	Stop-and-go conditions.	> 45.0

Source: *Highway Capacity Manual* (Special Report 209, Transportation Research Board, 1994).

LEVEL OF SERVICE THRESHOLD

The County of Sacramento has defined the level of service standard for urban roadways and intersections to be LOS E (i.e., LOS F is considered unacceptable). As outlined in the Sacramento County *Traffic Impact Analysis Guidelines*, a project related deficiency occurs if the addition of project-generated traffic causes a facility to change from LOS E (or better) to LOS F or, for facilities that will be operating unacceptably under “no project” conditions, adds more than five seconds of delay at unsignalized intersections or increases the V/C ratio on study roadways or at signalized intersections by 0.05 or more.

YEAR 2002 CONDITIONS

Construction and occupancy of residential dwelling units within Phase 1A of the NVSSP was anticipated by 2002. Therefore, study intersections and roadways were analyzed under Year 2002 conditions, which essentially represent existing conditions.

YEAR 2002 WITHOUT PROJECT CONDITIONS

The following discusses the roadway network and traffic operations under Year 2002 conditions without the implementation of Phase 1A.

ROADWAY SYSTEM

Plate TC -2 displays Year 2002 roadway lane assumptions within the study area. The off-site roadway network consists of two-lane collector and arterial facilities except for Elk Grove-Florin Road between Gerber Road and Calvine Road, which is four-lanes

wide. The widening of Bradshaw Road is anticipated in 2003 and the widening of Calvine Road between Elk Grove-Florin and Bradshaw Road is anticipated by 2002. These improvements were assumed for Year 2002 conditions based on County staff direction.

TRAFFIC VOLUMES

Fehr & Peers Associates conducted a.m. and p.m. peak period intersection turning movement counts at 18 intersections within the study area and gathered current daily roadway segment volumes (for 40 segments) from the Sacramento County Transportation Division. In addition, field surveys were performed to identify intersection lane geometries, intersection control, and roadway cross-sections.

Construction and occupancy of residential dwelling units within Phase 1A of the NVSSP is anticipated by 2002. Therefore, construction-year (Year 2002) forecasts were developed by adding background growth (i.e., traffic growth that will occur between 2000 and 2002) to existing peak hour intersection counts and daily roadway volumes. Background growth was estimated by identifying annual growth in traffic volumes within the study area. Peak hour volumes used in the October 1996 traffic analysis were compared to existing peak hour volumes collected in December 1999, which equated to an annual growth rate of four percent. Consequently, the existing traffic volumes were increased by eight percent to represent Year 2002 conditions. Plate TC -3 and Plate TC -4 display Year 2002 daily and peak hour traffic volumes, respectively.

ROADWAY ANALYSIS

The daily volumes shown on Plate TC -3 were compared to the roadway capacity thresholds presented in Table 7-1. Table 7-4 summarizes the results of the arterial roadway analysis. All of the study roadways will operate acceptably in 2002 (without Phase 1A) except for the following[1]:

- S. Watt Avenue (North of SR 16); and
- Elk Grove-Florin Road (Florin Road to Gerber Road).

[1] Assumes widening of Bradshaw Road (Calvine Road to SR 16) from 2 to 4 lanes.

Plate TC -2
Year 2002 Roadway System

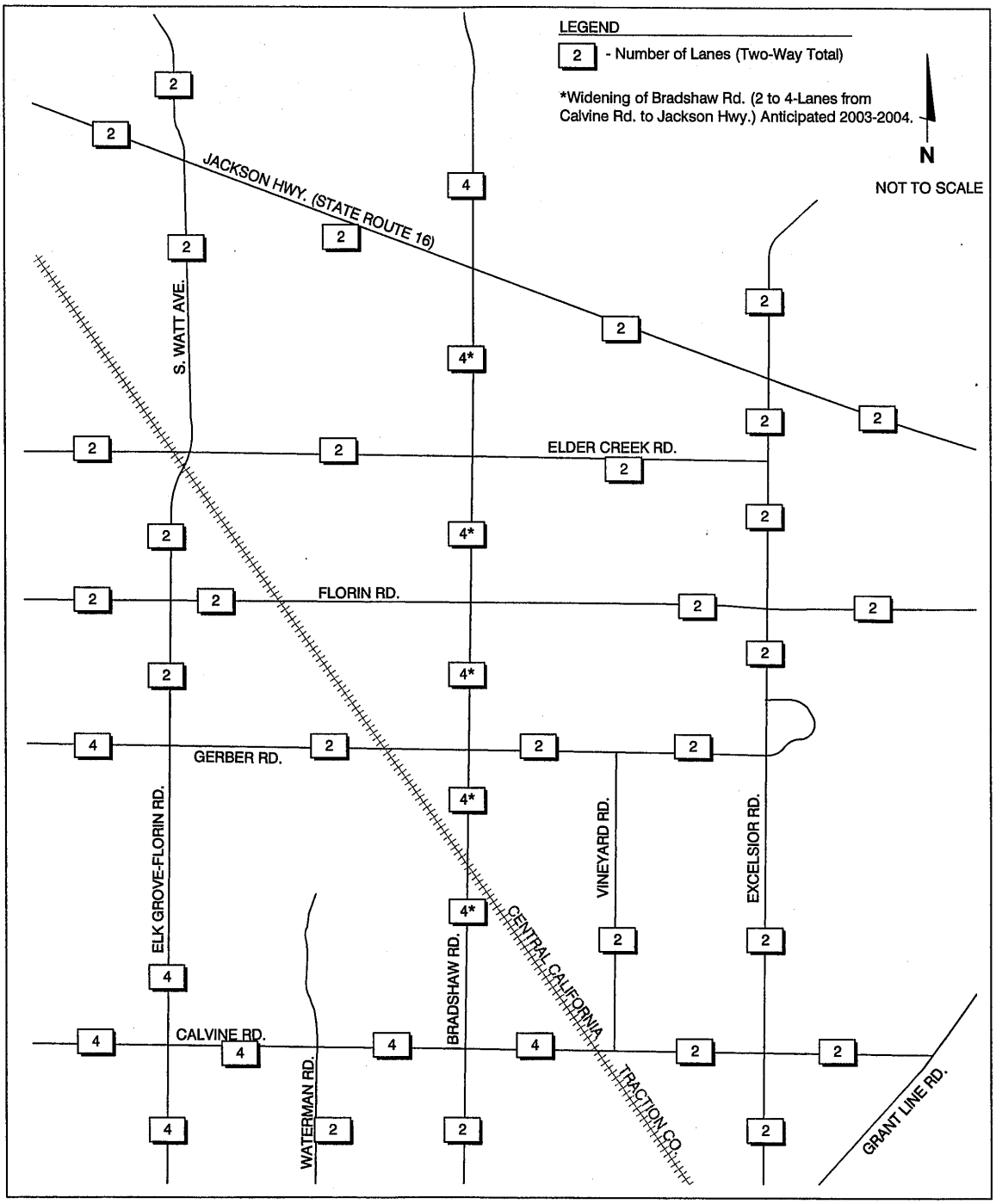


Plate TC -3
Average Daily Traffic Volumes
Year 2002 Without Phase 1A

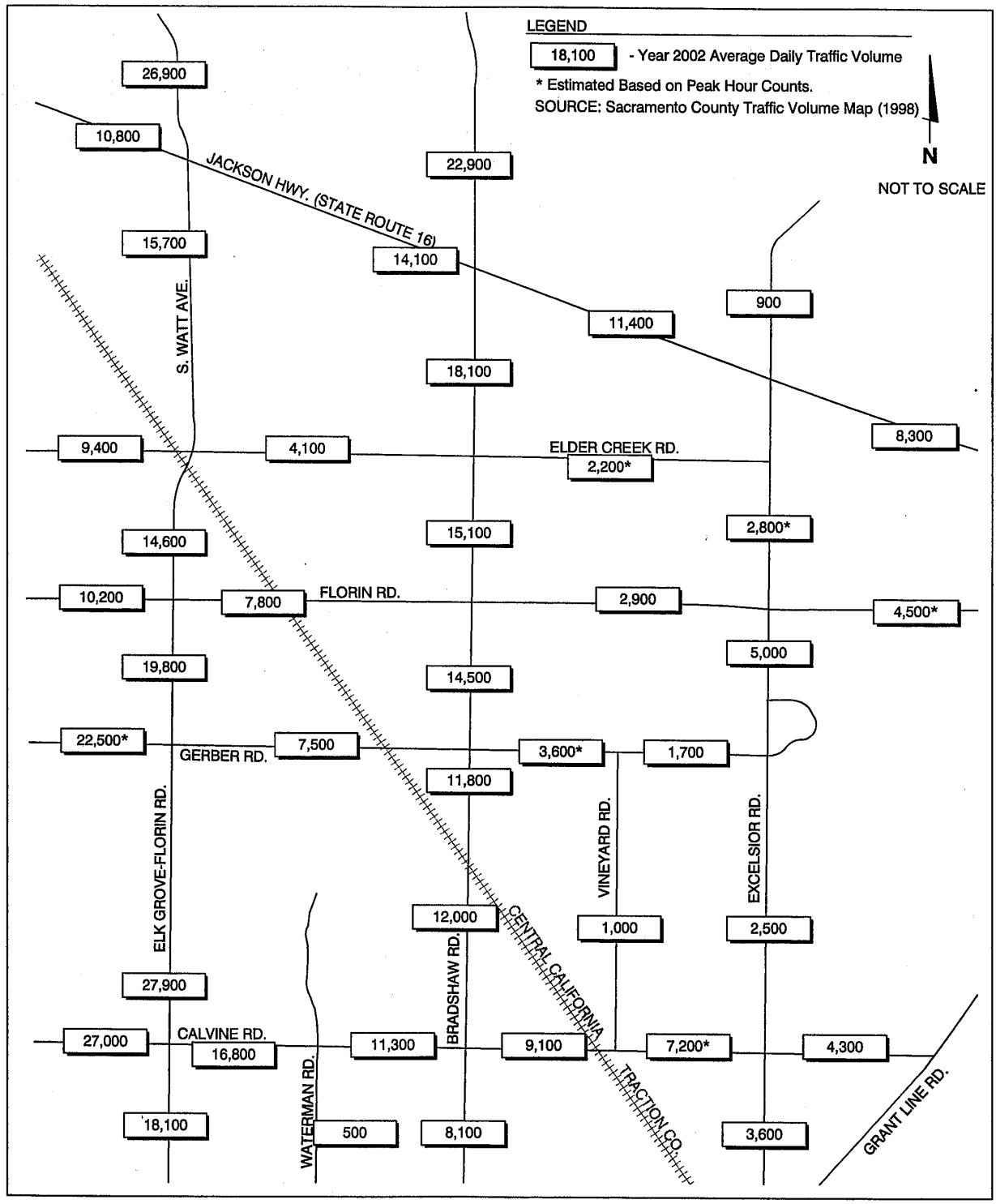
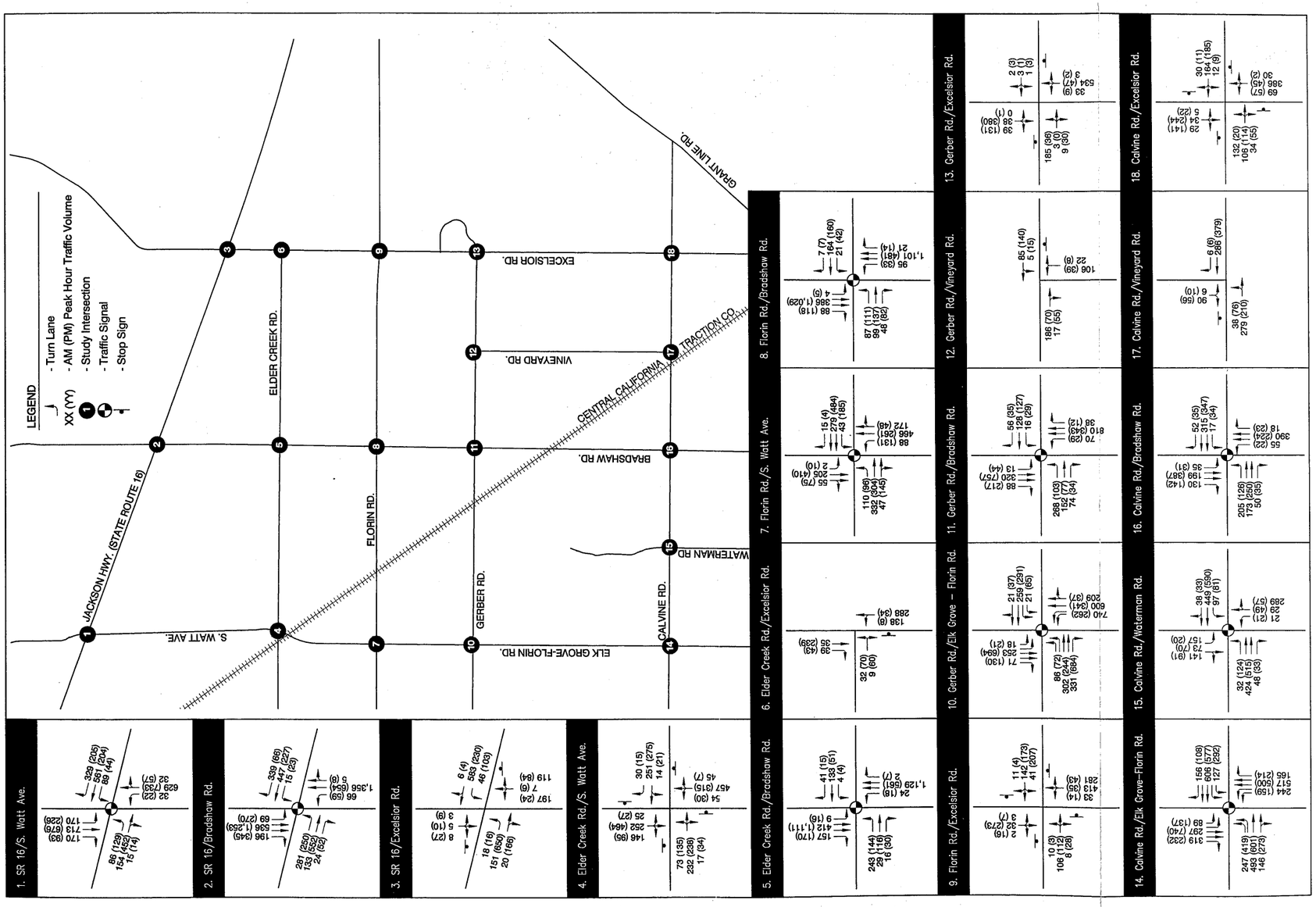


Plate TC -4
Peak Hour Traffic Volumes and Lane Configurations
Year 2002 Without Phase 1A



INTERSECTION ANALYSIS

The Year 2002 a.m. and p.m. peak hour intersection turning movements and lane configurations shown on Plate TC -4 were used to calculate the levels of service at each study intersection. Table 7-5 summarizes the results of this analysis. Improvements were assumed at the following intersections, consistent with the widening of Bradshaw Road from two to four lanes (Calvine Road to just south of SR 16):

- Gerber Road/Bradshaw Road;
- Florin Road/Bradshaw Road; and
- Elder Creek Road/Bradshaw Road.

Without the NVSSP, all of the study intersections will operate acceptably (LOS E or better) in both the a.m. and p.m. peak hours except for the SR 16/S. Watt Avenue intersection.

YEAR 2002 CONDITIONS WITH PHASE 1A

The following discusses Phase 1A of the NVSSP and its impacts on the surrounding roadway system under Year 2002 conditions.

PROJECT DESCRIPTION

Plate TC -5 shows the location of Phase 1A of the NVSSP, property owners, and potential access locations. Phase 1A is owned by the North Vineyard Investors, Pointe Vineyard and Morvai groups. The North Vineyard Investors property has frontage on Florin Road and is bisected by the Central California Traction Railroad easement. The Pointe Vineyard property has frontage on Bradshaw Road and Gerber Road. The Morvai property has frontage on Florin Road.

The following describes a potential access scenario that will satisfy the County's requirement to provide two points of access for emergency vehicles:

North Vineyard Investors (South of Railroad Easement) – Primary access to Gerber Road from Waterman Road and secondary access to Florin Road from Waterman Road (north) across the Central California Traction Railroad easement. An alternative secondary access could be provided to Gerber Road from 1 Street;

North Vineyard Investors (North of Railroad Easement) **–** Primary access to Florin Road from 3 Street and an emergency only access on Florin Road (due to the limited frontage);

Table 7-4
Roadway Analysis – Year 2002 Conditions

Roadway Segment	Year 2002 Conditions		
	Lanes	Volume	LOS
SR 16 – West of S. Watt Ave.	2	10,800	D
SR 16 – S. Watt Ave. to Bradshaw Rd.	2	14,100	E
SR 16 – Bradshaw Rd. to Excelsior Rd.	2	11,400	D
SR 16 – East of Excelsior Rd.	2	8,300	D
Elder Creek Rd. – West of S. Watt Ave.	2	9,400	A
Elder Creek Rd. – S. Watt Ave. to Bradshaw Rd.	2	4,100	A
Elder Creek Rd. – Bradshaw Rd. to Excelsior Rd.	2	2,200	A
Florin Rd. – West of S. Watt Ave.	2	10,200	A
Florin Rd. – S. Watt Ave. to Bradshaw Rd.	2	7,800	A
Florin Rd. – Bradshaw Rd. to Excelsior Rd.	2	2,900	A
Florin Rd. – East of Excelsior Rd.	2	4,500	A
Gerber Rd. – West of Elk Grove-Florin Rd.	4	22,500	B
Gerber Rd. – Elk Grove-Florin Rd. to Bradshaw Rd.	2	7,500	E
Gerber Rd. – Bradshaw Rd. to Vineyard Rd.	2	3,600	C
Gerber Rd. – Vineyard Rd. to Excelsior Rd.	2	1,700	B
Calvine Rd. – West of Elk Grove-Florin Rd.	4	27,000	C
Calvine Rd. – Elk Grove-Florin Rd. to Waterman Rd.	4	16,800	A
Calvine Rd. – Waterman Rd. to Bradshaw Rd. [1]	4	11,300	A
Calvine Rd. – Bradshaw Rd. to Vineyard Rd. [1]	4	9,100	A
Calvine Rd. – Vineyard Rd. to Excelsior Rd.	2	7,200	A
Calvine Rd. – Excelsior Rd. to Grant Line Rd.	2	4,300	A
S. Watt Avenue – North of SR 16	2	26,900	F
S. Watt Avenue – SR 16 to Elder Creek Rd.	2	15,700	D
S. Watt Avenue – Elder Creek Rd. to Florin Rd.	2	14,600	D
Elk Grove-Florin Rd. – Florin Rd. to Gerber Rd.	2	19,800	F
Elk Grove-Florin Rd. – Gerber Rd. to Calvine Rd.	4	27,900	C
Elk Grove-Florin Rd. – South of Calvine Rd.	4	18,100	A
Waterman Rd. – South of Calvine Rd.	2	500	A
Bradshaw Rd. – North of SR 16	4	22,900	B
Bradshaw Rd. – SR 16 to Elder Creek Rd. [2]	4	18,100	A
Bradshaw Rd. – Elder Creek Rd. to Florin Rd. [2]	4	15,100	A
Bradshaw Rd. – Florin Rd. to Gerber Rd. [2]	4	14,500	A
Bradshaw Rd. – Gerber Rd. to Calvine Rd. [2]	4	12,000	A
Bradshaw Rd. – South of Calvine Rd.	2	8,100	A
Vineyard Rd. – Gerber Rd. to Calvine Rd.	2	1,000	A
Excelsior Rd. – North of SR 16	2	900	A
Excelsior Rd. – Elder Creek Rd. to Florin Rd.	2	2,800	C
Excelsior Rd. – Florin Rd. to Gerber Rd.	2	5,000	D
Excelsior Rd. – Gerber Rd. to Calvine Rd.	2	2,500	B
Excelsior Rd. – South of Calvine Rd.	2	3,600	C

Notes: **Bold** – Unacceptable LOS according to County (LOS E) standards.
[1]Assumes widening of Calvine Road to 4 lanes (Kingsbridge Drive to Bradshaw).
[2]Assumes widening of Bradshaw Road to 4 lanes (Calvine Road to SR 16).
Source: Sacramento County Traffic Impact Guidelines (July 24, 1997) and Fehr & Peers Associates, 2002.

Table 7-5
Peak Hour Intersection Operations – Year 2002 Conditions

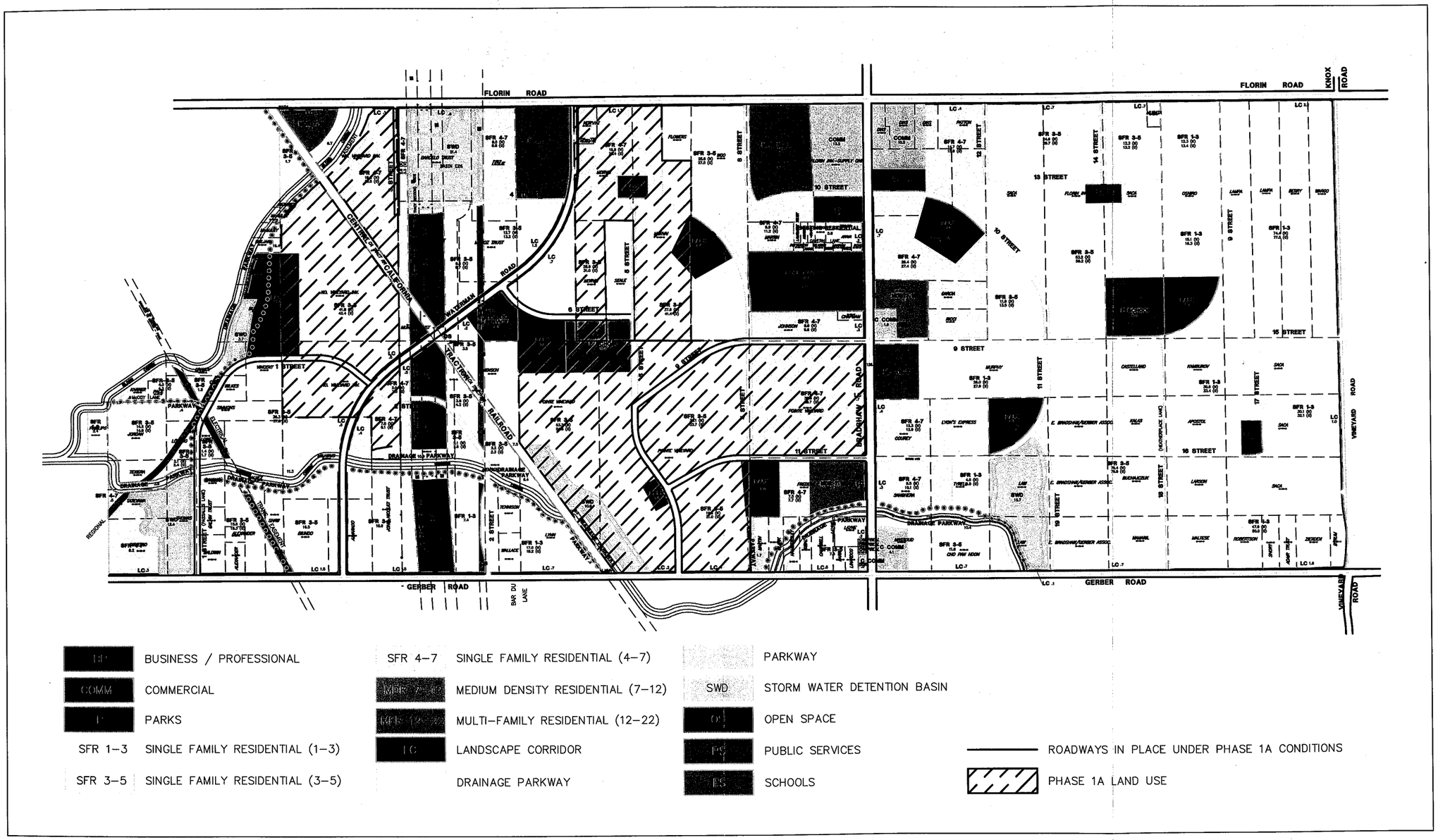
Intersection	Control	AM Peak Hour		PM Peak Hour	
		Delay / V/C	LOS	Delay / V/C	LOS
1. SR 16/S. Watt Ave.	Signal[1]	0.99	E	**1.02**	F
2. SR 16/Bradshaw Rd.	Signal	0.99	E	0.84	D
3. SR 16/Excelsior Rd.	2-Way Stop[2]	5.5	B	1.9	A
4. Elder Creek Rd./S. Watt Ave.	4-Way Stop[3]	19.2	C	40.8	E
5. Elder Creek Rd./Bradshaw Rd.	Signal	0.63	B	0.51	A
6. Elder Creek Rd./Excelsior Rd.	2-Way Stop	1.3	A	1.6	A
7. Florin Rd./Elk Grove-Florin Rd.	Signal	0.38	A	0.52	A
8. Florin Rd./Bradshaw Rd.	Signal	0.54	A	0.55	A
9. Florin Rd./Excelsior Rd.	4-Way Stop	27.8	D	8.5	B
10. Gerber Rd./Elk Grove-Florin Rd.	Signal	0.48	A	0.71	C
11. Gerber Rd./Bradshaw Rd.	Signal	0.54	A	0.43	A
12. Gerber Rd./Vineyard Rd.	2-Way Stop	1.7	A	0.9	A
13. Gerber Rd./Excelsior Rd.	2-Way Stop	11.2	C	4.7	A
14. Calvine Rd./Elk Grove-Florin Rd.	Signal	0.50	A	0.70	B
15. Calvine Rd./Waterman Rd.	Signal	0.52	A	0.41	A
16. Calvine Rd./Bradshaw Rd.[4]	Signal	0.40	A	0.34	A
17. Calvine Rd./Vineyard Rd.	2-Way Stop	0.8	A	0.9	A
18. Calvine Rd./Excelsior Rd.	4-Way Stop	12.7	C	12.1	C

Notes: **Bold** – Unacceptable LOS according to County (LOS E) standards.
[1] Signal Control- Circular 212 Planning Methodology- Results present volume/capacity ratio and LOS.
[2] 2-Way Stop Control- 1994 HCM Unsignalized Methodology- Results present delay (seconds/vehicle) and LOS.
[3] 4-Way Stop Control- 1994 HCM Unsignalized Methodology- Results present delay (seconds/vehicle) and LOS.

[4] Assumed signal control, consistent with widening of Bradshaw Road (two to four lanes - Calvine Road to SR 16).

Source: Fehr & Peers Associates, 2002.

Plate TC -5
North Vineyard Station Land Use Diagram – Phase 1A



Pointe Vineyard **–** Primary access to Gerber Road from 5 Street and secondary access to Bradshaw Road from 9 Street. An alternative secondary access could be provided to Bradshaw Road from 11 Street; and

Morvai Property – Primary access to Florin Road and secondary access to Gerber Road from Waterman Road and 6 Street across the Central California Traction Railroad easement.

Please note that extending Waterman Road across the Central California Traction Railroad will require approval from the California Public Utilities Commission.

TRIP GENERATION AND DISTRIBUTION

Trip generation estimates for Phase 1A were developed based on trip rates from *Trip Generation,* Institute of Transportation Engineers, 6th Edition, 1997. Phase 1A includes residential, school, and park/recreational uses, including 1,543 single-family dwelling units and a 1.5-acre neighborhood park. Table 7-6 summarizes the estimated daily, a.m. peak hour, and p.m. peak hour trip generation for Phase 1A.

Table 7-6
Trip Generation Estimates for Phase 1A

Land Use	Amount	Trip Rate [1]			Phase 1A Trips		
		Daily	AM Peak Hour	PM Peak Hour	Daily	AM Peak Hour	PM Peak Hour
Single-Family Residential	1,543 units	9.57	0.75	1.01	14,767	1,157	1,558
				Total	**14,767**	**1,157**	**1,558**

Notes: [1]Based on *Trip Generation,* Institute of Transportation Engineers, 6th Edition, 1997.

Since Phase 1A lacks complementary land uses (i.e., employment and retail land uses), trips generated by the single-family residential units were assumed to be external to the development (i.e., have destinations outside of the specific plan area). The parks and school site located in the Pointe Vineyard and Morvai properties were not assumed as part of Phase 1A because they straddle multiple parcels. Trips generated by these uses are accounted for in the Year 2015 with buildout of the NVSSP analysis.

Phase 1A trips were added to the Year 2002 daily, a.m. peak hour, and p.m. peak hour traffic volumes based on the directional distribution of project trips shown in Plate TC -6, which is consistent with the distribution used in the 1996 traffic analysis. The resulting daily and peak hour volumes were used to identify project related deficiencies.

ROADWAY ANALYSIS

Plate TC -7 displays daily traffic volumes for Year 2002 conditions with Phase 1A. These forecasts were compared to the roadway capacity thresholds presented in Table

7-1 to determine if the addition of Phase 1A trips will cause roadway deficiencies. Table 7-7 summarizes the results of the arterial roadway analysis.

The addition of Phase 1A trips will cause the segment of S. Watt Avenue between SR 16 and Elder Creek Road to decline from LOS D to LOS F and will cause the segment of Gerber Road between Elk Grove-Florin Road and Bradshaw Road to decline from LOS E to LOS F. Gerber Road east of Elk Grove-Florin Road has a substandard roadway cross-section characterized by narrow travel lanes and shoulder width and was analyzed using the rural two-lane roadway capacities identified in Table 7-1.

In addition, Phase 1A trips will increase the V/C ratio by 0.05 or more on the following facilities that operate at LOS F under 2002 conditions without Phase 1A:

- S. Watt Avenue – (North of SR 16); and
- Elk Grove-Florin Road – (Florin Road to Gerber Road).

INTERSECTION ANALYSIS

The a.m. and p.m. peak hour intersection turning movements and lane configurations shown on Plate TC -8 were used to calculate the levels of service at each study intersection for Year 2002 conditions with Phase 1A. The level of service at each study intersection is presented in Table 8-8. As shown, the addition of Phase 1A trips will cause deficiencies at the following intersections:

SR 16/S. Watt Avenue – The addition of project trips will cause LOS F operations during the a.m. peak hour and will increase the V/C ratio by more than 0.05 during the p.m. peak hour;

SR 16/Bradshaw Road – The addition of project trips will cause LOS F operations during the a.m. peak hour; and

Elder Creek Road/S. Watt Avenue – The addition of project trips will cause LOS F operations during the p.m. peak hour.

Plate TC -6
Project Trip Distribution

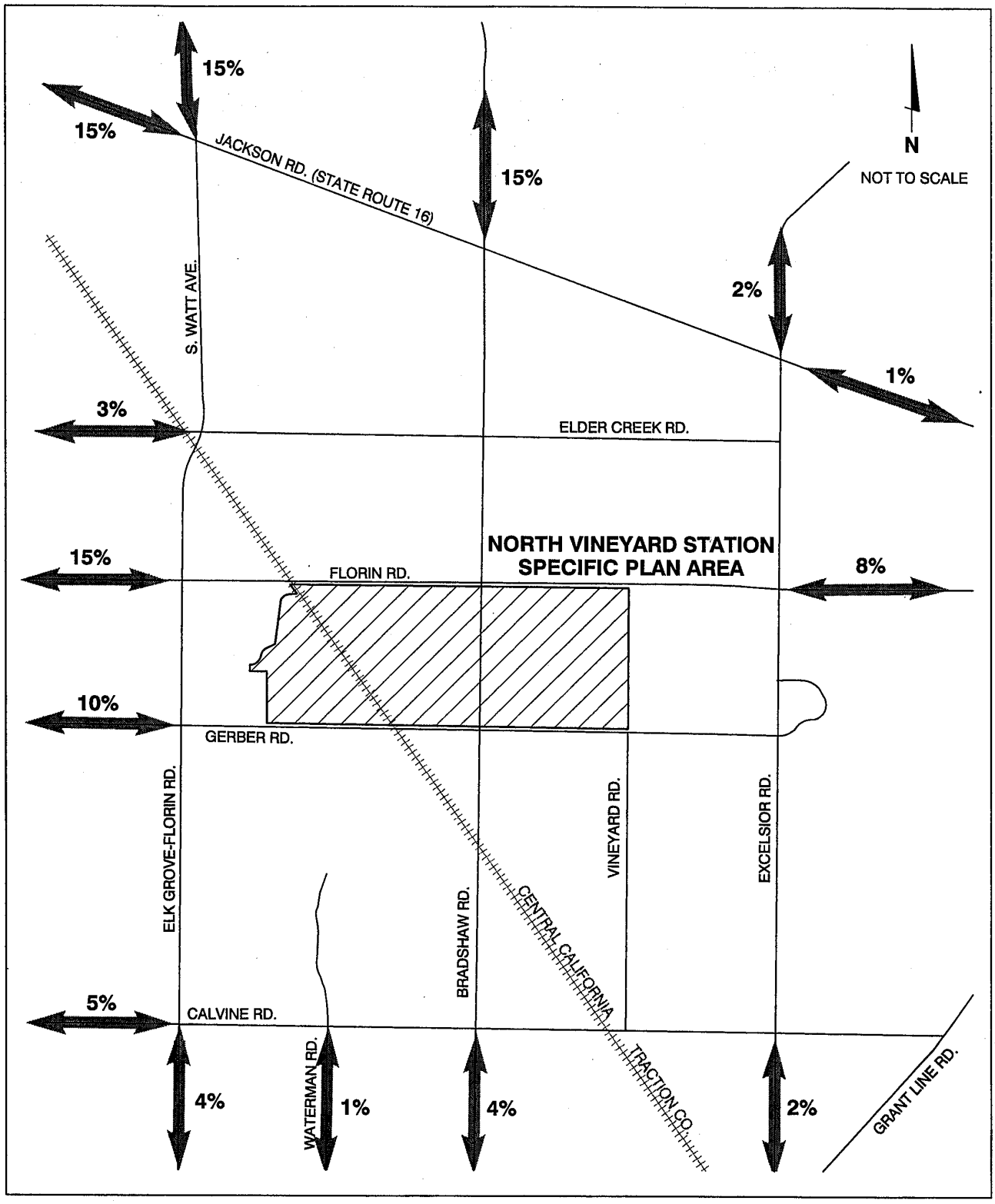


Plate TC -7
Average Daily Traffic Volumes – Phase 1A

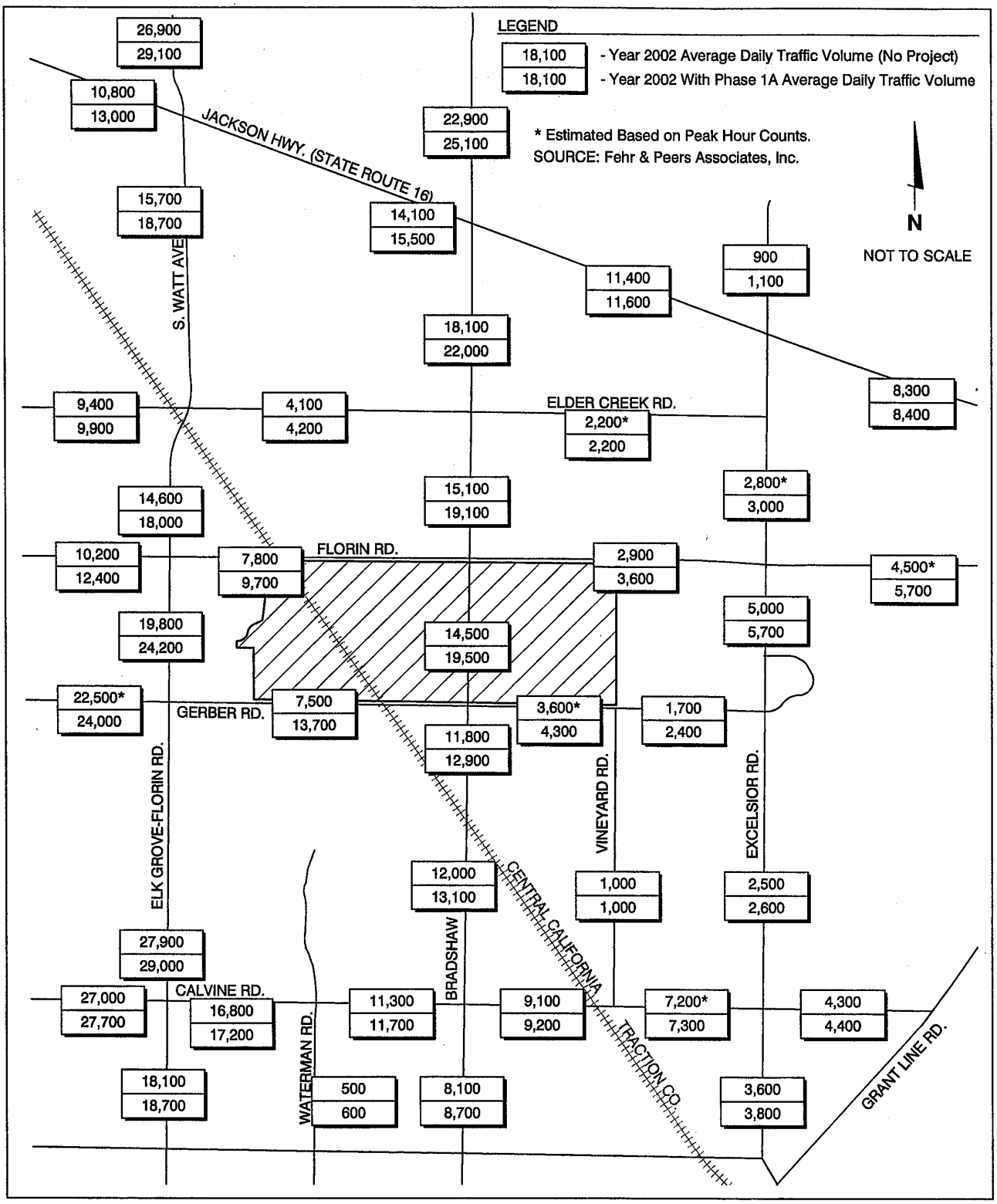


Table 7-7
Roadway Analysis – Year 2002 Conditions with Phase 1A

Roadway Segment	Year 2002 Conditions Without Phase 1A			Year 2002 Conditions With Phase 1A		
	Lanes	Volume	LOS	Lanes	Volume	LOS
SR 16 – West of S. Watt Ave.	2	10,800	D	2	13,000	D
SR 16 – S. Watt Ave. to Bradshaw Rd.	2	14,100	E	2	15,500	E
SR 16 – Bradshaw Rd. to Excelsior Rd.	2	11,400	D	2	11,600	D
SR 16 – East of Excelsior Rd.	2	8,300	D	2	8,400	D
Elder Creek Rd. – West of S. Watt Ave.	2	9,400	A	2	9,900	A
Elder Creek Rd. – S. Watt Ave. to Bradshaw Rd.	2	4,100	A	2	4,200	A
Elder Creek Rd. – Bradshaw Rd. to Excelsior Rd.	2	2,200	A	2	2,200	A
Florin Rd. – West of S. Watt Ave.	2	10,200	A	2	12,400	B
Florin Rd. – S. Watt Ave. to Bradshaw Rd.	2	7,800	A	2	9,700	A
Florin Rd. – Bradshaw Rd. to Excelsior Rd.	2	2,900	A	2	3,600	A
Florin Rd. – East of Excelsior Rd.	2	4,500	A	2	5,700	A
Gerber Rd. – West of Elk Grove-Florin Rd.	4	22,500	B	4	24,000	B
Gerber Rd. – Elk Grove-Florin Rd. to Bradshaw Rd.	2	7,500	E	2	13,700	F
Gerber Rd. – Bradshaw Rd. to Vineyard Rd.	2	3,600	C	2	4,300	C
Gerber Rd. – Vineyard Rd. to Excelsior Rd.	2	1,700	B	2	2,400	B
Calvine Rd. – West of Elk Grove-Florin Rd.	4	27,000	C	4	27,700	C
Calvine Rd. – Elk Grove-Florin Rd. to Waterman Rd.	4	16,800	A	4	17,200	A
Calvine Rd. – Waterman Rd. to Bradshaw Rd. [1]	4	11,300	A	4	11,700	A
Calvine Rd. – Bradshaw Rd. to Vineyard Rd. [1]	4	9,100	A	4	9,200	A
Calvine Rd. – Vineyard Rd. to Excelsior Rd.	2	7,200	A	2	7,300	A
Calvine Rd. – Excelsior Rd. to Grant Line Rd.	2	4,300	A	2	4,400	A
S. Watt Avenue – North of SR 16	2	26,900	F	2	29,100	F
S. Watt Avenue – SR 16 to Elder Creek Rd.	2	15,700	D	2	18,700	F
S. Watt Avenue – Elder Creek Rd. to Florin Rd.	2	14,600	D	2	18,000	E
Elk Grove-Florin Rd. – Florin Rd. to Gerber Rd.	2	19,800	F	2	24,200	F
Elk Grove-Florin Rd. – Gerber Rd. to Calvine Rd.	4	27,900	C	4	29,000	D
Elk Grove-Florin Rd. – South of Calvine Rd.	4	18,100	A	4	18,700	A
Waterman Rd. – South of Calvine Rd.	2	500	A	2	600	A
Bradshaw Rd. – North of SR 16	4	22,900	B	4	25,100	B
Bradshaw Rd. – SR 16 to Elder Creek Rd. [2]	4	18,100	A	4	22,000	B
Bradshaw Rd. – Elder Creek Rd. to Florin Rd. [2]	4	15,100	A	4	19,100	A
Bradshaw Rd. – Florin Rd. to Gerber Rd. [2]	4	14,500	A	4	19,500	A
Bradshaw Rd. – Gerber Rd. to Calvine Rd. [2]	4	12,000	A	4	13,100	A
Bradshaw Rd. – South of Calvine Rd.	2	8,100	A	2	8,700	A
Vineyard Rd. – Gerber Rd. to Calvine Rd.	2	1,000	A	2	1,000	A
Excelsior Rd. – North of SR 16	2	900	A	2	1,100	A
Excelsior Rd. – Elder Creek Rd. to Florin Rd.	2	2,800	C	2	3,000	C
Excelsior Rd. – Florin Rd. to Gerber Rd.	2	5,000	D	2	5,700	D
Excelsior Rd. – Gerber Rd. to Calvine Rd.	2	2,500	B	2	2,600	B
Excelsior Rd. – South of Calvine Rd.	2	3,600	C	2	3,800	C

Notes: **Bold** – Unacceptable LOS according to County (LOS E) standards.
[1]Assumes widening of Calvine Road to 4 lanes (Kingsbridge Drive to Bradshaw).
[2]Assumes widening of Bradshaw Road to 4 lanes (Calvine Road to SR 16).
Source: Sacramento County Traffic Impact Guidelines (July 24, 1997) and Fehr & Peers Associates, 2002.

Table 7-8
Peak Hour Intersection Operations – Year 2002 Conditions with Phase 1A

Intersection	Control	Year 2002 Without Phase 1A				Year 2002 With Phase 1A			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Delay / V/C	LOS	Delay / V/C	LOS	Delay / V/C	LOS	Delay / V/C	LOS
1. SR 16/S. Watt Ave.	Signal[1]	0.99	E	**1.02**	F	**1.08**	F	**1.19**	F
2. SR 16/Bradshaw Rd.	Signal	0.99	E	0.84	D	**1.04**	F	0.93	E
3. SR 16/Excelsior Rd.	2-Way Stop[2]	5.5	B	1.9	A	6.0	B	2.2	A
4. Elder Creek Rd./S. Watt Ave.	4-Way Stop[3]	19.2	C	40.8	E	40.1	E	**>45.0**	F
5. Elder Creek Rd./Bradshaw Rd.	Signal	0.63	B	0.51	A	0.70	B	0.59	A
6. Elder Creek Rd./Excelsior Rd.	2-Way Stop	1.3	A	1.6	A	1.2	A	1.6	A
7. Florin Rd./Elk Grove-Florin Rd.	Signal	0.38	A	0.52	A	0.47	A	0.66	B
8. Florin Rd./Bradshaw Rd.	Signal	0.54	A	0.55	A	0.63	B	0.67	B
9. Florin Rd./Excelsior Rd.	4-Way Stop	27.8	D	8.5	B	35.7	E	11.1	C
10. Gerber Rd./Elk Grove-Florin Rd.	Signal	0.48	A	0.71	C	0.57	A	0.73	C
11. Gerber Rd./Bradshaw Rd.	Signal	0.54	A	0.43	A	0.62	B	0.52	A
12. Gerber Rd./Vineyard Rd.	2-Way Stop	1.7	A	0.9	A	1.7	A	0.8	A
13. Gerber Rd./Excelsior Rd.	2-Way Stop	11.2	C	4.7	A	13.4	C	4.9	A
14. Calvine Rd./Elk Grove-Florin Rd.	Signal	0.50	A	0.70	B	0.53	A	0.72	C
15. Calvine Rd./Waterman Rd.	Signal	0.52	A	0.41	A	0.53	A	0.42	A
16. Calvine Rd./Bradshaw Rd.[4]	Signal	0.40	A	0.34	A	0.41	A	0.37	A
17. Calvine Rd./Vineyard Rd.	2-Way Stop	0.8	A	0.9	A	0.8	A	0.9	A
18. Calvine Rd./Excelsior Rd.	4-Way Stop	12.7	C	12.1	C	13.2	C	11.6	C

Notes: **Bold** – Unacceptable LOS according to County (LOS E) standards.

[1] Signal Control- Circular 212 Planning Methodology- Results present volume/capacity ratio and LOS.

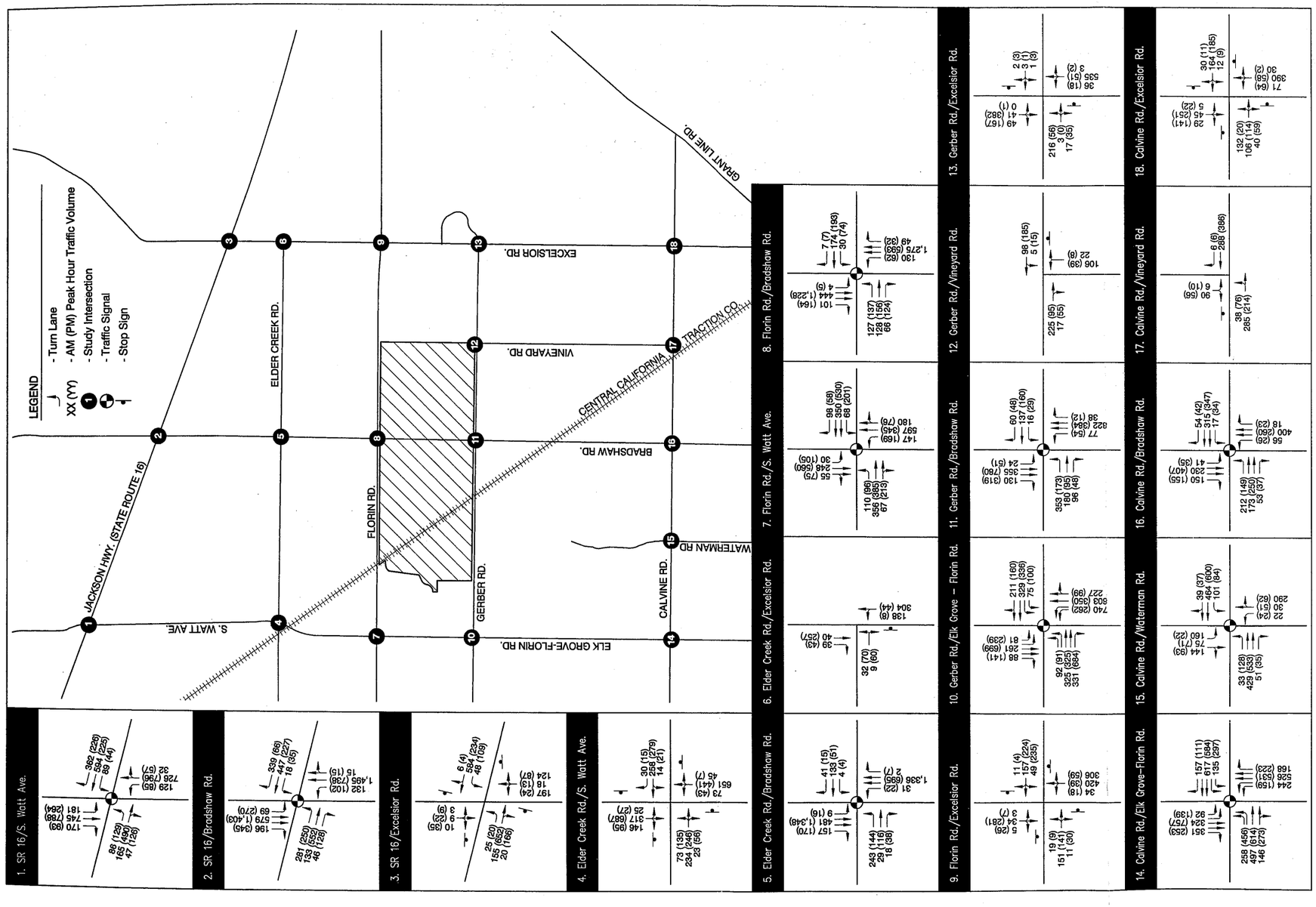
[2] 2-Way Stop Control- 1994 HCM Unsignalized Methodology- Results present delay (seconds/vehicle) and LOS.

[3] 4-Way Stop Control- 1994 HCM Unsignalized Methodology- Results present delay (seconds/vehicle) and LOS.

[4] Assumed signal control, consistent with widening of Bradshaw Road (two to four lanes - Calvine Road to SR 16).

Source: Fehr & Peers Associates, 2002.

Plate TC -8
Peak Hour Traffic Volumes and Lane Configurations
Year 2002 With Phase 1A



PROJECT IMPACTS

Based on the roadway and intersection analysis, the addition of Phase 1A trips will cause or contribute to deficiencies at the following study locations under Year 2002 conditions: These impacts are considered significant.

STUDY ROADWAYS

- S. Watt Avenue – (North of SR 16);
- S. Watt Avenue – (SR 16 to Elder Creek Road);
- Elk Grove-Florin Road – (Florin Road to Gerber Road);
- Gerber Road – (Elk Grove-Florin Road to Bradshaw Road);

STUDY INTERSECTIONS

- SR 16/S. Watt Avenue;
- SR 16/Bradshaw Road; and
- Elder Creek Road/S. Watt Avenue.

MITIGATION MEASURES FOR PHASE 1A

The following improvements will eliminate deficiencies caused by the addition of Phase 1A trips, and reduce impacts to less-than-significant. The study roadway and intersection improvements recommended in the NVSSP DEIR (July 1997) for existing plus project conditions are also summarized below.

STUDY ROADWAYS MITIGATION MEASURES

TC-1. S. Watt Avenue (North of SR 16) – Widening this segment from two to four lanes will improve operations to LOS D.

This study roadway segment was not impacted under existing plus project conditions in the NVSSP DEIR.

TC-2. S. Watt Avenue (SR 16 to Elder Creek Road) – Widening this segment from two to four lanes will improve operations to LOS A.

This improvement was also recommended in the NVSSP DEIR for existing plus project conditions.

TC-3. Elk Grove-Florin Road (Florin Road to Gerber Road) – Widening this segment from two to four lanes will improve operations to LOS B.

This improvement was also recommended in the NVSSP DEIR for existing plus project conditions.

TC-4. Gerber Road (Elk Grove-Florin Road to Bradshaw Road) – Improving the roadway cross-section to include minimum 12-foot travel lanes and 6-foot shoulders will improve operations to LOS C.

The NVSSP DEIR recommended widening this segment from two to four lanes under existing plus project conditions.

STUDY INTERSECTIONS MITIGATION MEASURES

TC-5. SR 16/S. Watt Avenue – Widening the northbound and southbound approaches to include an additional through lane will improve operations to LOS D during the a.m. and p.m. peak hours. This improvement is consistent with the recommended widening of S. Watt Avenue to four lanes between Elder Creek Road and SR 16.

The NVSSP DEIR recommended modifying this intersection to include a separate left-turn lane, two through lanes, and a separate right-turn lane on all approaches under existing plus project conditions.

TC-6. SR 16/Bradshaw Road – Widening the eastbound approach to include dual left-turn lanes will improve operations to LOS E during the a.m. peak hour.

Evaluation of other Public Facility Financing Plans revealed that the Sunridge Public Facility Financing Plan includes improvements at the State Route 16 and Bradshaw Road intersection. The proposed improvements are expansion of the intersection to accommodate two left turn lanes, two through lanes and one right turn lane on all approaches. It is likely that right-of-way will need to be acquired to provide the proposed improvements. The improvement is included in Phase 1 on the Sunridge Public Facility Financing Plan, which would mean that the improvement would be constructed in the next 5 years. With those improvements, the intersection level of service would improve to LOS D in the a.m. peak hour and LOS C in the p.m. peak hour, with build out of Phase 1A of the North Vineyard Station Specific Plan.

The NVSSP DEIR recommended modifying this intersection to include dual left-turn lanes, two through lanes, and a separate right-turn lane on the northbound and southbound approaches and a separate left-turn lane, a through lane, and a separate right-turn lane on the eastbound and westbound approaches under existing plus project conditions.

TC-7. Elder Creek Road/S. Watt Avenue – Installing a traffic signal and widening each approach to include an exclusive left-turn lane and a shared through/right-turn lane will improve operations to LOS D during the p.m. peak hour.

The NVSSP DEIR recommended modifying this intersection to include a traffic signal and a left-turn lane, two through lanes, and a separate right-turn

lane on the northbound and southbound approaches and a left-turn lane and a shared through/right-turn lane on the eastbound and westbound approaches under existing plus project conditions.

RECOMMENDED IMPROVEMENTS

Based on discussions with Sacramento County Department of Public Works, the following improvements shall be implemented prior to the construction of Phase 1A:

Improve the existing two lane cross section of Gerber Road between Elk Grove-Florin Road and Bradshaw Road to include a minimum of 12-foot travel lanes and 6-foot shoulders; and

Install a traffic signal at the Elder Creek Road/S. Watt Avenue intersection and widen each approach to include an exclusive left-turn lane and a shared through/right-turn lane.

STAGE 1 OF PHASE 1A

Initial development (Stage 1) within Phase 1A of the NVSSP will include approximately 600 dwelling units. Additional analysis was conducted at the Elder Creek Road/S. Watt intersection, which operates at LOS E during the p.m. peak hour under Year 2002 no project conditions, to determine the number of dwelling units that could be constructed in Stage 1 of Phase 1A before the improvements at the intersection (outlined above) were necessary. About 150 units could be constructed in Stage 1 of Phase 1A before the LOS at the Elder Creek Road/S. Watt intersection operates worse than County standards.

YEAR 2005 CONDITIONS

Phase 1B of the NVSSP was analyzed under Year 2005 conditions to determine if development of the project, in addition to background growth, will adversely affect the planned roadway system in the Year 2005.

YEAR 2005 WITHOUT PHASE 1B CONDITIONS

The following discusses the roadway network and traffic operations under Year 2005 conditions without the implementation of the proposed project.

ROADWAY NETWORK

The following roadway improvement is planned to occur by the Year 2005:

- S. Watt Avenue will be widened to four lanes from Elder Creek Road to north of SR 16.

Plate TC -9 displays the planned number of lanes on each roadway segment under Year 2005 conditions. In addition, the recommended improvements under Year 2002 with Phase 1A conditions (i.e., improving Gerber Road from Elk Grove-Florin Road to Bradshaw Road and installing a traffic signal at the Elder Creek Road/S. Watt Avenue intersection) were assumed to be in place by Year 2005.

TRAFFIC VOLUMES

The 1999 version of the SACMET Regional Travel Demand Forecasting (TDF) model was used to develop Year 2005 daily and peak hour traffic volumes. The Year 2005 model was updated to include the planned roadway improvements listed above. Land uses within the project site remained at Year 2002 levels of development. Plate TC -10 and Plate TC -11 display the Year 2005 daily and a.m. and p.m. peak hour traffic volumes, respectively.

ROADWAY ANALYSIS

The daily volumes shown on Plate TC -10 were compared to the roadway capacity thresholds presented in Table 7-1. Table 7-9 summarizes the results of the arterial roadway analysis. The study roadways will operate acceptably in Year 2005 (without Phase 1B) except for the following:

- S. Watt Avenue (North of SR 16);
- S. Watt Avenue (Elder Creek Road to Florin Road); and
- Elk Grove-Florin Road (Florin Road to Gerber Road).

INTERSECTION ANALYSIS

The Year 2005 a.m. and p.m. peak hour intersection turning movements and lane configurations displayed in Plate TC -11 were used to calculate the levels of service at each study intersection. Table 7-10 summarizes the results of this analysis. Improvements were assumed at the following intersections, consistent with the widening of S. Watt Avenue from two to four lanes from Elder Creek Road to SR 16:

- SR 16/S. Watt Avenue; and
- Elder Creek Road/S. Watt Avenue.

As shown in Table 7-10, the following intersections will operate acceptably in 2005 (without Phase 1B) except for the following:

SR 16/Bradshaw Road operates at LOS F during the a.m. peak hour;

- Florin Road/Excelsior Road operates at LOS F during the a.m. peak hour; and
- Gerber Road/Excelsior Road operates at LOS F during the a.m. peak hour.

Year 2005 With Phase 1B Conditions

Traffic operations of the study roadways and intersections were analyzed under Year 2005 conditions with the addition of trips generated by Phase 1B of the NVSSP.

ROADWAY NETWORK

The Year 2005 roadway network with Phase 1B includes the additional north-south roadways that provide alternative routes within the project vicinity. Plate TC -12 displays Phase 1B, which assumes the development of Phase 1A, of the NVSSP and shows the location of the proposed roadways serving the project site.

Plate TC -9
Year 2005 Roadway System

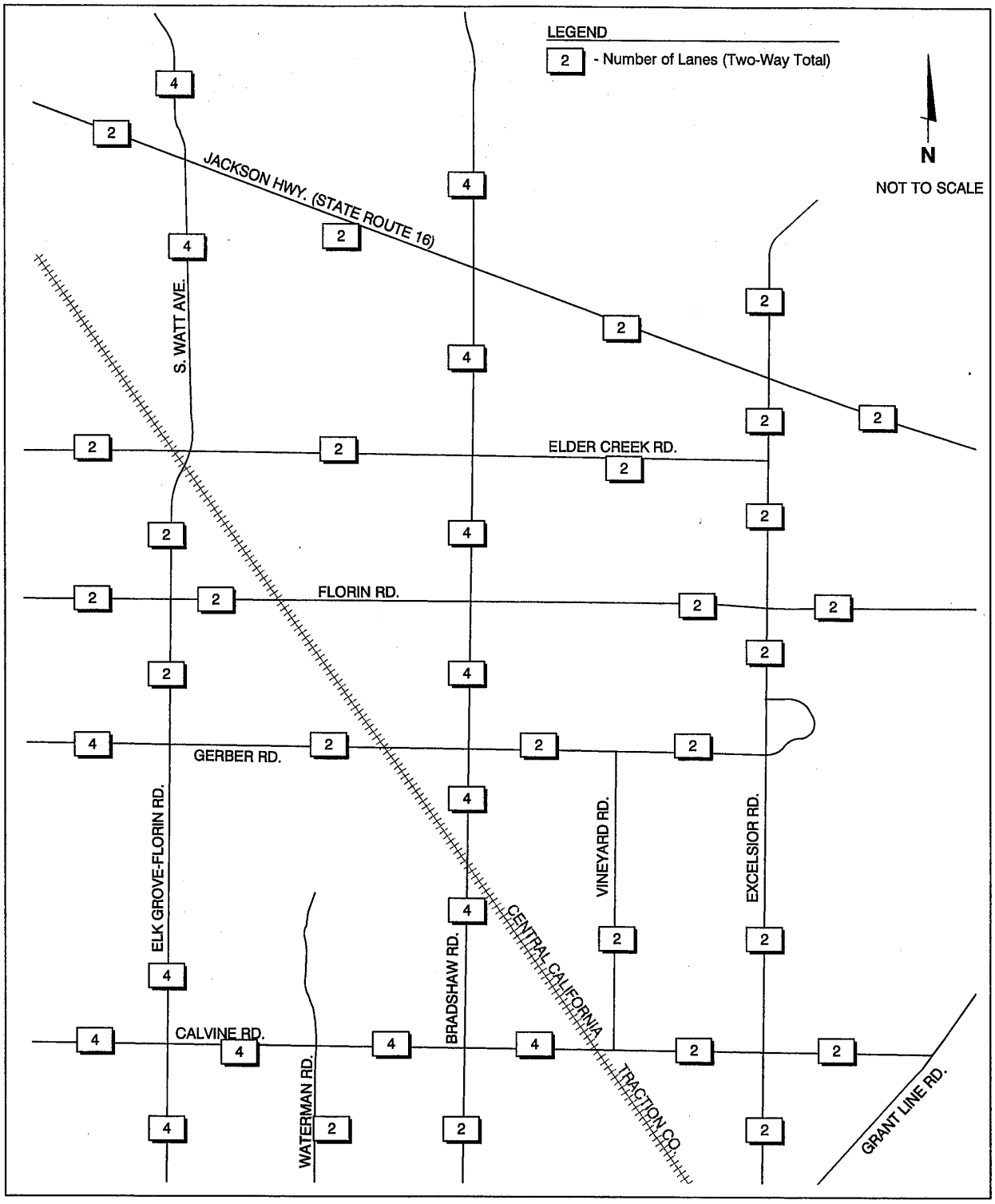


Plate TC -10
Average Daily Traffic Volumes
Year 2005 Without Phase 1B

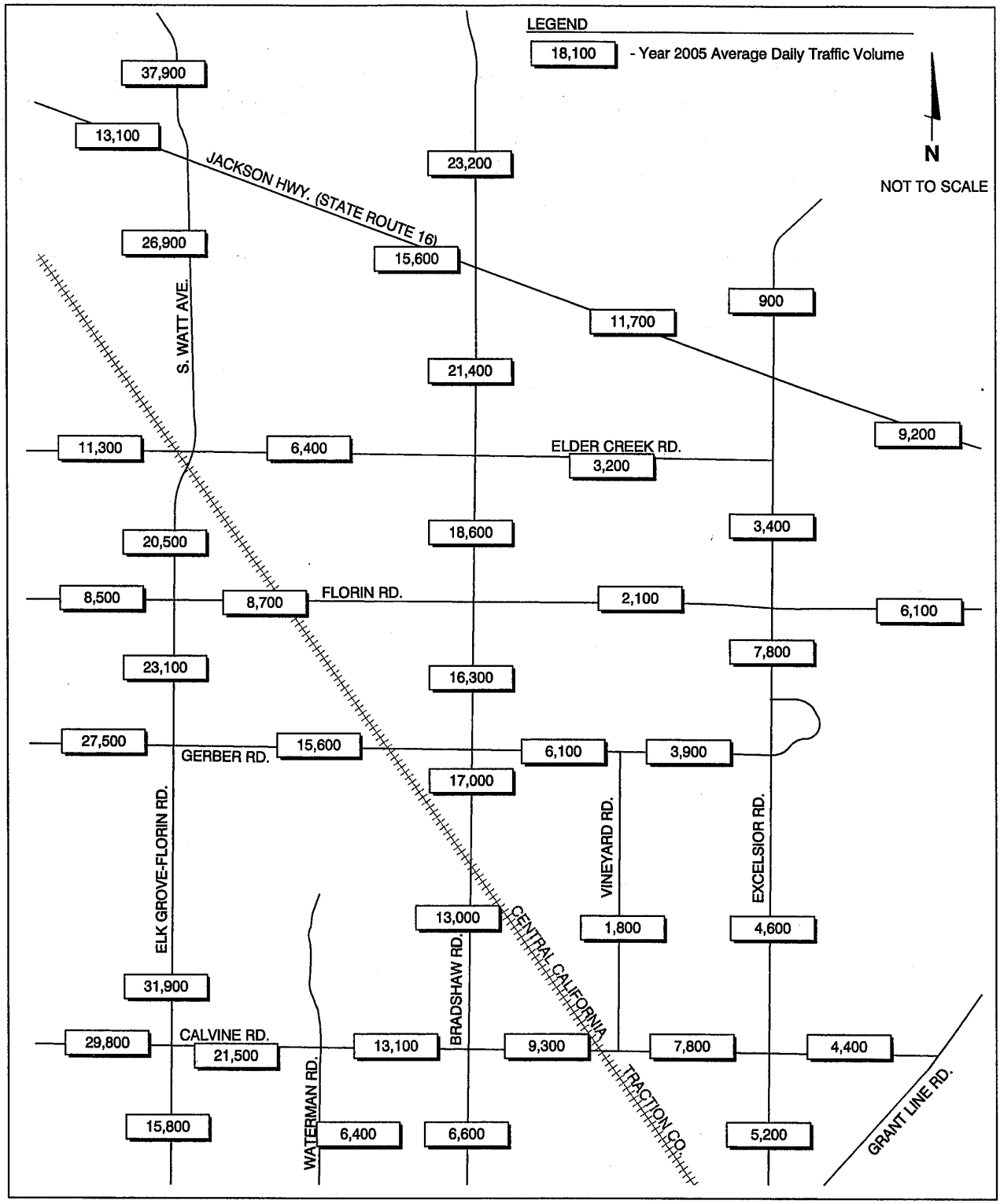


Plate TC -11
Peak Hour Traffic Volumes and Lane Configurations
Year 2005 Without Phase 1B

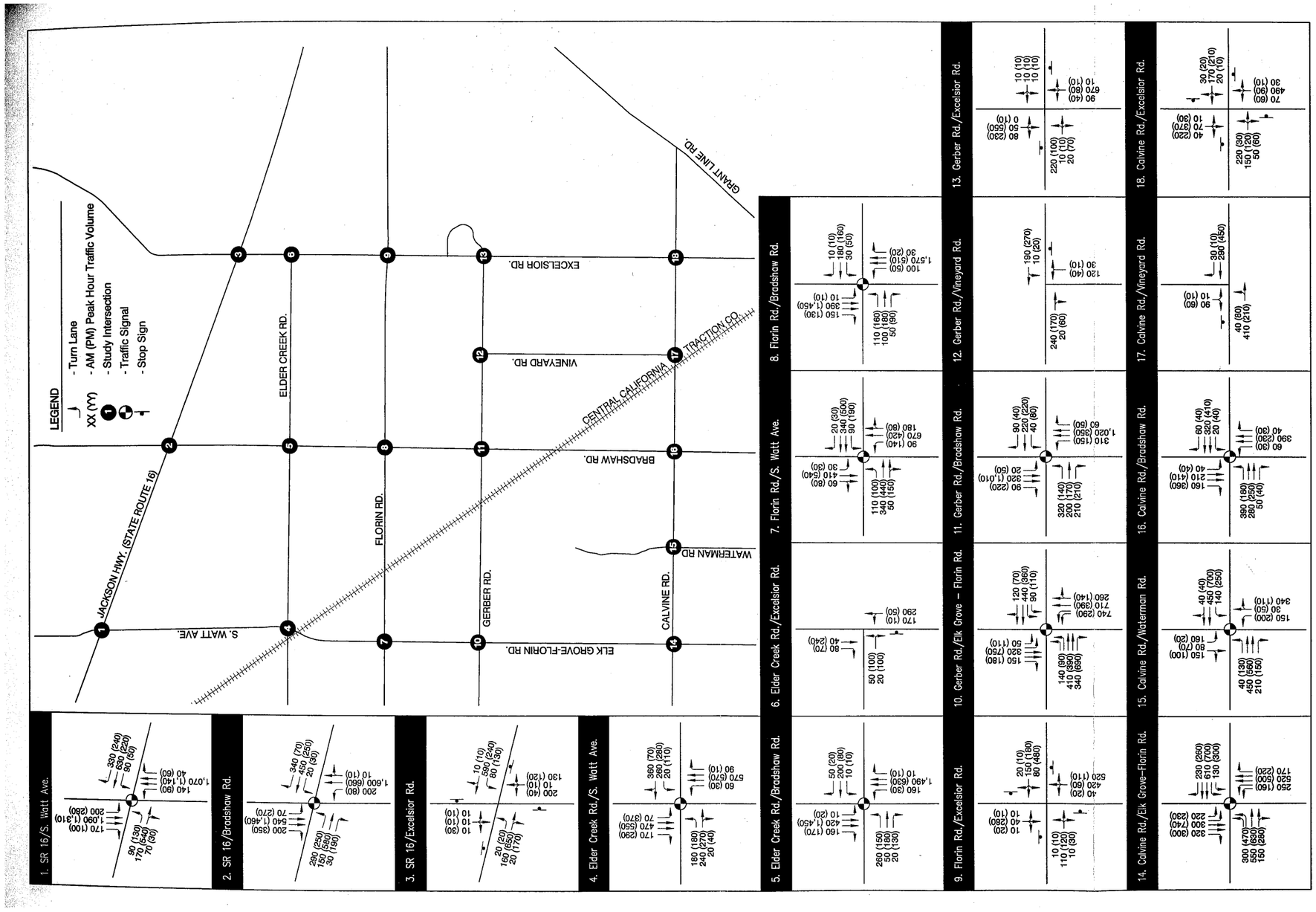


Table 7-9
Roadway Analysis – Year 2005 Conditions Without Phase 1B

Roadway Segment	Year 2005 Conditions		
	Lanes	Volume	LOS
SR 16 – West of S. Watt Ave.	2	13,100	D
SR 16 – S. Watt Ave. to Bradshaw Rd.	2	15,600	E
SR 16 – Bradshaw Rd. to Excelsior Rd.	2	11,700	D
SR 16 – East of Excelsior Rd.	2	9,200	D
Elder Creek Rd. – West of S. Watt Ave.	2	11,300	B
Elder Creek Rd. – S. Watt Ave. to Bradshaw Rd.	2	6,400	A
Elder Creek Rd. – Bradshaw Rd. to Excelsior Rd.	2	3,200	A
Florin Rd. – West of S. Watt Ave.	2	8,500	A
Florin Rd. – S. Watt Ave. to Bradshaw Rd.	2	8,700	A
Florin Rd. – Bradshaw Rd. to Excelsior Rd.	2	2,100	A
Florin Rd. – East of Excelsior Rd.	2	6,100	A
Gerber Rd. – West of Elk Grove-Florin Rd.	4	27,500	C
Gerber Rd. – Elk Grove-Florin Rd. to Bradshaw Rd.	2	15,600	D
Gerber Rd. – Bradshaw Rd. to Vineyard Road	2	6,100	D
Gerber Rd. – Vineyard Rd. to Excelsior Rd.	2	3,900	C
Calvine Rd. – West of Elk Grove-Florin Rd.	4	29,800	D
Calvine Rd. – Elk Grove-Florin Rd. to Waterman Rd.	4	21,500	A
Calvine Rd. – Waterman Rd. to Bradshaw Rd.	4	13,100	A
Calvine Rd. – Bradshaw Rd. to Vineyard Rd.	4	9,300	A
Calvine Rd. – Vineyard Rd. to Excelsior Rd.	2	7,800	A
Calvine Rd. – Excelsior Rd. to Grant Line Rd.	2	4,400	A
S. Watt Avenue – North of SR 16	4	37,900	F
S. Watt Avenue – SR 16 to Elder Creek Rd.	4	26,900	C
S. Watt Avenue – Elder Creek Rd. to Florin Rd.	2	20,500	F
Elk Grove-Florin Rd. – Florin Rd. to Gerber Rd.	2	23,100	F
Elk Grove-Florin Rd. – Gerber Rd. to Calvine Rd.	4	31,900	D
Elk Grove-Florin Rd. – South of Calvine Rd.	4	15,800	A
Waterman Rd. – South of Calvine Rd.	2	6,400	A
Bradshaw Rd. – North of SR 16	4	23,200	B
Bradshaw Rd. – SR 16 to Elder Creek Rd.	4	21,400	B
Bradshaw Rd. – Elder Creek Rd. to Florin Rd.	4	18,600	A
Bradshaw Rd. – Florin Rd. to Gerber Rd.	4	16,300	A
Bradshaw Rd. – Gerber Rd. to Calvine Rd.	4	17,000	A
Bradshaw Rd. – South of Calvine Rd.	2	6,600	A
Vineyard Rd. – Gerber Rd. to Calvine Rd.	2	1,800	A
Excelsior Rd. – North of SR 16	2	900	A
Excelsior Rd. – Elder Creek Rd. to Florin Rd.	2	3,400	C
Excelsior Rd. – Florin Rd. to Gerber Rd.	2	7,800	E
Excelsior Rd. – Gerber Rd. to Calvine Rd.	2	4,600	D
Excelsior Rd. – South of Calvine Rd.	2	5,200	D

Notes: **Bold** – Unacceptable LOS according to County (LOS E) standards.
Source: Sacramento County Traffic Impact Guidelines (July 24, 1997) and Fehr & Peers Associates, 2002.

Table 7-10
Peak Hour Intersection Operations – Year 2005 Conditions Without Phase 1B

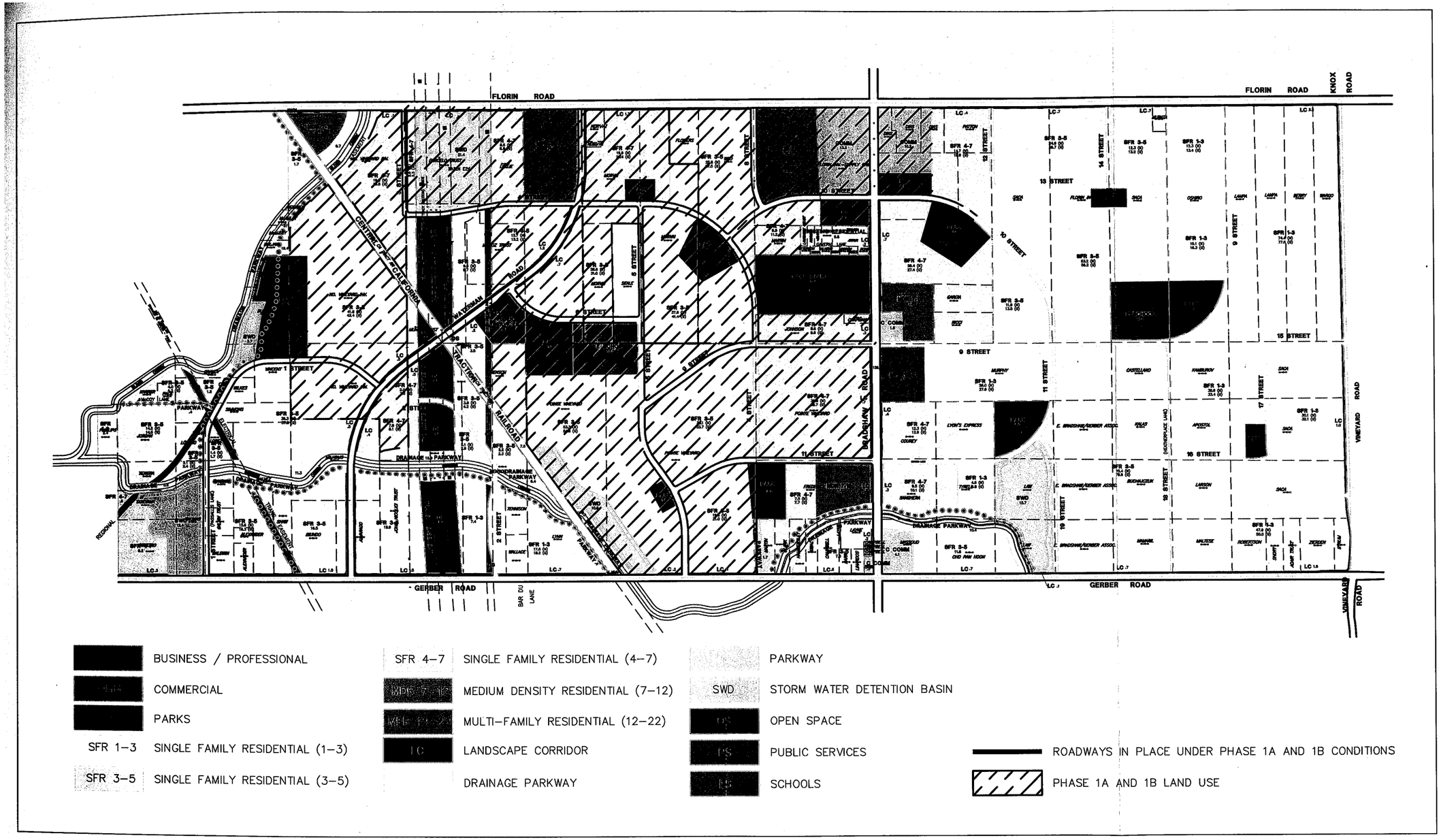
Intersection	Control	AM Peak Hour		PM Peak Hour	
		Delay / V/C	LOS	Delay / V/C	LOS
1. SR 16/S. Watt Ave.	Signal[1]	1.0	E	0.98	E
2. SR 16/Bradshaw Rd.	Signal	**1.08**	F	0.95	E
3. SR 16/Excelsior Rd.	4-Way Stop[2]	28.2	D	15.9	C
4. Elder Creek Rd./S. Watt Ave.	Signal	0.77	C	0.79	C
5. Elder Creek Rd./Bradshaw Rd.	Signal	0.81	D	0.66	B
6. Elder Creek Rd./Excelsior Rd.	2-Way Stop[3]	1.7	A	2.1	A
7. Florin Rd./Elk Grove-Florin Rd.	Signal	0.49	A	0.62	B
8. Florin Rd./Bradshaw Rd.	Signal	0.72	C	0.73	C
9. Florin Rd./Excelsior Rd.	4-Way Stop	**> 45.0**	F	23.5	D
10. Gerber Rd./Elk Grove-Florin Rd.	Signal	0.62	B	0.75	C
11. Gerber Rd./Bradshaw Rd.	Signal	0.71	C	0.68	B
12. Gerber Rd./Vineyard Rd.	2-Way Stop	1.8	A	0.7	A
13. Gerber Rd./Excelsior Rd.	2-Way Stop	**> 45.0**	F	9.9	B
14. Calvine Rd./Elk Grove-Florin Rd.	Signal	0.57	A	0.72	C
15. Calvine Rd./Waterman Rd.	Signal	0.60	A	0.60	A
16. Calvine Rd./Bradshaw Rd.	Signal	0.52	A	0.41	A
17. Calvine Rd./Vineyard Rd.	2-Way Stop	0.7	A	0.9	A
18. Calvine Rd./Excelsior Rd.	4-Way Stop	31.8	E	24.8	D

Notes: **Bold** – Unacceptable LOS according to County (LOS E) standards.
[1] Signal Control- Circular 212 Planning Methodology- Results present volume/capacity ratio and LOS.
[2] 4-Way Stop Control- 1994 HCM Unsignalized Methodology- Results present delay (seconds/vehicle) and LOS.

[3] 2-Way Stop Control- 1994 HCM Unsignalized Methodology- Results present delay (seconds/vehicle) and LOS.

Source: Fehr & Peers Associates, 2002.

Plate TC -12
North Station Land Use Diagram – Phase 1B



LAND USE

As shown in Plate TC -12, Phase 1B (which includes the development of Phase 1A) consists of the following land uses:

- 2,500 residential dwelling units;
- 23.3 acres of commercial;
- 7.1 acres of business/professional;
- 10 acres of schools; and
- 38.3 acres of parks.

The above land uses were added to the 2005 SACMET Regional TDF model based on the number of households and total retail and non-retail employment. The Sacramento Area Council of Governments' (SACOG) employment yield matrix was used to estimate the employment projections for development of Phase 1B.

TRAFFIC VOLUMES

Year 2005 traffic forecasts with Phase 1B were developed by adding the proposed project land uses and circulation system to the 2005 SACMET Regional TDF model. The TDF model was used to generate daily and peak hour traffic volumes for development of Phase 1B. This methodology accounts for 2005 development levels of local and regional land uses outside of the project site. In addition, this methodology accounts for changes in travel patterns with the additional roadways included in the NVSSP. Plate TC -13 and Plate TC -14 display the daily and peak hour traffic volumes, respectively, for Year 2005 conditions with Phase 1B.

Roadway Analysis

The daily traffic volumes displayed in Plate TC -13 were compared to the roadway capacity thresholds presented in Table 7-1 to determine if the addition of Phase 1B trips will cause roadway deficiencies. Table 7-11 summarizes the results of the arterial roadway analysis. As shown, S. Watt Avenue north of SR 16 and between Elder Creek Road and Florin Road and Elk Grove-Florin Road between Florin Road and Gerber Road will continue to operate at LOS F with the addition of project trips. However, the V/C ratio will not increase by 0.05 or more on these roadway segments. Therefore, the addition of Phase 1B trips will not cause a project deficiency.

Plate TC -13
Average Daily Traffic Traffic Volumes
Year 2005 With Phase 1B

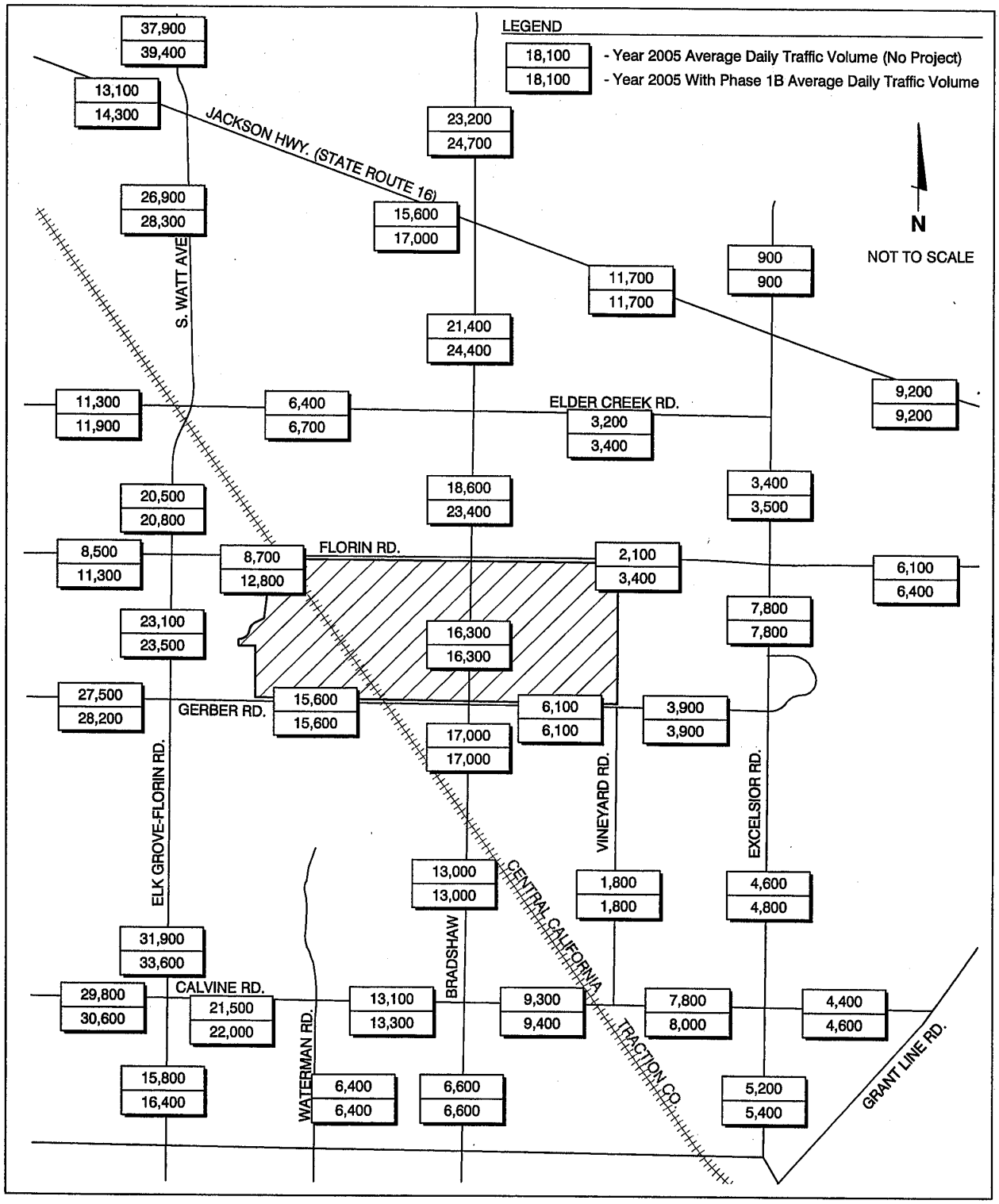


Plate TC -14
Peak Hour Traffic Volumes and Land Configurations
Year 2005 With Phase 1B

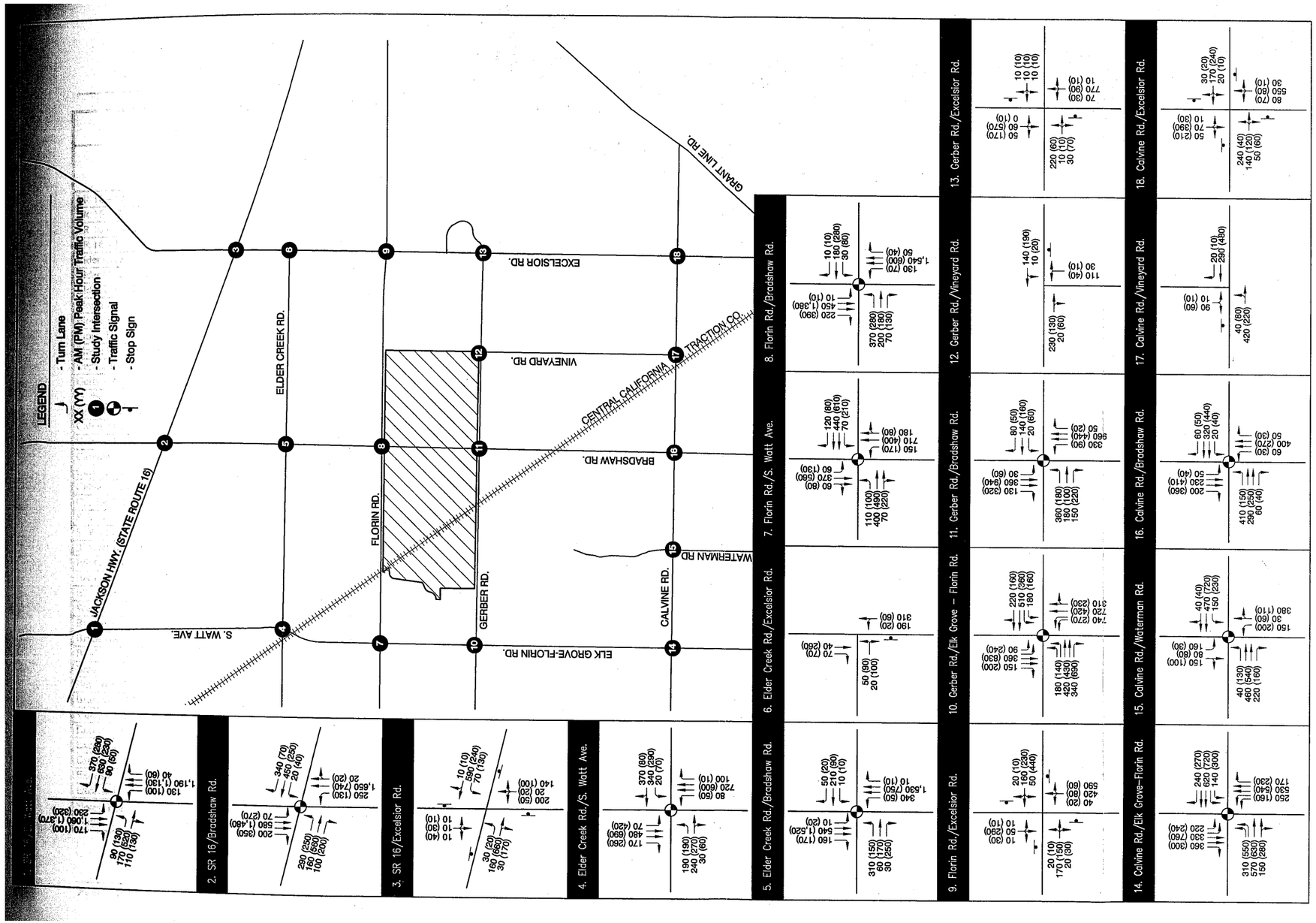


Table 7-11
Roadway Analysis – Year 2005 with Phase 1B

Roadway Segment	Year 2005 Conditions Without Phase 1B			Year 2005 Conditions With Phase 1B		
	Lanes	Volume	LOS	Lanes	Volume	LOS
SR 16 – West of S. Watt Ave.	2	13,100	D	2	14,300	E
SR 16 – S. Watt Ave. to Bradshaw Rd.	2	15,600	E	2	17,000	E
SR 16 – Bradshaw Rd. to Excelsior Rd.	2	11,700	D	2	11,700	D
SR 16 – East of Excelsior Rd.	2	9,200	D	2	9,200	D
Elder Creek Rd. – West of S. Watt Ave.	2	11,300	B	2	11,900	B
Elder Creek Rd. – S. Watt Ave. to Bradshaw Rd.	2	6,400	A	2	6,700	A
Elder Creek Rd. – Bradshaw Rd. to Excelsior Rd.	2	3,200	A	2	3,400	A
Florin Rd. – West of S. Watt Ave.	2	8,500	A	2	11,300	B
Florin Rd. – S. Watt Ave. to Bradshaw Rd.	2	8,700	A	2	12,800	C
Florin Rd. – Bradshaw Rd. to Excelsior Rd.	2	2,100	A	2	3,400	A
Florin Rd. – East of Excelsior Rd.	2	6,100	A	2	6,400	A
Gerber Rd. – West of Elk Grove-Florin Rd.	4	27,500	C	4	28,200	C
Gerber Rd. – Elk Grove-Florin Rd. to Bradshaw Rd.	2	15,600	D	2	15,600	D
Gerber Rd. – Bradshaw Rd. to Vineyard Rd.	2	6,100	D	2	6,100	D
Gerber Rd. – Vineyard Rd. to Excelsior Rd.	2	3,900	C	2	3,900	C
Calvine Rd. – West of Elk Grove-Florin Rd.	4	29,800	D	4	30,600	D
Calvine Rd. – Elk Grove-Florin Rd. to Waterman Rd.	4	21,500	A	4	22,000	B
Calvine Rd. – Waterman Rd. to Bradshaw Rd.	4	13,100	A	4	13,300	A
Calvine Rd. – Bradshaw Rd. to Vineyard Rd.	4	9,300	A	4	9,400	A
Calvine Rd. – Vineyard Rd. to Excelsior Rd.	2	7,800	A	2	8,000	A
Calvine Rd. – Excelsior Rd. to Grant Line Rd.	2	4,400	A	2	4,600	A
S. Watt Avenue – North of SR 16	4	37,900	F	4	39,400	F
S. Watt Avenue – SR 16 to Elder Creek Rd.	4	26,900	C	4	28,300	C
S. Watt Avenue – Elder Creek Rd. to Florin Rd.	2	20,500	F	2	20,800	F
Elk Grove-Florin Rd. – Florin Rd. to Gerber Rd.	2	23,100	F	2	23,500	F
Elk Grove-Florin Rd. – Gerber Rd. to Calvine Rd.	4	31,900	D	4	33,600	E
Elk Grove-Florin Rd. – South of Calvine Rd.	4	15,800	A	4	16,400	A
Waterman Rd. – South of Calvine Rd.	2	6,400	A	2	6,400	A
Bradshaw Rd. – North of SR 16	4	23,200	B	4	24,700	B
Bradshaw Rd. – SR 16 to Elder Creek Rd.	4	21,400	B	4	24,400	C
Bradshaw Rd. – Elder Creek Rd. to Florin Rd.	4	18,600	A	4	23,400	B
Bradshaw Rd. – Florin Rd. to Gerber Rd.	4	16,300	A	4	16,300	A
Bradshaw Rd. – Gerber Rd. to Calvine Rd.	4	17,000	A	4	17,000	A
Bradshaw Rd. – South of Calvine Rd.	2	6,600	A	2	6,600	A
Vineyard Rd. – Gerber Rd. to Calvine Rd.	2	1,800	A	2	1,800	A
Excelsior Rd. – North of SR 16	2	900	A	2	900	A
Excelsior Rd. – Elder Creek Rd. to Florin Rd.	2	3,400	C	2	3,500	C
Excelsior Rd. – Florin Rd. to Gerber Rd.	2	7,800	E	2	7,800	E
Excelsior Rd. – Gerber Rd. to Calvine Rd.	2	4,600	D	2	4,800	D
Excelsior Rd. – South of Calvine Rd.	2	5,200	D	2	5,400	D

Notes: **Bold** – Unacceptable LOS according to County (LOS E) standards.
Source: Sacramento County Traffic Impact Guidelines (July 24, 1997) and Fehr & Peers Associates, 2002.

INTERSECTION ANALYSIS

The a.m. and p.m. peak hour intersection turning movements and lane configurations shown on Plate TC -14 were used to calculate the levels of service at each study intersection for Year 2005 conditions with Phase 1B. The level of service at each study intersection is presented in Table 7-12.

Table 7-12
Peak Hour Intersection Operations – Year 2005 with Phase 1B

Intersection	Control	Year 2005 Without Phase 1B				Year 2005 With Phase 1B			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Delay / V/C	LOS	Delay / V/C	LOS	Delay / V/C	LOS	Delay / V/C	LOS
1. SR 16/S. Watt Ave.	Signal[1]	1.00	E	0.98	E	**1.03**	F	**1.06**	F
2. SR 16/Bradshaw Rd.	Signal	**1.08**	F	0.95	E	**1.10**	F	0.98	E
3. SR 16/Excelsior Rd.	4-Way Stop[2]	28.2	D	15.9	C	29.1	D	19.2	C
4. Elder Creek Rd./S. Watt Ave.	Signal	0.77	C	0.79	C	0.89	D	0.85	D
5. Elder Creek Rd./Bradshaw Rd.	Signal	0.81	D	0.66	B	0.86	D	0.70	B
6. Elder Creek Rd./Excelsior Rd.	2-Way Stop[3]	1.7	A	2.1	A	1.7	A	2.0	A
7. Florin Rd./Elk Grove-Florin Rd.	Signal	0.49	A	0.62	B	0.56	A	0.70	B
8. Florin Rd./Bradshaw Rd.	Signal	0.72	C	0.73	C	0.89	D	0.88	D
9. Florin Rd./Excelsior Rd.	4-Way Stop	**> 45.0**	F	23.5	D	**> 45.0**	F	29.8	D
10. Gerber Rd./Elk Grove-Florin Rd.	Signal	0.62	B	0.75	C	0.70	B	0.80	C
11. Gerber Rd./Bradshaw Rd.	Signal	0.71	C	0.68	B	0.67	B	0.60	B
12. Gerber Rd./Vineyard Rd.	2-Way Stop	1.8	A	0.7	A	1.7	A	0.8	A
13. Gerber Rd./Excelsior Rd.	2-Way Stop	**> 45.0**	F	9.9	B	**> 45.0**	F	8.8	B
14. Calvine Rd./Elk Grove-Florin Rd.	Signal	0.57	A	0.72	C	0.64	B	0.78	C
15. Calvine Rd./Waterman Rd.	Signal	0.60	A	0.60	A	0.63	B	0.59	A
16. Calvine Rd./Bradshaw Rd.[4]	Signal	0.52	A	0.41	A	0.55	A	0.40	A
17. Calvine Rd./Vineyard Rd.	2-Way Stop	0.7	A	0.9	A	0.7	A	0.9	A
18. Calvine Rd./Excelsior Rd.	4-Way Stop	31.8	E	24.8	D	41.9	E	33.9	E

Notes: **Bold** – Unacceptable LOS according to County (LOS E) standards.
[1] Signal Control- Circular 212 Planning Methodology- Results present volume/capacity ratio and LOS.
[2] 4-Way Stop Control- 1994 HCM Unsignalized Methodology- Results present delay (seconds/vehicle) and LOS.

[3] 2-Way Stop Control- 1994 HCM Unsignalized Methodology- Results present delay (seconds/vehicle) and LOS.

[4] Assumed signal control, consistent with widening of Bradshaw Road (two to four lanes - Calvine Road to SR 16).

Source: Fehr & Peers Associates, 2002.

The addition of Phase 1B trips will cause deficiencies at the following intersections:

- SR 16/S. Watt Avenue – The addition of project trips will degrade intersection operations from LOS E to LOS F during the p.m. peak hour;
- Florin Road/Excelsior Road – The addition of project trips will increase the delay by five seconds during the a.m. peak hour; and

- Gerber Road/Excelsior Road – The addition of project trips will increase the delay by more than five seconds during the a.m. peak hour.

PROJECT IMPACTS

Based on the roadway and intersection analysis, the addition of Phase 1B trips will cause or contribute to deficiencies at the following study locations under Year 2005 conditions. These impacts are considered significant.

STUDY ROADWAYS

- None.

STUDY INTERSECTIONS

- SR 16/S. Watt Avenue;
- Florin Road/Excelsior Road; and
- Gerber Road/Excelsior Road.

MITIGATION MEASURES FOR PHASE 1B IN 2005

The following improvements will eliminate deficiencies caused by Phase 1B in Year 2005, and reduce impacts to less-than-significant.

STUDY INTERSECTIONS MITIGATION MEASURES

TC-8. SR 16/S. Watt Avenue – Widening the eastbound and westbound approaches to include an exclusive left-turn lane, a through lane, and a shared through/right-turn lane will improve operations to LOS E and D during the a.m. and p.m. peak hours, respectively.

Subsequent to the publishing of the traffic analysis, the County of Sacramento moved forward a project to widen South Watt Avenue from State Route 16 to Kiefer Boulevard to five lanes. The project includes the State Route 16 and South Watt Avenue intersection. The intersection improvement includes an additional left turn lane and through lane on the southbound approach and one new left turn lane and two new through lanes on the northbound approach. The improvement is planned to be completed by 2006. With those improvements and Mitigation Measure TC-8, an additional through lane on the eastbound and westbound approaches, the intersection level of service3 would improve to LOS C in both the a.m. and p.m. peak hours, with build out of Phase 1A and 1B of the North Vineyard Station Specific Plan.

TC-9. Florin Road/Excelsior Road – Installing a traffic signal and widening each approach to include an exclusive left-turn lane and a shared through/right-

turn lane will improve operations to LOS C and B during the a.m. and p.m. peak hours, respectively.

TC-10. Gerber Road/Excelsior Road – Installing a traffic signal and widening each approach to include an exclusive left-turn lane and a shared through/right-turn lane will improve operations to LOS B and A during the a.m. and p.m. peak hours, respectively.

YEAR 2010 CONDITIONS

Year 2010 levels of development within the NVVSP were analyzed under Year 2010 conditions to determine if development of the project, in addition to background growth, will adversely affect the planned roadway system in the Year 2010.

YEAR 2010 WITHOUT PROJECT CONDITIONS

The following discusses the roadway network and traffic operations under Year 2010 conditions without the implementation of the proposed project.

ROADWAY NETWORK

The following roadway improvements are planned to occur by the Year 2010:

- S. Watt Avenue/Elk Grove-Florin Road will be widened to four lanes from Gerber Road to Elder Creek Road;
- SR 16 will be widened to four lanes from S. Watt Avenue to Excelsior Road; and
- Excelsior Road will be extended through the Independence at Mather development to Douglas Road.

In addition, the roadway improvements recommended under Year 2002 with Phase 1A and Year 2005 with Phase 1B conditions were assumed in place in Year 2010. Plate TC -15 displays the planned number of lanes on each roadway segment in Year 2010.

TRAFFIC VOLUMES

The 1999 version of the SACMET Regional TDF model was used to develop Year 2010 daily traffic volumes. Since the SACMET model does not have a Year 2010 scenario, the Year 2005 and 2015 traffic models were used to develop Year 2010 traffic forecasts. The Year 2005 and 2015 TDF models were updated to include the planned roadway improvements and land uses within the project site remained at Year 2002 levels of development. Plate TC -16 displays the Year 2010 average daily traffic volumes within the study area.

Plate TC -15
Year 2010 Roadway System

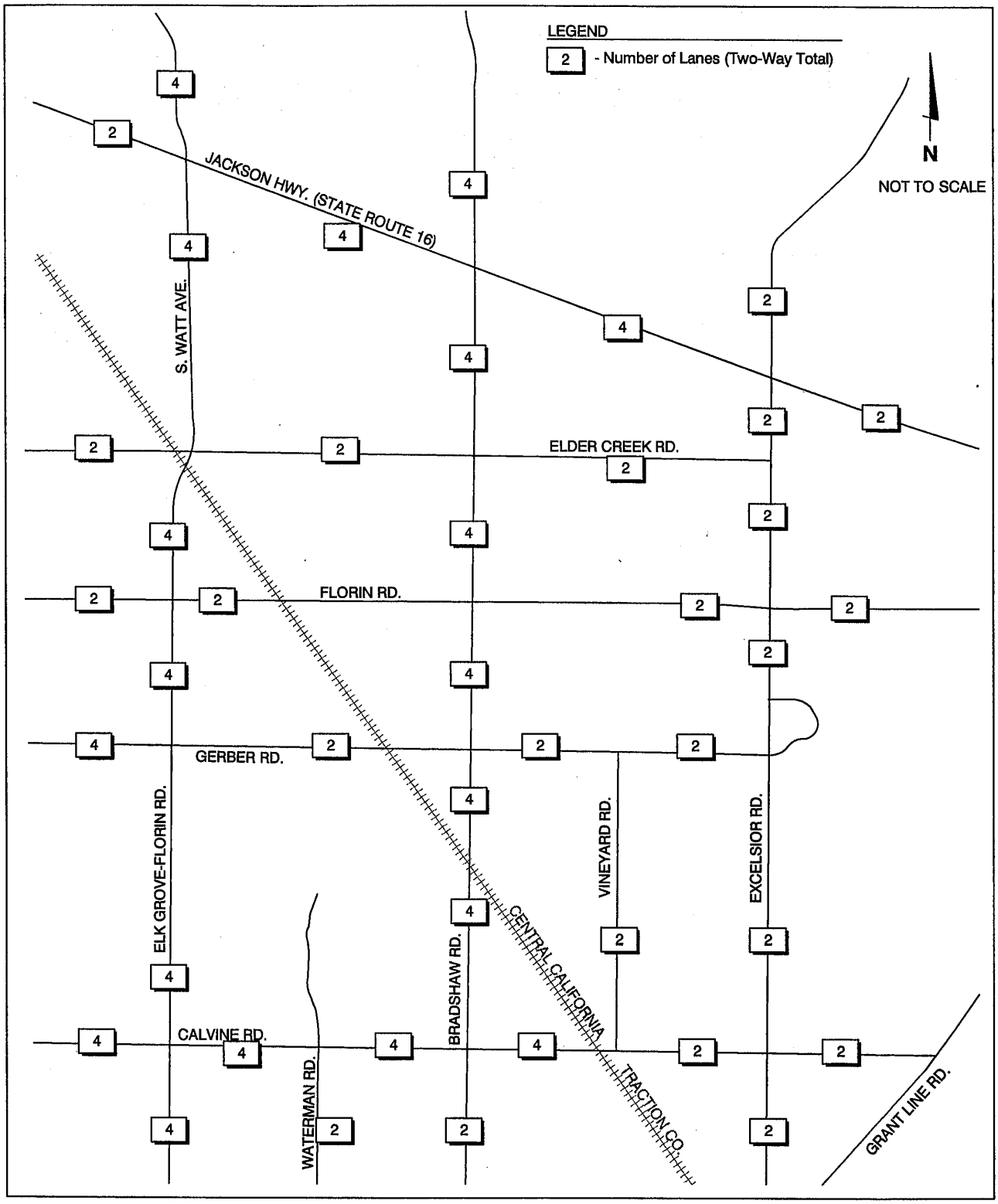
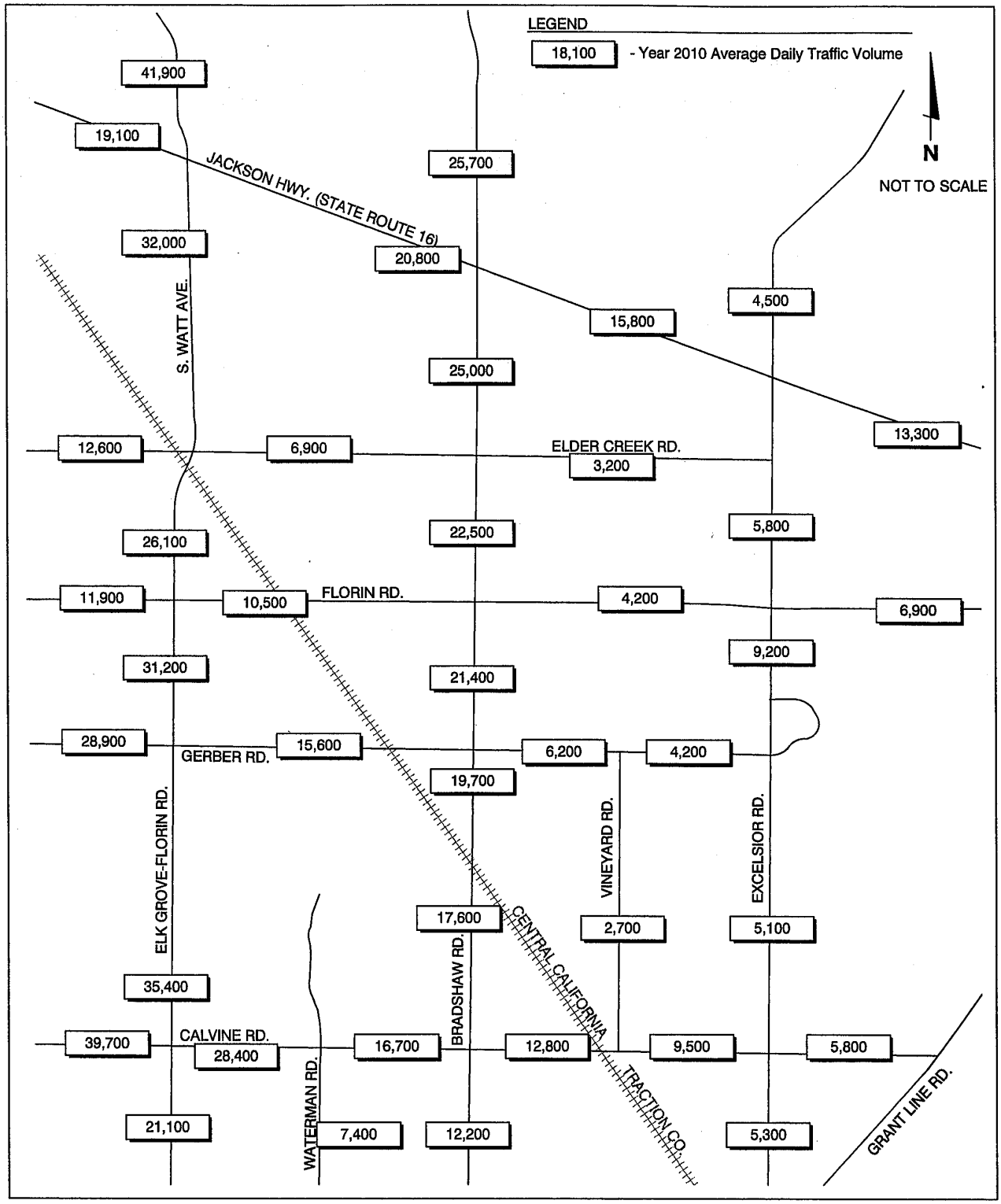


Plate TC -16
Average Daily Traffic Volumes
Year 2010 Without NVSSP Development



ROADWAY ANALYSIS

The daily volumes shown on Plate TC -16 were compared to the roadway capacity thresholds presented in Table 7-1. Table 7-13 summarizes the results of the arterial roadway analysis. The study roadways will operate acceptably in Year 2010 (without NVSSP development) except for the following:

- Calvine Road (West of Elk Grove-Florin Road); and
- S. Watt Avenue (North of SR 16).

Year 2010 With NVSSP Development Conditions

Traffic operations of the study roadways were analyzed under Year 2010 conditions with the addition of trips generated by Year 2010 levels of development within the NVSSP.

LAND USE

Year 2010 levels of development within the NVSSP assume 50 percent development between Phase 1B (Year 2005) and buildout of the NVSSP (Year 2015) conditions. Consequently, Year 2010 levels of development within the NVSSP consists of the following land uses:

- 4,116 residential dwelling units;
- 26.6 acres of commercial;
- 7.1 acres of business/professional;
- 9.9 acre golf course;
- 15 acres of schools; and
- 50.9 acres of parks.

The above land uses were added to the 2005 and 2015 SACMET Regional TDF models based on the number of households and total retail and non-retail employment. The SACOG employment yield matrix was used to estimate the employment projections for Year 2010 levels of development within the NVSSP.

Table 7-13
Roadway Analysis – Year 2010 Conditions Without NVSSP Development

Roadway Segment	Year 2010 Conditions		
	Lanes	Volume	LOS
SR 16 – West of S. Watt Ave.	2	19,100	E
SR 16 – S. Watt Ave. to Bradshaw Rd.	4	20,800	A
SR 16 – Bradshaw Rd. to Excelsior Rd.	4	15,800	A
SR 16 – East of Excelsior Rd.	2	13,300	D
Elder Creek Rd. – West of S. Watt Ave.	2	12,600	B
Elder Creek Rd. – S. Watt Ave. to Bradshaw Rd.	2	6,900	A
Elder Creek Rd. – Bradshaw Rd. to Excelsior Rd.	2	3,200	A
Florin Rd. – West of S. Watt Ave.	2	11,900	B
Florin Rd. – S. Watt Ave. to Bradshaw Rd.	2	10,500	A
Florin Rd. – Bradshaw Rd. to Excelsior Rd.	2	4,200	A
Florin Rd. – East of Excelsior Rd.	2	6,900	A
Gerber Rd. – West of Elk Grove-Florin Rd.	4	28,900	D
Gerber Rd. – Elk Grove-Florin Rd. to Bradshaw Rd.	2	15,600	D
Gerber Rd. – Bradshaw Rd. to Vineyard Road	2	6,200	D
Gerber Rd. – Vineyard Rd. to Excelsior Rd.	2	4,200	C
Calvine Rd. – West of Elk Grove-Florin Rd.	4	39,700	F
Calvine Rd. – Elk Grove-Florin Rd. to Waterman Rd.	4	28,400	C
Calvine Rd. – Waterman Rd. to Bradshaw Rd.	4	16,700	A
Calvine Rd. – Bradshaw Rd. to Vineyard Rd.	4	12,800	A
Calvine Rd. – Vineyard Rd. to Excelsior Rd.	2	9,500	A
Calvine Rd. – Excelsior Rd. to Grant Line Rd.	2	5,800	A
S. Watt Avenue – North of SR 16	4	41,900	F
S. Watt Avenue – SR 16 to Elder Creek Rd.	4	32,000	D
S. Watt Avenue – Elder Creek Rd. to Florin Rd.	4	26,100	C
Elk Grove-Florin Rd. – Florin Rd. to Gerber Rd.	4	31,200	D
Elk Grove-Florin Rd. – Gerber Rd. to Calvine Rd.	4	35,400	E
Elk Grove-Florin Rd. – South of Calvine Rd.	4	21,100	A
Waterman Rd. – South of Calvine Rd.	2	7,400	A
Bradshaw Rd. – North of SR 16	4	25,700	C
Bradshaw Rd. – SR 16 to Elder Creek Rd.	4	25,000	B
Bradshaw Rd. – Elder Creek Rd. to Florin Rd.	4	22,500	B
Bradshaw Rd. – Florin Rd. to Gerber Rd.	4	21,400	A
Bradshaw Rd. – Gerber Rd. to Calvine Rd.	4	19,700	A
Bradshaw Rd. – South of Calvine Rd.	2	12,200	B
Vineyard Rd. – Gerber Rd. to Calvine Rd.	2	2,700	C
Excelsior Rd. – North of SR 16	2	4,500	D
Excelsior Rd. – Elder Creek Rd. to Florin Rd.	2	5,800	D
Excelsior Rd. – Florin Rd. to Gerber Rd.	2	9,200	E
Excelsior Rd. – Gerber Rd. to Calvine Rd.	2	5,100	D
Excelsior Rd. – South of Calvine Rd.	2	5,300	D

Notes: **Bold** – Unacceptable LOS according to County (LOS E) standards.
Source: Sacramento County Traffic Impact Guidelines (July 24, 1997) and Fehr & Peers Associates, 2002.

TRAFFIC VOLUMES

Year 2010 traffic forecasts with 2010 levels of development within the NVSSP were developed by adding the proposed project land uses and circulation system to the 2005 and 2015 SACMET Regional TDF models. The models were used to generate daily traffic volumes for Year 2005 and 2015 conditions with 2010 levels of development

within the NVSSP. Year 2010 traffic forecasts were derived from the incremental growth between Year 2005 and 2015. This methodology takes into account the buildout of local and regional land uses outside of the project site under Year 2010 conditions. In addition, this methodology accounts for changes in travel patterns with the planned 2005 and 2015 roadway systems and with the additional roadways included in the NVSSP. Plate TC -17 displays the daily traffic volumes for Year 2010 conditions with Year 2010 levels of development within the NVSSP.
~~Roadway Analysis~~

PROJECT IMPACTS

The daily volumes shown on Plate TC -17 were compared to the roadway capacity thresholds presented in Table 7-1. Table 7-14 summarizes the results of the arterial roadway analysis. The addition of project trips will result in a deficiency at the following study roadway segments. These impacts are considered significant.

- S. Watt Avenue (North of SR 16); and
- Elk Grove-Florin Road (Gerber Road to Calvine Road).

MITIGATION MEASURES FOR 2010 CONDITIONS (50% BUILDOUT)

The improvements discussed below will improve operations to an acceptable level in Year 2010~~"~~, and reduce impacts to less-than-significant.

TC-11. S. Watt Avenue (North of SR 16) – Widening this segment from four to six lanes will improve operations to LOS D.

This improvement is also recommended under Year 2015 conditions with buildout of the NVSSP.

TC-12. Elk Grove-Florin Road (Gerber Road to Calvine Road) – Widening this segment from four to six lanes will improve operations to LOS B.

Plate TC -17
Average Daily Traffic Volumes
Year 2010 With 2010 NVSSP Development

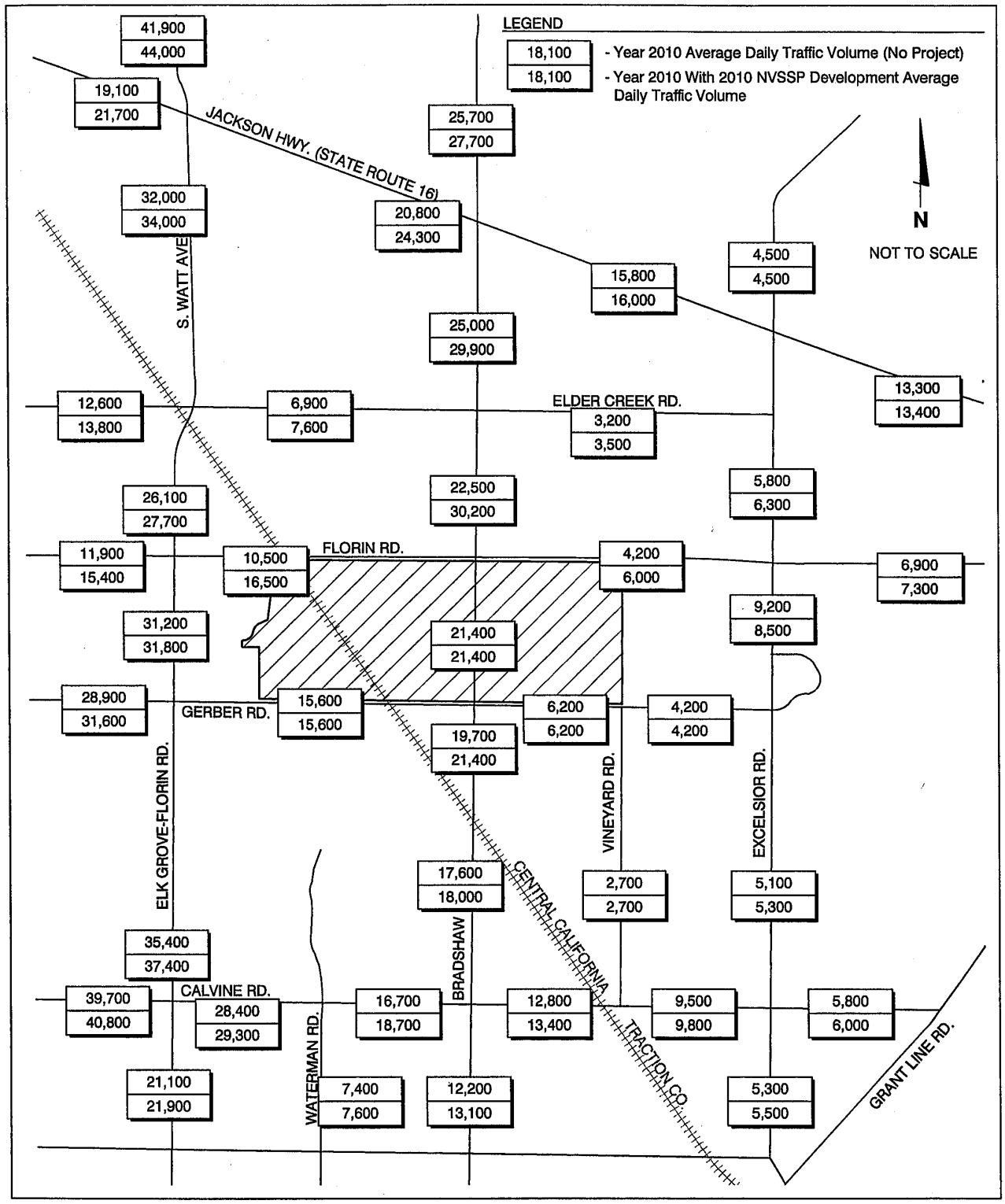


Table 7-14
Roadway Analysis – Year 2010 with 2010 Levels of NVSSP Development

Roadway Segment	Year 2010 Conditions Without Project			Year 2010 Conditions With Project		
	Lanes	Volume	LOS	Lanes	Volume	LOS
SR 16 – West of S. Watt Ave.	2	19,100	E	2	21,700	E
SR 16 – S. Watt Ave. to Bradshaw Rd.	4	20,800	A	4	24,300	B
SR 16 – Bradshaw Rd. to Excelsior Rd.	4	15,800	A	4	16,000	A
SR 16 – East of Excelsior Rd.	2	13,300	D	2	13,400	D
Elder Creek Rd. – West of S. Watt Ave.	2	12,600	B	2	13,800	C
Elder Creek Rd. – S. Watt Ave. to Bradshaw Rd.	2	6,900	A	2	7,600	A
Elder Creek Rd. – Bradshaw Rd. to Excelsior Rd.	2	3,200	A	2	3,500	A
Florin Rd. – West of S. Watt Ave.	2	11,900	B	2	15,400	D
Florin Rd. – S. Watt Ave. to Bradshaw Rd.	2	10,500	A	2	16,500	E
Florin Rd. – Bradshaw Rd. to Excelsior Rd.	2	4,200	A	2	6,000	A
Florin Rd. – East of Excelsior Rd.	2	6,900	A	2	7,300	A
Gerber Rd. – West of Elk Grove-Florin Rd.	4	28,900	D	4	31,600	D
Gerber Rd. – Elk Grove-Florin Rd. to Bradshaw Rd.	2	15,600	D	2	15,600	D
Gerber Rd. – Bradshaw Rd. to Vineyard Road	2	6,200	D	2	6,200	D
Gerber Rd. – Vineyard Rd. to Excelsior Rd.	2	4,200	C	2	4,200	C
Calvine Rd. – West of Elk Grove-Florin Rd.	4	39,700	F	4	40,800	F
Calvine Rd. – Elk Grove-Florin Rd. to Waterman Rd.	4	28,400	C	4	29,300	D
Calvine Rd. – Waterman Rd. to Bradshaw Rd.	4	16,700	A	4	18,700	A
Calvine Rd. – Bradshaw Rd. to Vineyard Rd.	4	12,800	A	4	13,400	A
Calvine Rd. – Vineyard Rd. to Excelsior Rd.	2	9,500	A	2	9,800	A
Calvine Rd. – Excelsior Rd. to Grant Line Rd.	2	5,800	A	2	6,000	A
S. Watt Avenue – North of SR 16	4	41,900	F	4	44,000	F
S. Watt Avenue – SR 16 to Elder Creek Rd.	4	32,000	D	4	34,000	E
S. Watt Avenue – Elder Creek Rd. to Florin Rd.	4	26,100	C	4	27,700	C
Elk Grove-Florin Rd. – Florin Rd. to Gerber Rd.	4	31,200	D	4	31,800	D
Elk Grove-Florin Rd. – Gerber Rd. to Calvine Rd.	4	35,400	E	4	37,400	F
Elk Grove-Florin Rd. – South of Calvine Rd.	4	21,100	A	4	21,900	B
Waterman Rd. – South of Calvine Rd.	2	7,400	A	2	7,600	A
Bradshaw Rd. – North of SR 16	4	25,700	C	4	27,700	C
Bradshaw Rd. – SR 16 to Elder Creek Rd.	4	25,000	B	4	29,900	D
Bradshaw Rd. – Elder Creek Rd. to Florin Rd.	4	22,500	B	4	30,200	D
Bradshaw Rd. – Florin Rd. to Gerber Rd.	4	21,400	A	4	21,400	A
Bradshaw Rd. – Gerber Rd. to Calvine Rd.	4	19,700	A	4	21,400	A
Bradshaw Rd. – South of Calvine Rd.	2	12,200	B	2	13,100	C
Vineyard Rd. – Gerber Rd. to Calvine Rd.	2	2,700	C	2	2,700	C
Excelsior Rd. – North of SR 16	2	4,500	D	2	4,500	D
Excelsior Rd. – Elder Creek Rd. to Florin Rd.	2	5,800	D	2	6,300	D
Excelsior Rd. – Florin Rd. to Gerber Rd.	2	9,200	E	2	8,500	E
Excelsior Rd. – Gerber Rd. to Calvine Rd.	2	5,100	D	2	5,300	D
Excelsior Rd. – South of Calvine Rd.	2	5,300	D	2	5,500	D

Notes: **Bold** – Unacceptable LOS according to County (LOS E) standards.
Source: Sacramento County Traffic Impact Guidelines (July 24, 1997) and Fehr & Peers Associates, 2002.

CUMULATIVE (YEAR 2015) CONDITIONS

Buildout of the NVSSP was analyzed under cumulative (Year 2015) conditions to determine if full implementation of the project, in addition to cumulative background growth, will adversely affect the planned roadway system in the Year 2015.

YEAR 2015 WITHOUT PROJECT CONDITIONS

The following discusses the roadway network and traffic operations under cumulative (Year 2015) conditions without the implementation of the proposed project.

ROADWAY NETWORK

The following roadway improvements are planned to occur by the Year 2015:

- SR 16 will be widened to four lanes west of S. Watt Avenue; and
- Calvine Road will be widened to six lanes from SR 99 to Bradshaw Road and to four lanes from Bradshaw Road to Vineyard Road.

In addition, the roadway improvements recommended under Year 2002 with Phase 1A and Year 2005 with Phase 1B conditions were assumed in place in Year 2015 (note that improvements recommended in Year 2010 were not assumed in place by 2015). Plate TC -18 displays the planned number of lanes on each roadway segment under cumulative conditions. In addition, the intersections at SR 16/Excelsior Road, Elder Creek Road/S. Watt Avenue, and Calvine Road/Vineyard Road are assumed to be signalized under cumulative conditions.

TRAFFIC VOLUMES

The 1999 version of the SACMET Regional Travel Demand Forecasting (TDF) model was used to develop cumulative daily and peak hour traffic volumes. The Year 2015 model was updated to include the planned roadway improvements listed above. Land uses within the project site remained at Year 2001 levels of development. Plate TC -19 and Plate TC -20 display the cumulative daily and a.m. and p.m. peak hour traffic volumes, respectively. Sacramento County Transportation Division staff approved the roadway network and land use assumptions prior to the development of Year 2015 “No Project” forecasts.

Plate TC -18
Year 2015 Roadway System

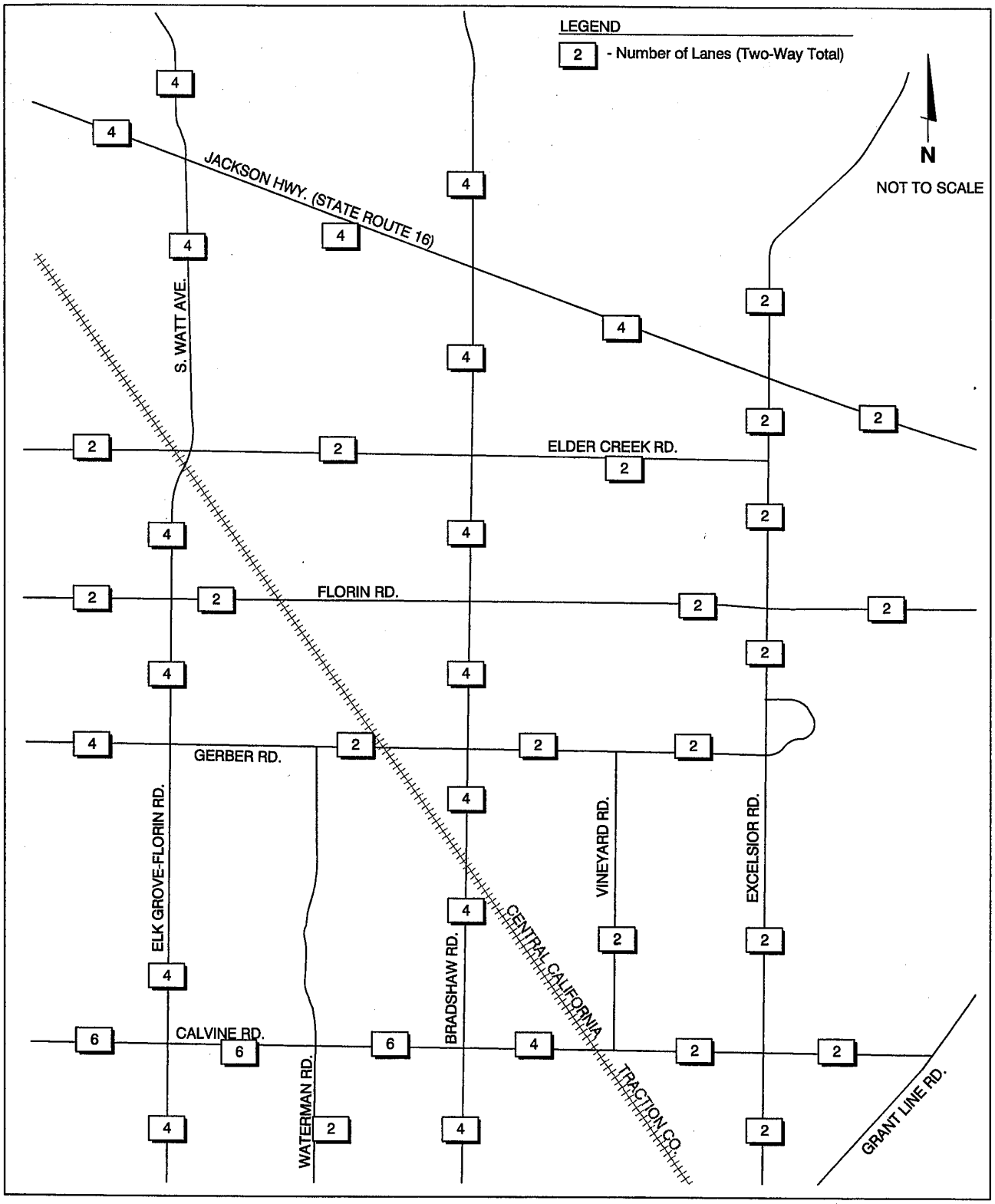


Plate TC -19
Average Daily Traffic Volumes
Year 2015 Without NVSSP

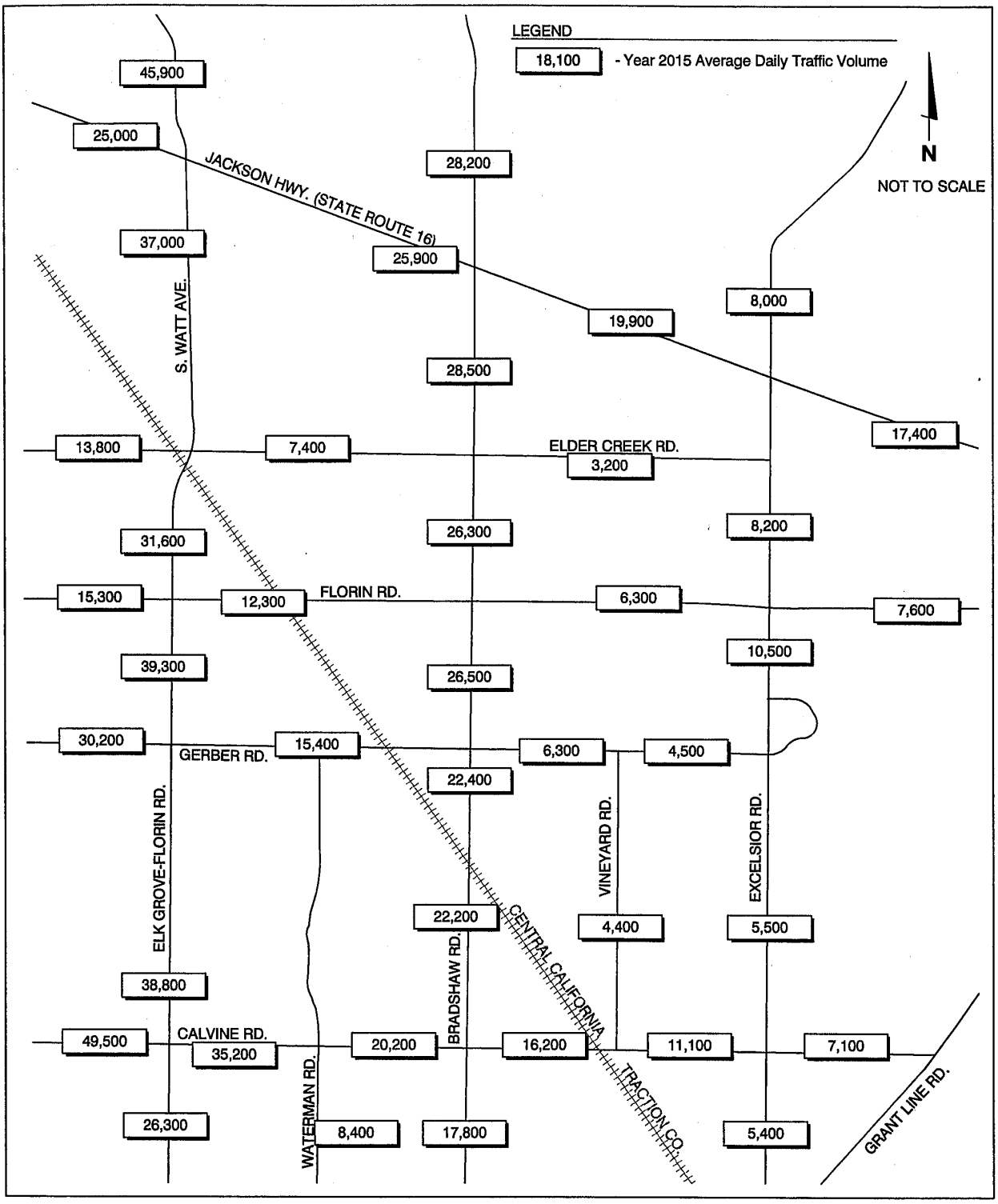
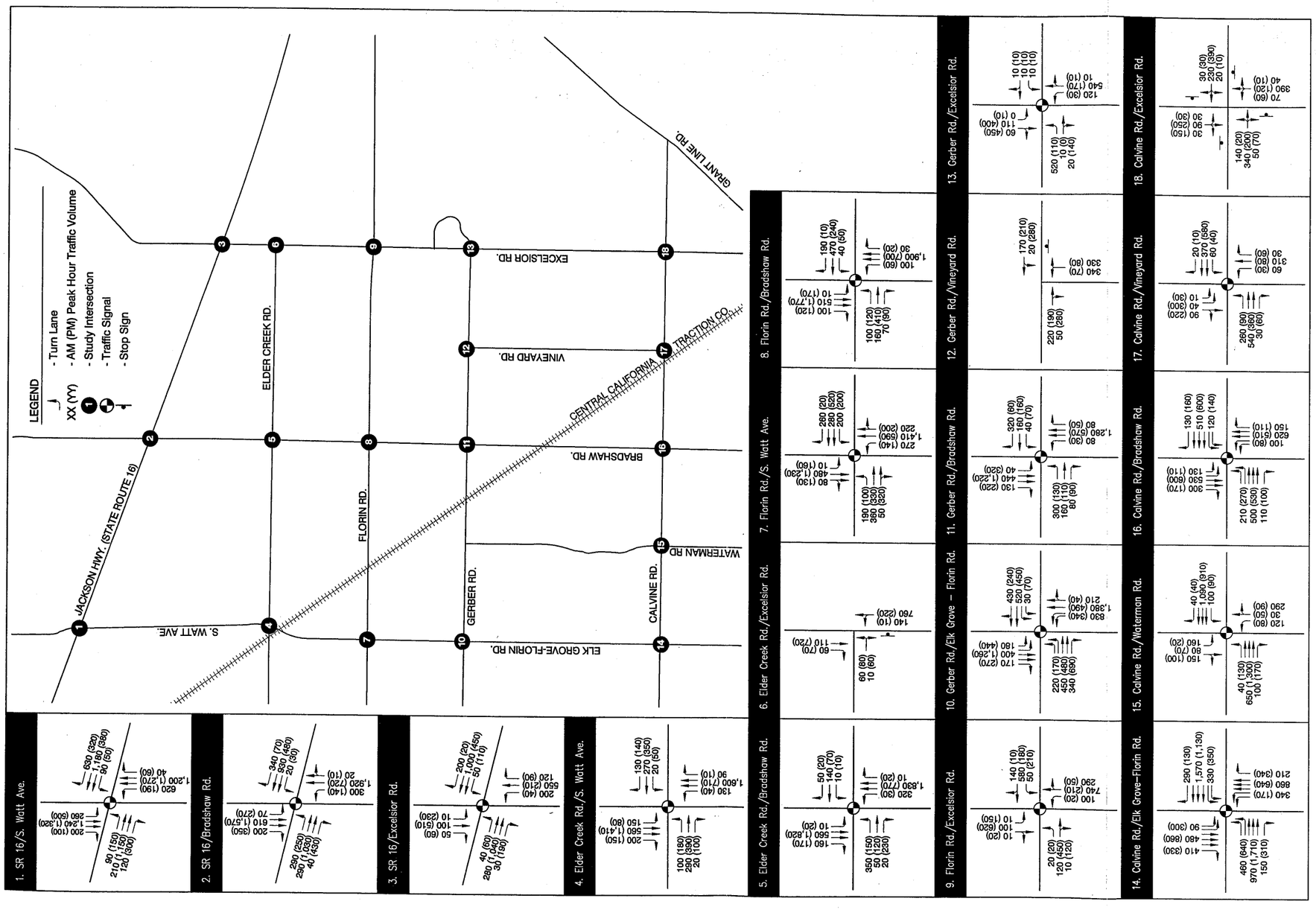


Plate TC -20
Peak Hour Traffic Volumes and Lane Configurations
Year 2015 Without NVSSP



Roadway Analysis

The daily volumes shown on Plate TC -19 were compared to the roadway capacity thresholds presented in Table 7-1. Table 7-15 summarizes the results of the arterial roadway analysis. The study roadways will operate acceptably in Year 2015 (without NVSSP) except for the following:

- S. Watt Avenue (North of SR 16);
- S. Watt Avenue (SR 16 to Elder Creek Road);
- Elk Grove-Florin Road (Florin Road to Gerber Road); and
- Elk Grove-Florin Road (Gerber Road to Calvine Road).

Intersection Analysis

The Year 2015 a.m. and p.m. peak hour intersection turning movements and lane configurations displayed in Plate TC -20 were used to calculate the levels of service at each study intersection. Table 7-16 summarizes the results of this analysis. The study intersections will operate acceptably in 2015 (without NVSSP) except for the following:

- SR 16/S. Watt Avenue operates at LOS F during the a.m. and p.m. peak hours;
- SR 16/Bradshaw Road operates at LOS F during the a.m. peak hour;
- Florin Road/Bradshaw Road operates at LOS F during the a.m. peak hour; and
- Florin Road/Excelsior Road operates at LOS F during the a.m. peak hour.

Year 2015 With NVSSP Conditions

Traffic operations of the study roadways and intersections were analyzed under cumulative conditions with the addition of trips generated by buildout of the NVSSP.

Roadway Network

The Year 2015 roadway network with buildout of the NVSSP includes the extension of Waterman Road and Vineyard Road from Gerber Road to Florin Road and additional north-south roadways that provide alternative routes within the project vicinity. Plate TC -21 displays buildout of the NVSSP and shows the location of the proposed roadways serving the project site.

Table 7-15
Roadway Analysis – Year 2015 Conditions Without Project

Roadway Segment	Year 2015 Conditions		
	Lanes	Volume	LOS
SR 16 – West of S. Watt Ave.	4	25,000	B
SR 16 – S. Watt Ave. to Bradshaw Rd.	4	25,900	C
SR 16 – Bradshaw Rd. to Excelsior Rd.	4	19,900	A
SR 16 – East of Excelsior Rd.	2	17,400	E
Elder Creek Rd. – West of S. Watt Ave.	2	13,800	C
Elder Creek Rd. – S. Watt Ave. to Bradshaw Rd.	2	7,400	A
Elder Creek Rd. – Bradshaw Rd. to Excelsior Rd.	2	3,200	A
Florin Rd. – West of S. Watt Ave.	2	15,300	D
Florin Rd. – S. Watt Ave. to Bradshaw Rd.	2	12,300	B
Florin Rd. – Bradshaw Rd. to Excelsior Rd.	2	6,300	A
Florin Rd. – East of Excelsior Rd.	2	7,600	A
Gerber Rd. – West of Elk Grove-Florin Rd.	4	30,200	D
Gerber Rd. – Elk Grove-Florin Rd. to Bradshaw Rd.	2	15,400	D
Gerber Rd. – Bradshaw Rd. to Vineyard Rd.	2	6,300	D
Gerber Rd. – Vineyard Rd. to Excelsior Rd.	2	4,500	D
Calvine Rd. – West of Elk Grove-Florin Rd.	6	49,500	E
Calvine Rd. – Elk Grove-Florin Rd. to Waterman Rd.	6	35,200	B
Calvine Rd. – Waterman Rd. to Bradshaw Rd.	6	20,200	A
Calvine Rd. – Bradshaw Rd. to Vineyard Rd.	4	16,200	A
Calvine Rd. – Vineyard Rd. to Excelsior Rd.	2	11,100	B
Calvine Rd. – Excelsior Rd. to Grant Line Rd.	2	7,100	A
S. Watt Avenue – North of SR 16	4	45,900	F
S. Watt Avenue – SR 16 to Elder Creek Rd.	4	37,000	F
S. Watt Avenue – Elder Creek Rd. to Florin Rd.	4	31,600	D
Elk Grove-Florin Rd. – Florin Rd. to Gerber Rd.	4	39,300	F
Elk Grove-Florin Rd. – Gerber Rd. to Calvine Rd.	4	38,800	F
Elk Grove-Florin Rd. – South of Calvine Rd.	4	26,300	C
Waterman Rd. – South of Calvine Rd.	2	8,400	A
Bradshaw Rd. – North of SR 16	4	28,200	C
Bradshaw Rd. – SR 16 to Elder Creek Rd.	4	28,500	C
Bradshaw Rd. – Elder Creek Rd. to Florin Rd.	4	26,300	C
Bradshaw Rd. – Florin Rd. to Gerber Rd.	4	26,500	C
Bradshaw Rd. – Gerber Rd. to Calvine Rd.	4	22,400	B
Bradshaw Rd. – South of Calvine Rd.	4	17,800	A
Vineyard Rd. – Gerber Rd. to Calvine Rd.	2	4,400	D
Excelsior Rd. – North of SR 16	2	8,000	E
Excelsior Rd. – Elder Creek Rd. to Florin Rd.	2	8,200	E
Excelsior Rd. – Florin Rd. to Gerber Rd.	2	10,500	E
Excelsior Rd. – Gerber Rd. to Calvine Rd.	2	5,500	D
Excelsior Rd. – South of Calvine Rd.	2	5,400	D

Notes: **Bold** – Unacceptable LOS according to County (LOS E) standards.
Source: Sacramento County Traffic Impact Guidelines (July 24, 1997) and Fehr & Peers Associates, 2002.

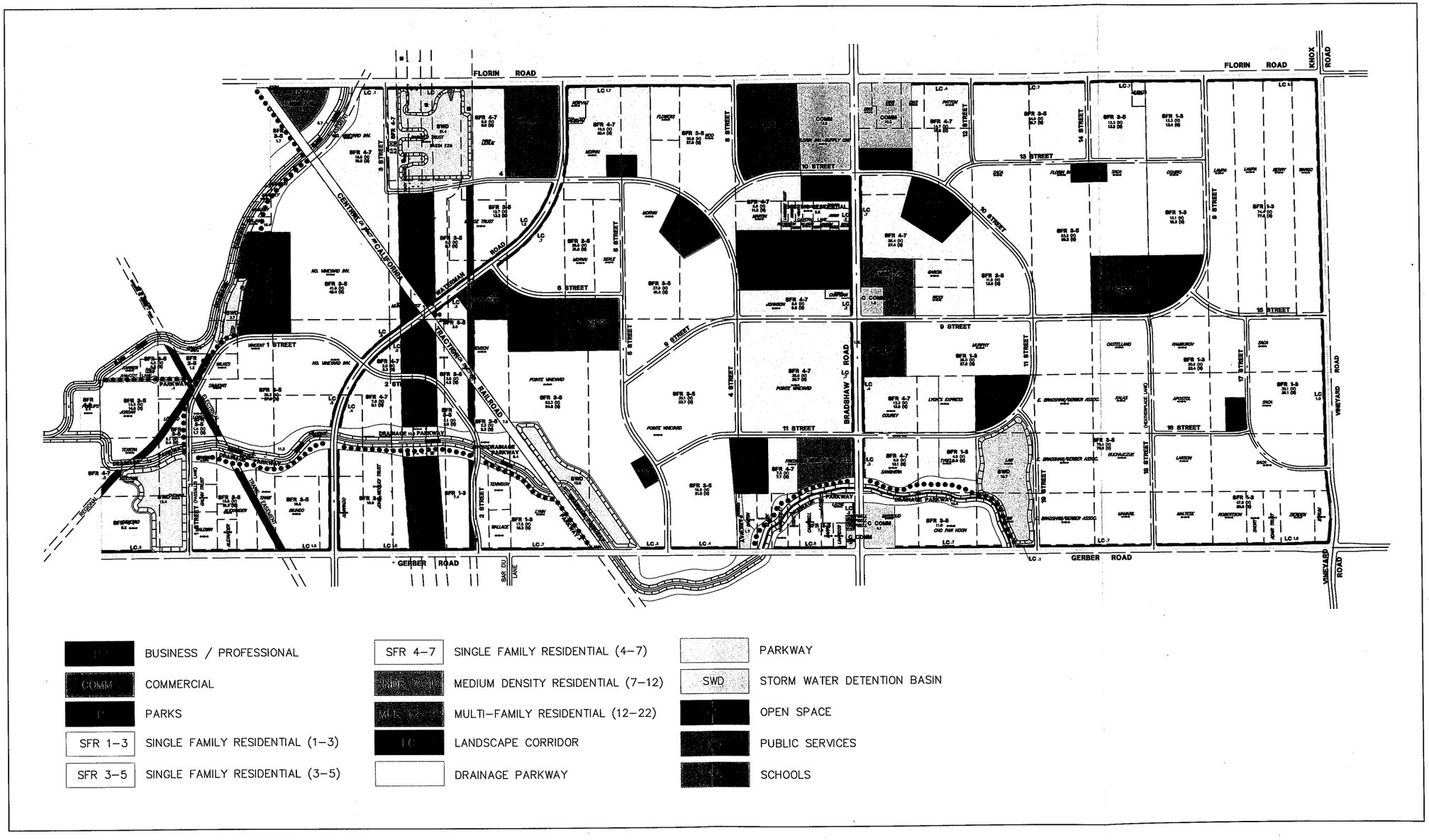
Table 7-16
Peak Hour Intersection Operations – Year 2015 Conditions Without Project

Intersection	Control	AM Peak Hour		PM Peak Hour	
		Delay / V/C	LOS	Delay / V/C	LOS
1. SR 16/S. Watt Ave.	Signal[1]	**1.28**	F	**1.17**	F
2. SR 16/Bradshaw Rd.	Signal	**1.20**	F	0.98	E
3. SR 16/Excelsior Rd.	Signal	0.73	C	0.79	C
4. Elder Creek Rd./S. Watt Ave.	Signal	0.88	D	0.85	D
5. Elder Creek Rd./Bradshaw Rd.	Signal	0.94	E	0.77	C
6. Elder Creek Rd./Excelsior Rd.	2-Way Stop[2]	1.7	A	1.7	A
7. Florin Rd./Elk Grove-Florin Rd.	Signal	0.84	D	0.90	D
8. Florin Rd./Bradshaw Rd.	Signal	**1.02**	F	0.94	E
9. Florin Rd./Excelsior Rd.	Signal	**1.19**	F	0.96	E
10. Gerber Rd./Elk Grove-Florin Rd.	Signal	0.99	E	0.91	E
11. Gerber Rd./Bradshaw Rd.	Signal	0.84	D	0.62	B
12. Gerber Rd./Vineyard Rd.	2-Way Stop	6.2	B	3.1	A
13. Gerber Rd./Excelsior Rd.	Signal	0.73	C	0.69	B
14. Calvine Rd./Elk Grove-Florin Rd.	Signal	0.75	C	0.76	C
15. Calvine Rd./Waterman Rd.	Signal	0.59	A	0.52	A
16. Calvine Rd./Bradshaw Rd.	Signal	0.45	A	0.46	A
17. Calvine Rd./Vineyard Rd.	Signal	0.51	A	0.62	B
18. Calvine Rd./Excelsior Rd.	4-Way Stop[3]	34.1	E	17.0	C

Notes: **Bold** – Unacceptable LOS according to County (LOS E) standards.
[1] Signal Control- Circular 212 Planning Methodology- Results present volume/capacity ratio and LOS
[2] 2-Way Stop Control- 1994 HCM Unsignalized Methodology- Results present delay (seconds/vehicle) and LOS
[3] 4-Way Stop Control- 1994 HCM Unsignalized Methodology- Results present delay (seconds/vehicle) and LOS

Source: Fehr & Peers Associates, 2002.

Plate TC -21
North Vineyard Station Land Use Diagram
Buildout Conditions



LAND USE

As shown in Plate TC -21, buildout of the NVSSP consists of the following land uses:

- 5,732 residential dwelling units;
- 29.9 acres of commercial;
- 7.1 acres of business/professional;
- 19.8 acre golf course;
- 20 acres of schools; and
- 63.5 acres of parks.

The above land uses were added to the 2015 SACMET Regional TDF model based on the number of households and total retail and non-retail employment. The Sacramento Area Council of Governments' (SACOG) employment yield matrix was used to estimate the employment projections for buildout of the NVSSP. Appendix B includes the traffic analysis zones and land use assumptions included in the 2015 TDF model with buildout of the NVSSP.

TRAFFIC VOLUMES

Cumulative (Year 2015) traffic forecasts with buildout of the NVSSP were developed by adding the proposed project land uses and circulation system to the 2015 SACMET Regional TDF model. The TDF model was used to generate daily and peak hour traffic volumes for buildout of the NVSSP. This methodology is appropriate for a cumulative conditions analysis because the model takes into account the buildout of local and regional land uses outside of the project site. In addition, this methodology accounts for changes in travel patterns with the additional roadways included in the NVSSP. Plate TC -22 and Plate TC -23 display the daily and peak hour traffic volumes, respectively, for cumulative conditions with buildout of the NVSSP.

ROADWAY ANALYSIS

The daily traffic volumes displayed in Plate TC -22 were compared to the roadway capacity thresholds presented in Table 7-1 to determine if the addition of buildout trips will cause roadway deficiencies. Table 7-17 summarizes the results of the arterial roadway analysis.

The addition of project trips will cause the segments of Florin Road west of S. Watt Avenue and between S. Watt Avenue and Bradshaw Road to decline from LOS D to LOS F and from LOS B to LOS F, respectively. These additional trips will also cause the segment of Bradshaw Road between Elder Creek Road and Florin Road to decline from LOS C to LOS F.

Plate TC -22
Average Daily Traffic Volumes
Year 2015 With NVSSP

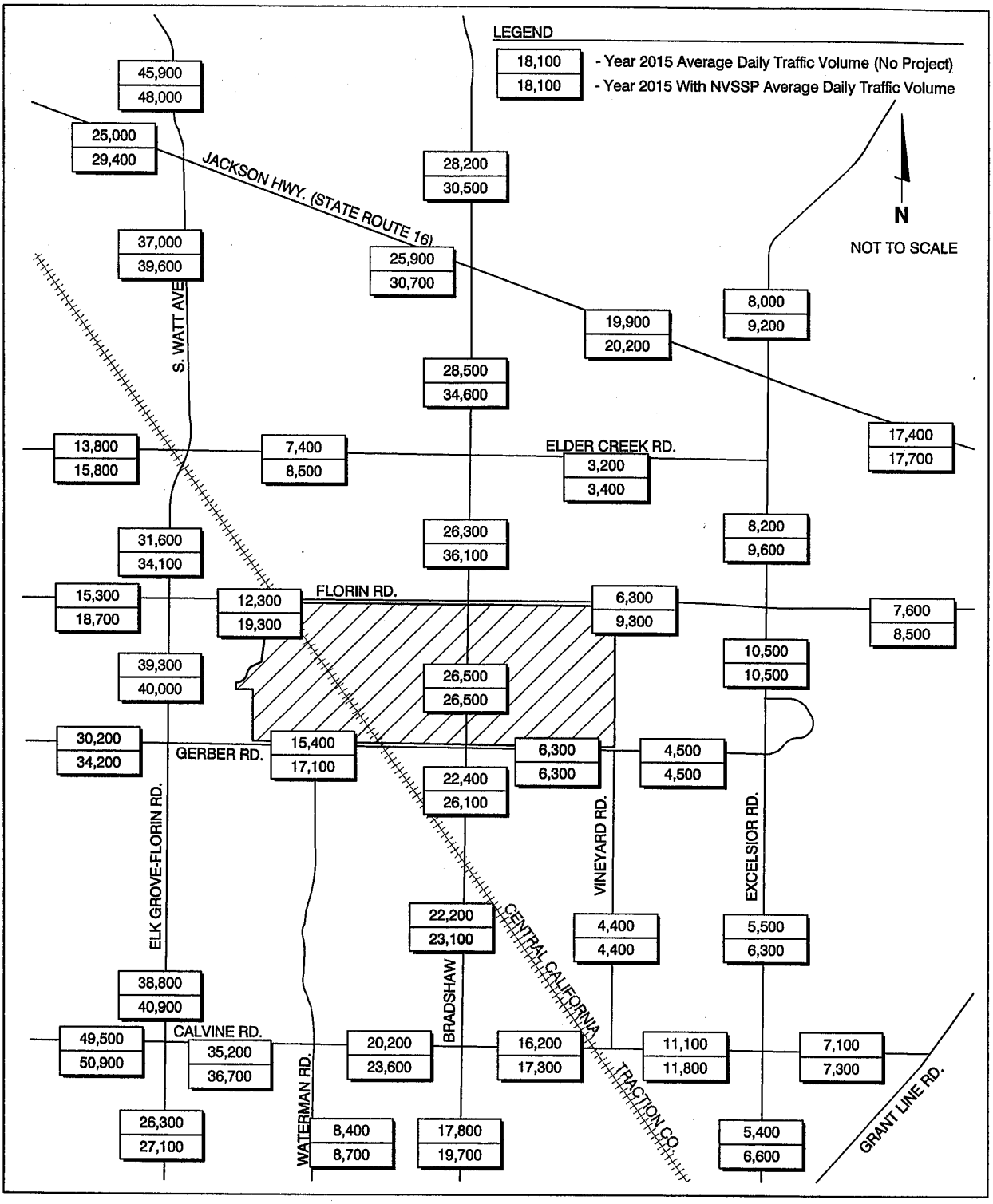


Plate TC -23
Peak Hour Traffic Volumes and Lane Configurations
Year 2015 With NVSSP

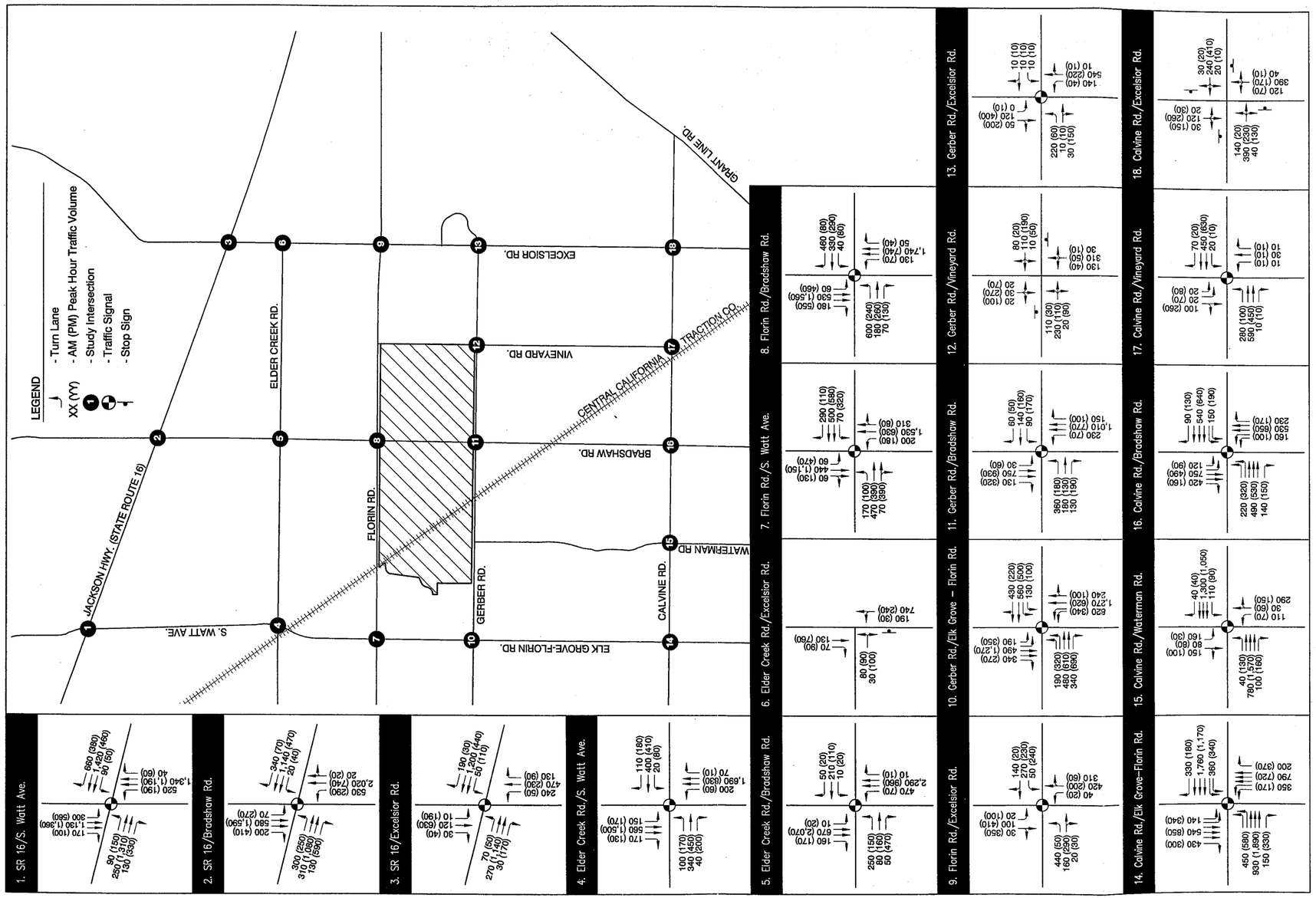


Table 7-17
Roadway Analysis – Year 2015 With Buildout of NVSSP

Roadway Segment	Year 2015 Conditions Without NVSSP			Year 2015 Conditions With NVSSP		
	Lanes	Volume	LOS	Lanes	Volume	LOS
SR 16 – West of S. Watt Ave.	4	25,000	B	4	29,400	D
SR 16 – S. Watt Ave. to Bradshaw Rd.	4	25,900	C	4	30,700	D
SR 16 – Bradshaw Rd. to Excelsior Rd.	4	19,900	A	4	20,200	A
SR 16 – East of Excelsior Rd.	2	17,400	E	2	17,700	E
Elder Creek Rd. – West of S. Watt Ave.	2	13,800	C	2	15,800	D
Elder Creek Rd. – S. Watt Ave. to Bradshaw Rd.	2	7,400	A	2	8,500	A
Elder Creek Rd. – Bradshaw Rd. to Excelsior Rd.	2	3,200	A	2	3,400	A
Florin Rd. – West of S. Watt Ave.	2	15,300	D	2	18,700	F
Florin Rd. – S. Watt Ave. to Bradshaw Rd.	2	12,300	B	2	19,300	F
Florin Rd. – Bradshaw Rd. to Excelsior Rd.	2	6,300	A	2	9,300	A
Florin Rd. – East of Excelsior Rd.	2	7,600	A	2	8,500	A
Gerber Rd. – West of Elk Grove-Florin Rd.	4	30,200	D	4	34,200	E
Gerber Rd. – Elk Grove-Florin Rd. to Bradshaw Rd.	2	15,400	D	2	17,100	E
Gerber Rd. – Bradshaw Rd. to Vineyard Road	2	6,300	D	2	6,300	D
Gerber Rd. – Vineyard Rd. to Excelsior Rd.	2	4,500	D	2	4,500	D
Calvine Rd. – West of Elk Grove-Florin Rd.	6	49,500	E	6	50,900	E
Calvine Rd. – Elk Grove-Florin Rd. to Waterman Rd.	6	35,200	B	6	36,700	B
Calvine Rd. – Waterman Rd. to Bradshaw Rd.	6	20,200	A	6	23,600	A
Calvine Rd. – Bradshaw Rd. to Vineyard Rd.	4	16,200	A	4	17,300	A
Calvine Rd. – Vineyard Rd. to Excelsior Rd.	2	11,100	B	2	11,800	B
Calvine Rd. – Excelsior Rd. to Grant Line Rd.	2	7,100	A	2	7,300	A
S. Watt Avenue – North of SR 16	4	45,900	F	4	48,000	F
S. Watt Avenue – SR 16 to Elder Creek Rd.	4	37,000	F	4	39,600	F
S. Watt Avenue – Elder Creek Rd. to Florin Rd.	4	31,600	D	4	34,100	E
Elk Grove-Florin Rd. – Florin Rd. to Gerber Rd.	4	39,300	F	4	40,000	F
Elk Grove-Florin Rd. – Gerber Rd. to Calvine Rd.	4	38,800	F	4	41,900	**F**
Elk Grove-Florin Rd. – South of Calvine Rd.	4	26,300	C	4	27,100	C
Waterman Rd. – South of Calvine Rd.	2	8,400	A	2	8,700	A
Bradshaw Rd. – North of SR 16	4	28,200	C	4	30,500	D
Bradshaw Rd. – SR 16 to Elder Creek Rd.	4	28,500	C	4	34,600	E
Bradshaw Rd. – Elder Creek Rd. to Florin Rd.	4	26,300	C	4	36,100	F
Bradshaw Rd. – Florin Rd. to Gerber Rd.	4	26,500	C	4	26,500	C
Bradshaw Rd. – Gerber Rd. to Calvine Rd.	4	22,400	B	4	26,100	C
Bradshaw Rd. – South of Calvine Rd.	4	17,800	A	4	19,700	A
Vineyard Rd. – Gerber Rd. to Calvine Rd.	2	4,400	D	2	4,400	D
Excelsior Rd. – North of SR 16	2	8,000	E	2	9,200	E
Excelsior Rd. – Elder Creek Rd. to Florin Rd.	2	8,200	E	2	9,600	E
Excelsior Rd. – Florin Rd. to Gerber Rd.	2	10,500	E	2	10,500	E
Excelsior Rd. – Gerber Rd. to Calvine Rd.	2	5,500	D	2	6,300	D
Excelsior Rd. – South of Calvine Rd.	2	5,400	D	2	6,600	D

Notes: **Bold** – Unacceptable LOS according to County (LOS E) standards.
Source: Sacramento County Traffic Impact Guidelines (July 24, 1997) and Fehr & Peers Associates, 2002.

In addition, trips generated by buildout of the NVSSP will increase the V/C ratio by 0.05 or more on the following facilities that operate at LOS F under 2015 conditions without the proposed project:

- S. Watt Avenue (North of SR 16);
- S. Watt Avenue (SR 16 to Elder Creek Road); and
- Elk Grove-Florin Road (Gerber Road to Calvine Road).

INTERSECTION ANALYSIS

The a.m. and p.m. peak hour intersection turning movements and lane configurations shown on Plate TC -23 were used to calculate the levels of service at each study intersection for cumulative conditions with buildout of the NVSSP. The level of service at each study intersection is presented in Table 7-18.

The addition of NVSSP trips will cause deficiencies at the following intersections:

- SR 16/S. Watt Avenue – The addition of project trips will increase the V/C ratio by more than 0.05 during the p.m. peak hour;

- SR 16/Bradshaw Road – The addition of project trips will increase the V/C ratio by more than 0.05 during the a.m. peak and p.m. peak hours;

- Elder Creek Road/Bradshaw Road – The addition of project trips will degrade operations from LOS E to LOS F during the a.m. peak hour and from LOS C to LOS F during the p.m. peak hour;

- Florin Road/Elk Grove-Florin Road – The addition of project trips will degrade operations from LOS D to LOS F during the p.m. peak hour; and

- Florin Road/Bradshaw Road – The addition of project trips will increase the V/C ratio by more than 0.05 during the a.m. peak hour.

As shown in Table 7-18, the intersection delay and volume-to-capacity ratios improve at four of the study intersections with buildout of the NVSSP. The Year 2015 roadway network with buildout of the NVSSP includes the extension of Waterman Road and Vineyard Road from Gerber Road to Florin Road and additional north-south roadways that provide alternative routes within the project vicinity. Consequently, travel patterns shift with buildout of the NVSSP. This decreases demand at certain study intersection (e.g., Gerber Road/Excelsior Road) because vehicles traveling north-south within the project vicinity can use the alternative routes provided with buildout of the NVSSP.

Table 7-18
Peak Hour Intersection Operations – Year 2015 With Buildout of NVSSP

Intersection	Control	Year 2015 Without NVSSP				Year 2015 With NVSSP			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Delay / V/C	LOS	Delay / V/C	LOS	Delay / V/C	LOS	Delay / V/C	LOS
1. SR 16/S. Watt Ave.	Signal[1]	**1.28**	**F**	**1.17**	**F**	**1.26**	**F**	**1.24**	**F**
2. SR 16/Bradshaw Rd.	Signal	**1.20**	**F**	0.98	E	**1.31**	**F**	**1.11**	**F**
3. SR 16/Excelsior Rd.	Signal	0.73	C	0.79	C	0.77	C	0.91	E
4. Elder Creek Rd./S. Watt Ave.	Signal	0.88	D	0.85	D	1.00	E	0.93	E
5. Elder Creek Rd./Bradshaw Rd.	Signal	0.94	E	0.77	C	**1.08**	**F**	**1.02**	**F**
6. Elder Creek Rd./Excelsior Rd.	2-Way Stop[2]	1.7	A	1.7	A	2.9	A	2.4	A
7. Florin Rd./Elk Grove-Florin Rd.	Signal	0.84	D	0.90	D	0.93	E	**1.02**	**F**
8. Florin Rd./Bradshaw Rd.	Signal	**1.02**	**F**	0.94	E	**1.29**	**F**	0.92	E
9. Florin Rd./Excelsior Rd.	Signal	**1.19**	**F**	0.96	E	**1.07**	**F**	0.89	D
10. Gerber Rd./Elk Grove-Florin Rd.	Signal	0.99	E	0.91	E	0.97	E	0.92	E
11. Gerber Rd./Bradshaw Rd.	Signal	0.84	D	0.62	B	0.74	C	0.58	A
12. Gerber Rd./Vineyard Rd.	2-Way Stop	6.2	B	3.1	A	8.0	B	5.6	B
13. Gerber Rd./Excelsior Rd.	Signal	0.73	C	0.69	B	0.53	A	0.54	A
14. Calvine Rd./Elk Grove-Florin Rd.	Signal	0.75	C	0.76	C	0.80	C	0.83	D
15. Calvine Rd./Waterman Rd.	Signal	0.59	A	0.52	A	0.64	B	0.58	A
16. Calvine Rd./Bradshaw Rd.[4]	Signal	0.45	A	0.46	A	0.51	A	0.51	A
17. Calvine Rd./Vineyard Rd.	Signal	0.51	A	0.62	B	0.42	A	0.50	A
18. Calvine Rd./Excelsior Rd.	4-Way Stop[3]	34.1	E	17.0	C	44.4	E	17.6	C

Notes: **Bold** – Unacceptable LOS according to County (LOS E) standards.
[1] Signal Control- Circular 212 Planning Methodology- Results present volume/capacity ratio and LOS.
[2] 2-Way Stop Control- 1994 HCM Unsignalized Methodology- Results present delay (seconds/vehicle) and LOS.
[3] 4-Way Stop Control- 1994 HCM Unsignalized Methodology- Results present delay (seconds/vehicle) and LOS.

[4] Assumed signal control, consistent with widening of Bradshaw Road (two to four lanes - Calvine Road to SR 16).

Source: Fehr & Peers Associates, 2002.

PROJECT IMPACTS

Based on the roadway and intersection analysis, buildout of the NVSSP will cause or contribute to deficiencies at the following study locations under Year 2015 conditions. These impacts are considered significant:

STUDY ROADWAYS

- Florin Road (West of S. Watt Avenue);
- Florin Road (S. Watt Avenue to Bradshaw Road);
- S. Watt Avenue (North of SR 16);
- S. Watt Avenue (SR 16 to Elder Creek Road) ;
- Elk Grove-Florin Road (Gerber Road to Calvine Road); and

- Bradshaw Road (Elder Creek Road to Florin Road).

Study Intersections

- SR 16/S. Watt Avenue;
- SR 16/Bradshaw Road;
- Elder Creek Road/Bradshaw Road;
- Florin Road/Elk Grove-Florin Road; and
- Florin Road/Bradshaw Road.

Mitigation Measures for 2015 Buildout Conditions

The following improvements will eliminate deficiencies caused by buildout of the NVSSP in Year 2015, and reduce impacts to less-than-significant. The study roadway and intersection improvements recommended in the NVSSP DEIR (July 1997) for cumulative plus project conditions are also summarized. Mitigation measures discussed below may vary from those included in the DEIR due to changes in the planned roadway network within the project area.

Study Roadways Mitigation Measures

TC-13. Florin Road (West of S. Watt Avenue) – Widening this segment from two to four lanes will improve operations to LOS A.

This study roadway segment was not impacted under cumulative plus project conditions in the NVSSP DEIR.

TC-14. Florin Road (S. Watt Avenue to Bradshaw) – Widening this segment from two to four lanes will improve operations to LOS A.

This study roadway segment was not impacted under cumulative plus project conditions in the NVSSP DEIR.

TC-15. S. Watt Avenue (North of SR 16) – Widening this segment from four to six lanes will improve operations to LOS D.

This study roadway segment was not impacted under cumulative plus project conditions in the NVSSP DEIR.

TC-16. S. Watt Avenue (SR 16 to Elder Creek Road) – Widening this segment from four to six lanes will improve operations to LOS C.

This study roadway segment was not impacted under cumulative plus project conditions in the NVSSP DEIR.

TC-17. Elk Grove-Florin Road (Gerber Road to Calvine Road) – Widening this segment from four to six lanes will improve operations to LOS C.

This study roadway segment was not impacted under cumulative plus project conditions in the NVSSP DEIR.

TC-18. Bradshaw Road (Elder Creek Road to Florin Road) – Widening this segment from four to six lanes will improve operations to LOS B.

The NVSSP DEIR recommended limiting access on this roadway segment. The traffic forecasts in the NVSSP DEIR indicated that traffic volumes will exceed County guidelines for roadway capacity under cumulative plus project conditions. This impact was considered significant and unavoidable in the NVSSP DEIR.

STUDY INTERSECTIONS MITIGATION MEASURES

TC-19. SR 16/S. Watt Avenue – Widening the southbound approach to include dual left-turn lanes will result in less than a 0.05 increase in the V/C ratio during the p.m. peak hour.

The NVSSP DEIR recommended modifying this intersection to include a fourth through lane on the northbound and southbound approaches under cumulative plus project conditions. However, Sacramento County does not typically construct eight-lane roadway segments. This intersection operated at LOS F with and without the NVSSP under cumulative conditions in the DEIR. Therefore, this impact was not considered significant in the DEIR.

TC-20. SR 16/Bradshaw Road – Widening the northbound and southbound approaches to include two exclusive left turn lanes, two through lanes and a shared through/right-turn lane will result in less than a 0.05 increase in the V/C ratio during the a.m. and p.m. peak hours.

The NVSSP DEIR recommended modifying this intersection to include dual right-turn lanes on the eastbound approach and triple left-turn lanes on the northbound approach under cumulative plus project conditions.

TC-21. Elder Creek Road/Bradshaw Road – Widening the northbound and southbound approaches to include a third through lane will improve operations to LOS D during the a.m. peak hour and LOS C during the p.m. peak hour. This improvement is consistent with the recommended widening of Bradshaw Road to six lanes between Elder Creek Road and Florin Road.

The NVSSP DEIR recommended modifying this intersection to include dual right-turn lanes on the eastbound approach under cumulative plus project conditions. However, intersection operations remained at LOS F during the p.m. peak hour with these improvements and the impact was considered significant and unavoidable in the NVSSP DEIR.

TC-22. Florin Road/Elk Grove-Florin Road – Widening the northbound and southbound approaches to include a third through lane will improve operations to LOS E during the p.m. peak hour.

The NVSSP DEIR recommended modifying this intersection to include a fourth through lane on the northbound and southbound approaches under cumulative plus project conditions. However, Sacramento County does not typically construct eight-lane roadway segments. Therefore, this impact was considered significant and unavoidable in the NVSSP DEIR.

TC-23. Florin Road/Bradshaw Road – Widening the northbound and southbound approaches to include a third through lane and widening the eastbound approach to include a second exclusive left-turn lane will improve operations to LOS E during the a.m. peak hour. This improvement is consistent with the recommended widening of Florin Road to four lanes between Watt Avenue and Bradshaw Road and with the recommended widening of Bradshaw Road to six lanes between Elder Creek Road and Florin Road.

The NVSSP DEIR recommended modifying this intersection to include a fourth through lane on the northbound and southbound approaches under cumulative plus project conditions. However, Sacramento County does not typically construct eight-lane roadway segments. Therefore, this impact was considered significant and unavoidable in the NVSSP DEIR.

PHASING OF IMPROVEMENTS

Subsequent to the preparation of this Traffic Study, Fehr & Peers completed its evaluation to identify the timing of roadway infrastructure improvements based on the number of dwelling units constructed in the North Vineyard Station Specific Plan (NVSSP). This evaluation expands on the traffic analysis documented in the *Final Report – Transportation Analysis for the North Vineyard Station Specific Plan Phasing Analysis*, April 3, 2002, which identified roadway and intersection improvements with phased development of the specific plan. These improvements are shown on Figure 1. However, the phasing analysis did not tie the timing of improvements to a specific number of constructed dwelling units. At the request of the Sacramento County Public Infrastructure Finance Section, we expanded the phasing analysis to identify the number of dwelling units that would trigger the need for each improvement. The following documents their analysis methodology and evaluation results.

METHODOLOGY

Fehr and Peer's analysis is based on the daily roadway volumes and peak hour intersection turning movement forecasts for each development phase contained in the April 3, 2002 phasing analysis (i.e., Phase 1A, Phase 1B, Year 2010 development, and

Year 2015 development). F & P identified the improvement triggers (i.e., the number of dwelling units constructed in the specific plan) using the following steps.

• Identified the increase in traffic on a study roadway or through a study intersection that caused an impact based on the thresholds contained in the *County of Sacramento Traffic Impact Guidelines* (July, 1997).

• Identified the specific plan's traffic contribution to the impacted facility.

• Identified the number of dwelling units that would generate the specific plan's traffic contribution.

Although F & P's analysis is based on the proposed phasing of the NVSSP contained in the April 3, 2002 *Final Report*, the results reported below reference the new phase numbers (i.e., Phases A-1, A-2, B, C, D, and E) for the NVSSP. The following table summarizes the number of dwelling units that trigger each improvement. For reference, F & P has identified the total number of dwelling units by phase, the dwelling unit trigger by phase, and the cumulative number of dwelling units constructed at the time an improvement is triggered. For example, Florin Road/Excelsior Road intersection improvements would be triggered with the 300th unit constructed in Phase B, which corresponds to 1,848 total units constructed in the specific plan.

Table TC-19
Dwelling Unit Triggers for Construction of Improvements

Phase	Improvement Location	Dwelling Unit Trigger by Phase	Cumulative Number of Units Constructed
A-1 (601 Units)	None	-	601
A-2 (947 Units)	Gerber Road – Elk Grove Flroin Road to Bradshaw Road	300	901
	South Watt Avenue/Elder Creek Road Intersection	600	1,201
B (1,261 Units)	Florin Road/Excelsior Road Intersection	300	1,848
	South Watt Avenue/State Route 16 Intersection	700	2,248
	Gerber Road/Excelsior Road Intersection	1,000	2,548
	Elk Grove Florin Road – Gerber Road to Calvine Road		
	South Watt Avenue – North of SR 16		
C (1,260 Units)	Bradshaw Road/SR 16 Intersection	300	3,109
D (920 Units)	South Watt Avenue – Elker Creek Road to SR 16	400	4,469
	Florin Road – Bradshaw Road to Elk Grove Florin Road		
	Florin Road – East of Elk Grove Florin Road		
E (729 Units)	Bradshaw Road – Elder Creek Road to Florin Road	700	5,689
		Specific Plan Build-Out	5,718

RECOMMENDATIONS/REQUIREMENTS OF THE COUNTY DEPARTMENT OF TRANSPORTATION:

VINEYARD CREEK SUBDIVISION

1. The spacing between A Drive and F Way must be a minimum of 420 feet apart in order to accommodate two left turn pockets on Waterman Road.

2. Construct a minimum 48-foot street section including 36 feet of pavement and a 12-foot median for the offsite right-of-way on Waterman Road per the North Vineyard Station P.F.F.P.

3. Grant the County right-of-way on Waterman Road based on either a 72-foot modified arterial without a median or a 76-foot modified arterial with a landscape median pursuant to the North Vineyard Station Specific Plan, the Sacramento County Improvements Standards, and to the satisfaction of the Department of Transportation.

4. Install public street improvements along Waterman Road pursuant to the North Vineyard Station Specific Plan, the Sacramento County Improvement Standards, and to the satisfaction of the Department of Transportation.

5. Show the required raised median on the Waterman Road street section.

6. Dedicate additional right-of-way on Waterman Road and A Drive for intersection widening per the Sacramento County Improvement Standard Drawing 4-6B and to the satisfaction of the Department of Transportation. Note: A bus turnout will be required on Waterman Road.

7. Grant the County right-of-way on Florin Road based on a 96-foot modified thoroughfare pursuant to the North Vineyard Station Specific Plan, the Sacramento County Improvement Standards, and to the satisfaction of the Department of Transportation.

8. Install public street improvements along Florin Road pursuant to the North Vineyard Station Specific Plan, the Sacramento County Improvement Standards, and to the satisfaction of the Department of Transportation.

9. Dedicate additional right-of-way on Florin ~~r~~Road and L Way for intersection widening per the Sacramento County Improvement Standard Drawing 4-5 and to the satisfaction of the Department of Transportation. Note: A bus turnout will be required on Florin Road.

10. No more than 100 units with access to L Way shall be constructed until there is a second point of access.

11. Lot 380 shall not be allowed to develop unless access can be provided to the west in order to avoid crossing the CCTC.

12. Reconfigure area comprising G Circle in order to bring street elbow into compliance with County standards.

13. Dedicate the landscaped lots to the County of Sacramento and provide a maintenance entity with an ongoing funding source. The maintenance entity shall be approved and found acceptable by County representatives. Annexation to a current Lighting and Landscape District or a Mello Roos Community Finance District may be possible and is the preferred course of action.

14. Traffic control devices shall be installed where needed to the satisfaction of the Department of Transportation. Traffic control locations will be determined at time of improvement plan submittal.

VINEYARD POINT SUBDIVISION

1. Grant the County right-of-way on Gerber Road based on a 72-foot modified standard and install public street improvements pursuant to Sacramento County Improvement Standards and to the satisfaction of the Department of Transportation.

2. Grant the County right-of-way on Bradshaw Road based on a 96-foot modified standard and install public street improvements pursuant to Sacramento County Improvement Standards and to the satisfaction of the Department of Transportation.

3. Dedicate additional right-of-way on Bradshaw Road and ‘11’ Street for intersection widening per Standard Drawing 4-8 of the Sacramento County Improvement Standards and to the satisfaction of the Department of Transportation. Note: A bus turnout will be required on Bradshaw Road.

4. Dedicate additional right-of-way on Bradshaw Road and ‘9’ Street for intersection widening per Standard Drawing 4-8 of the Sacramento County Improvement Standards and to the satisfaction of the Department of Transportation. Note: A bus turnout will be required on Bradshaw Road.

5. Dedicate additional right-of-way on Gerber Road and ‘5’ Street for intersection widening per Standard Drawing 4-8 of the Sacramento County Improvement Standards and to the satisfaction of the Department of Transportation. Note: A bus turnout will be required on Gerber Road. In addition, the median at the intersection of ‘P’ Drive/’O’ Circle and ‘5’ Street will need to be redesigned to allow full turning movements at that intersection.

6. Provide a 30-foot half width along park frontages for on-street parking. Note: If the park will be providing recreational areas such as soccer fields and/or baseball fields, then on site parking will be required.

7. Stop signs should be installed where needed to the satisfaction of the Department of Transportation. Stop sign locations will be determined at time of improvement plan submittal.

8. The proposed public street entrance from Gerber Road should be a minimum of 50 feet in width, excluding median width, for a distance of 100 feet per the Sacramento County Improvement Standards and to the satisfaction of the Department of Transportation.

9. The proposed public street entrance from Bradshaw Road should be a minimum of 50 feet in width, excluding median width, for a distance of 100 feet per the Sacramento County Improvement Standards and to the satisfaction of the Department of Transportation.

10. Visibility easements should be included where needed per the Sacramento County Improvement Standards and to the satisfaction of the Department of Transportation.

11. All pedestrian access ramps affected by this project must be installed/upgraded pursuant to the State of California Title 24 Code of Regulations and to the satisfaction of the Department of Transportation.

8 AIR QUALITY

INTRODUCTION

An air quality analysis was prepared for the previous EIR for the North Vineyard Station Specific Plan. The EIR concluded that the project will increase regional concentrations of ozone and could further delay the eventual attainment of state and federal standards. Also, the projects carbon monoxide emissions would contribute to adverse localized air quality conditions at congested intersections. Any reduction in project vehicle trips and emissions would help reduce impacts on air quality; however, basin-wide emissions would increase with the project. Because these emissions would contribute to conditions that already violate air quality standards, effects upon air quality were considered significant and unavoidable.

IMPACTS AND ANALYSIS

According to the Sacramento County Department of Transportation (Clark):

> "The Department of Transportation has reviewed the trip generation analysis prepared for the proposed changes in the land use plan for the North Vineyard Specific Plan by Fehr & Peers Transportation Consultant, March 4, 2003, and concurs with the conclusions that the changes in overall project trip generation are minor. The increase in project trip generation with the change in number of units is around 2%. Department of Transportation staff believes that this increase in the project trip generation will not result in any changes in the conclusions presented in the FEIR."

Because the changes in the land use plan are considered minor, it is not expected that these changes will contribute to additional regional air quality impacts beyond those already analyzed in the prior FEIR.

As for short-term construction-related impacts, the standard for particulate matter (dust) measuring ten microns or less (PM_{10}) has been revised since the previous EIR was published. The SMAQMD's threshold of significance for dust/PM_{10} is now 50 micrograms per cubic meter; it was 275 pounds per day for projects undergoing CEQA review prior to May 2002. The previous EIR concluded that construction dust impacts were less than significant. However, with the revised standard, particulate emissions must be more carefully managed and the ability to mitigate to less than significant levels for large projects is difficult if not impossible to achieve. Therefore construction impacts for the project are now considered a significant impact. This issue is discussed further in this section.

REGIONAL EMISSIONS

The following travel demand reduction measures were included in the adopted NVSSP. These measures were intended to lessen air quality impacts by reducing trip generation and attendant traffic congestion. Travel demand reduction measures were included to lessen the impact to air quality by eliminating vehicle trips, reducing their length, or changing the time of day when they occur.

The NVSSP addressed General Plan policies intended to mitigate land use development impact on air quality in the following manner:

Policy AQ-23. Promote mixed-use development to reduce the length and frequency of vehicle trips.

> The Plan includes a mixture of land uses and over 38 acres designed for retail commercial and business/professional uses. While these uses are not intended to meet all employment and commercial needs of Plan area residents, it is anticipated that the length and frequency of trips will be reduced to some degree.

Policy AQ-24. Provide for increased intensity of development along existing and proposed transit corridors.

> The Plan is consistent with Policy AQ-24 because the highest intensity land uses (Neighborhood Commercial and Business/Professional) and the majority of the highest density residential uses (Multi-Family Residential) are located near the Transit Center, a proposed future light rail station. All Commercial and Medium and Multi-Family Residential land uses are located on major arterials easily served by transit.

BUS AND LIGHT RAIL TRANSIT FACILITIES

Provision of Public transit within the county is guided by the following General Plan Policy:

> *Policy CI-4. Require full and accurate analysis of all alternatives for public transit, including expanded bus service, private carrier operations, road capacity improvements, and rail transit, prior to committing funds for construction. Evaluation shall specifically include full social and economic costs and benefits, as well as net system effects and per-new-rider costs.*

Regional Transit's Transit Master Plan identified costs and benefits of transit service, including specific recommendations for the study area. These recommendations include bus service along major streets and future light rail service through the Plan area within the California Central Traction Railroad right-of-way.

TRANSIT CORRIDORS

The transit facilities included as part of the Plan are designed to coordinate with and maximize the potential of those transit corridors identified by RT and Sacramento County. As noted in the Plan, RT guidelines recommend bus stops at one-quarter mile intervals in suburban settings, and they recommend turnouts when traffic volumes, speeds, and service frequency warrant safe stopping areas for buses. Consistent with this standard, the Circulation Plan shows bus stops at one-quarter mile intervals.

Roadways with the Specific Plan area will be designed to accommodate transit facilities such as turnouts, bus stops, and shelters should individual routes be designated on major collector streets. Thus, implementation of the proposed project will not disrupt or interfere with existing or planned transit operations in the area, and no operational deficiencies have been identified.

The Plan area has been designed to capitalize upon the designated bus routes. Specifically, higher density residential development, as well as commercial uses, are located at major intersections along transit routes, and the highest intensity land uses are located near the Transit Center.

TRANSIT CENTER

A 10-acre Transit Center has been designated in the Plan to ultimately provide parking for car pools and buses and to facilitate the possible future extension of light rail transit into the Plan area. Included are a 1.1-acre transit station site and nine acres for park and ride lots. The Transit Center adjoins the Plaza Park, a specialized park intended to compliment the transit facilities and attract transit users.

The Transit Center, as described in the Plan is designed in accordance with Sacramento RT design standards for suburban light rail stations with the following amenities:

- Security features
- Shelters (platforms and ramps)
- Station furniture (benches, trash receptacles, telephones, drinking fountains)
- Information display (kiosks, schedule displays)
- Fare vending equipment
- Lighting
- Landscaping/planters
- Bicycle lockers/secure bicycle racks
- Artwork
- Concessionaires

On the basis of RT standards of 100 parking spaces per acre, the nine-acre parking area can be expected to accommodate approximately 900 vehicles. Also, park and ride areas are permitted uses in the Commercial sites. These provisions for park and ride facilities are consistent with the following General Plan policy:

Policy AQ-28. Require that large new developments dedicate land for use as park-and-ride lots if suitably located.

TRAVEL DEMAND REDUCTION MEASURES

Travel demand reduction measures are incorporated into various aspects of the Plan in order to reduce vehicle emissions, thereby reducing traffic congestion and improving air quality. The General Plan addresses air quality in the following policy:

Policy AQ-15. All new major indirect sources of emissions shall be reviewed and modified or conditioned to achieve a reduction in emissions. This indirect source review program will be developed in coordination with SACOG and SMAQMD, and include the following features:

A. *A 15 percent reduction in emissions from the level that would be produced by a base-case project assuming full trip generation per the current ITE Trip Generation Handbook.*

B. *A focus on cost-effectiveness measured in terms of cost per ton of pollutant avoided.*

C. *A list of cost-effective measures to be developed, maintained, and annually reviewed by SMAQMD.*

D. *A maximum expenditure cap that will be computed for each indirect source on the basis of factors including, but not limited to, total emissions and project value.*

E. *A process for obtaining a waiver from the 15 percent requirement if it is found that a lower level of reduction is all that can be achieved with const-effective measures and offsets, or that achieving the full 15 percent reduction would cost more that expenditure cap.*

F. *An exception for projects that have already undergone the indirect source review at some point in the development approval process.*

G. *A procedure to give full credit for other measures required in a project that may also achieve a reduction in emissions.*

Sacramento County has developed a preliminary list of measures and corresponding credits that can be applied to the required 15 percent reduction in emissions. This list is based on data originally prepared by the SMAQMD in a February, 1995 report entitled *Indirect Source Review Program: Implementation Guidelines*. Sacramento County is currently developing specific requirements that will be incorporated into the Zoning Code.

The following measures, which are incorporated into the North Vineyard Station Specific Plan, are all contained in the preliminary list of acceptable measures. According to the

County's preliminary guidelines, the above measures result in a 15.5 percent reduction in emissions and meet the requirements of General Plan Policy AQ-15.

1. The Plan contains a mixture of complementary land uses (residential, commercial, parks, schools) located within the project or within one-half mile of the project boundaries. Approximately half of the Plan meets the County's criteria, which allows for up to a 6% credit. SPECIFIC PLAN CREDIT = 3%.

2. The Plan is designed to provide a transit stop within a reasonable distance of all land uses. The proposed roadway network of Arterial, Thoroughfare, and Collector streets would accommodate bus stops within one-quarter mile of most land uses. SPECIFIC PLAN CREDIT = 2%.

3. The Plan will include easements to accommodate bus stop improvements (route signs, benches, shelters and lighting) at all major transit stops. Current RT policy only requires easements for stops since a private firm provides the shelter and related improvements in exchange for advertising space. SPECIFIC PLAN CREDIT = 2%.

4. The Plan is designed to accommodate and provide access to the planned on-street (Class II) bicycle lanes as identified in the 2010 Sacramento City/County Bikeway Master Plan. On-street facilities within one-half mile of the project site are planned on Florin, Bradshaw, and Gerber Roads, and the entire Plan area meets the criteria. SPECIFIC PLAN CREDIT = 2%

5. In addition to the bikeways included in the Bikeway Master Plan, both on-street and off-street facilities are included throughout the Plan area and will be located within one-half mile of all major land uses. SPECIFIC PLAN CREDIT = 1.5%.

6. Through policy language, the Plan provides for direct (i.e., minimum distance) pedestrian connections between adjacent and complementary land uses. All parks, schools, and commercial areas will be connected to residential areas by interconnected roads and pathways. SPECIFIC PLAN CREDIT = 2%.

7. The Plan circulation system provides direct automobile access between complementary land uses to minimize the distance traveled, within the limits of physical constraints (i.e., drainage parkways). SPECIFIC PLAN CREDIT = 1%

8. The Plan area will participate in a Transportation Management Association to create, administer, and finance on-going programs to reduce vehicle trips. The Financing Plan for the Plan will include means to fund the TMA. SPECIFIC PLAN CREDIT = 3%.

TOTAL SPECIFIC PLAN CREDIT: 15.5%

CONSTRUCTION EMISSIONS

Since the previous EIR was published, the standard for particulate matter measuring ten microns or less (PM_{10}) has been revised. The SMAQMD's threshold of significance for dust/PM_{10} is now 50 micrograms per cubic meter; it was 275 pounds per day for projects undergoing CEQA review prior to May 2002.

Short-term air quality impacts are mostly due to dust (PM_{10}) generated by construction and development activities and the equipment and vehicles used during these activities. Dust generation is dependent on soil type and soil moisture, as well as the amount of total acreage actually involved in clearing, grubbing and grading activities. Clearing and earthmoving activities comprise the major source of construction dust generation, but traffic and general disturbance of the soil also contribute to the problem. Also sand, lime or other fine particulate materials may be used during construction, and stored on-site. If not stored properly, such materials could become airborne during periods of high winds. The effects of construction activities include increased dust fall and locally elevated levels of suspended particulates. As noted previously, PM_{10} is considered unhealthy because the particles are small enough to inhale and damage lung tissue, which can lead to respiratory problems. In the vicinity of the project the most sensitive local dust receptor would be residential uses and schools.

Some PM_{10} emissions during project construction will be reduced through compliance with institutional requirements for dust abatement and erosion control. These institutional measures include the SMAQMD "District Rule 403-Fugitive Dust", in the Sacramento County Code relating to land grading and erosion control [Title 16, Chapter 16.44, Section 16.44.070(K)], and the County's *'Standard Construction Specification'* requirements (BOS Resolution No. 92-0846) Section GS-6-16.

Calculation of PM_{10} emissions under the new standard of 50 micrograms per cubic meter requires use of a computer model. For an example, when SMAQMD ran a new air quality model for a shopping center project based on the new PM_{10} threshold of 50 micrograms per cubic meter, the analysis concluded that exposed surface site grading of 10 acres to a maximum of 25 acres at a time can be mitigated to a less than significant level if on site mobile source vehicles are limited to a maximum of seven vehicles, exposed soil is kept moist, soil piles are kept moist at all times or covered at all times, and least two feet of freeboard is maintained around the piles. The most critical assumption in this model run to ensure PM_{10} is kept to a less than significant level was <u>keeping exposed soil moist at all times</u>. In contrast, when a standard mitigation measure of watering exposed soil twice daily was substituted for the mitigation measure calling for keeping the soil moist at all times, the 50 micrograms per cubic meter was exceeded by 11 micrograms.

According to SMAQMD, greater dust mitigation could be achieved if development were required to "water exposed soil with adequate frequency to keep soil moist <u>at all times</u>" versus the standard requirement of watering exposed surfaces twice daily. However,

strict compliance with the requirement to “keep soil moist at all times” does not appear to be a practical measure to be imposed throughout the Plan area over the entire build-out period. Dust generation during construction activities is expected to exceed the PM_{10} threshold for significant impact given the level of construction activity expected within the Specific Plan area.

Construction activities are also a source of organic gas emissions; therefore, the project would elevate existing levels in the vicinity. Solvents in adhesives, non-waterbase paints, thinners, and some insulating and caulking materials would evaporate and participate in the photochemical reaction that creates urban ozone. Asphalt use in paving is also an organic gas for a short time after its application. Construction activities would result in the release of small amounts of solvents and other materials that are considered toxic air contaminants. In general, the highest exposure would occur for construction workers. Exposure to neighboring properties is not likely to be problematic because of the small amounts used and the short duration of release.

In an effort to further reduce emissions of pollutants to the atmosphere during the construction phase of the project, SMAQMD staff has identified mitigation that ensures the use of reduced-emission engines and reduced-emission alternative fuels (such as PuriNox and Ultra-Low Sulfur Diesel [ULSD]) to power heavy-duty on-road and off-road equipment during project construction. SMAQMD specific requirements and recommendations are included at the end of this chapter. Two of the SMAQMD requirements for diesel powered equipment NOx and visible emissions are also included as air quality mitigation measures to ensure emission reduction compliance is monitored pursuant to CEQA and SMAQMD.

VINEYARD CREEK AND VINEYARD POINT SUBDIVISIONS

The Sacramento Metropolitan Air Quality District (SMAQMD) commented that, due to their size, the Vineyard Creek and Vineyard Point projects exceed the District’s thresholds of significance. Therefore, construction related air quality impacts are considered significant. The following mitigation measures may reduce this impact but not likely to less-than-significant levels given the size of the developments.

RECOMMENDATIONS OF THE SMAQMD

The following are recommendations of the SMAQMD and are not mitigation measures:

1. The use of an aqueous base alternative fuel as a fuel for heavy-duty, off-road, diesel-powered equipment is also recommended. These alternative fuels will reduce NOx emissions by approximately 14% and PM10 emissions by approximately 63%.

2. Limit diesel engine idling to not more than 5 minutes, before turning off the engine.

3. During the construction phase(s) of the project, District Rule 403 – Fugitive Dust, will apply. The developer/contractor is required to control dust emissions from earth moving activities, or any other construction activity, to prevent airborne dust from leaving the project site. District Rules are available at www.airquality.org.

4. Any architectural coatings used must comply with District Rule 442 – Architectural Coatings. The developer/contractor is required to use coatings that comply with the volatile organic compound content limits specified in Rule 442. Questions regarding Rule 442 should be directed to the District's Compliance Assistance Hotline at (916) 874-4884.

5. We recommend that all required street trees be a minimum 24-inch box size. Larger trees provide shade that not only reduce heat, but also are more attractive to pedestrians for short trips to parks and neighborhood facilities.

6. If gas appliances are to be used in the dwelling units, District staff recommends the use of low NOx (Nitrogen Oxides) furnaces, water heaters, and cooking facilities.

7. We recommend that the developer install "Energy-Star" labeled roofing materials.

8. We recommend that the project comply with SMUD Advantage (Tier II or III) energy standards.

9. We recommend that an AQ-15 Air Quality Plan be developed to mitigate the air quality impacts of the project. Submission and approval of the plan should be completed as a condition of approval for the project. The AQ Plan should include, but not be limited to, the mitigation measures listed above.

MITIGATION MEASURES

AQ-1. The project shall provide a plan for approval by the County of Sacramento and SMAQMD demonstrating that the heavy-duty (>50 horsepower) off-road vehicles to be used in the construction project, including owned, leased and subcontractor vehicles, will achieve a project wide fleet-average 20 percent NOx reduction and 45 percent particulate reduction compared to the most recent CARB fleet average; and

AQ-2. The project representative shall submit to the County of Sacramento and SMAQMD a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 horsepower, that will be used an aggregate of 40 or more hours during any portion of the construction project. The inventory shall include the horsepower rating, engine production year, and hours of use or fuel throughput for each piece of equipment. The inventory shall be updated and submitted monthly throughout the duration of the project, except that an

inventory shall not be required for any 30-day period in which no construction activity occurs. At least 48 hours prior to the use of subject heavy-duty off-road equipment, the project representative shall provide SMAQMD with the anticipated construction timeline including start date, and name and phone number of the project manager and on-site foreman.

AQ-3. The project shall ensure that emissions from all off-road diesel powered equipment used on the project site do not exceed 40 percent opacity for more than three minutes in any one hour. Any equipment found to exceed 40 percent opacity shall be repaired immediately, and the County of Sacramento and SMAQMD shall be notified within 48 hours of identification of non-compliant equipment. A visual survey of all in-operation equipment shall be made at least weekly, and a monthly summary of the visual survey results shall be submitted throughout the duration of the project, except that the monthly summary shall not be required for any 30-day period in which no construction activity occurs. The monthly summary shall include the quantity and type of vehicles surveyed as well as the dates of each survey. The SMAQMD and/or other officials may conduct periodic site inspections to determine compliance. Nothing in this section shall supercede other SMAQMD or state rules or regulations.

AQ-4. The following construction-related measures apply to construction activities within the Specific Plan area:

- Water exposed, graded surfaces at least two times per day and if possible, keep soil moist at all times.
- Properly maintain diesel and/or gas fueled construction equipment.
- Water haul roads at least two times per day
- Use low VOC architectural coatings

AQ-5. Comply with the adopted AQ-15 Plan, which is included in section 7.6 (Travel demand reduction measures of the NVSSP text).~~.~~

~~AQ-6.Individual development projects within the Specific Plan Area shall achieve an additional 2 percent reduction in combined operational and area source air quality emissions to ensure overall AQ-15 compliance.~~

~~AQ-7.~~AQ-6. No wood burning appliances shall be permitted in new construction within the Specific Plan area. Fireplaces and similar “wood stoves” shall be fueled by natural gas or propane.

9 NOISE

BACKGROUND

Project related noise impacts on existing and future sensitive receptors were evaluated in the prior EIR. The analysis concluded that residential uses within the Plan Area could be adversely affected by noise generated by traffic, railroad operations and new commercial, business/professional, and school uses. The extent to which existing or future residential developments would be affected by these noise sources would depend on the proximity of the developments to the various noise sources. Residential developments close to major roadways were expected to be significantly impacted by traffic noise. Some residential uses located near the railroad track could also be adversely impacted by train operation noise. Future siting of commercial, business/professional, and school uses in proximity to residential uses could also cause noise-related land use compatibility impacts.

As a general precautionary measure, where noise sensitive land uses are proposed within the 60 dB L_{dn} noise contour for future traffic or railroad operations, an acoustical analysis should be required so that noise mitigation measures specific to a particular situation may be incorporated into the project design. The objectives of these mitigation measures are to ensure compliance with the Sacramento County noise standards and to protect noise sensitive developments from excessive noise levels.

The two maps submitted, as well as the water treatment facility, are located within the 60 dB Ldn noise contour, and require an acoustical analysis. Noise analyses for each were prepared by Bollard & Brennan, Inc. (December 2003) and are presented in the following discussion.

SETTING

Motor vehicle traffic is the major contributor to the existing noise environment in the Plan Area. Major vehicular noise in the Plan Area occurs along Florin Road, Gerber Road, and Bradshaw Road. Another major noise source in the Plan Area occurs along the Central California Traction Railroad Tracks as a result of train movement and operations along the railroad tracks. A third potentially significant noise source impacting the Plan Area is Mather Field, about 3 miles northeast of the Plan Area. There are no significant stationary noise sources, such as factories, stadiums, or industrial, or commercial uses, located in the Plan Area.

Residential uses are the primary ‘noise sensitive receptors’ located throughout the Plan Area. There are numerous existing residences located within the Plan Area and vicinity. Residences are principally located along Florin, Gerber, and Bradshaw Rroads. The

exception are the agricultural-residential homes located along minor roads such as McCoy Lane, Passalis Lane, and Hedge Avenue in the west Plan Area and vicinity, Heather Place Lane in the east Plan Area, Gavern Lane on the west side of Bradshaw Road, and Bar Du Lane on the south side of the Plan Area.

REGULATORY SETTING

In order to limit population exposure to physically and/or psychologically damaging noise levels, the State of California and Sacramento County have established standards and ordinances to control noise.

STATE OF CALIFORNIA

The California Department of Health Services' (DHS) Office of Noise Control has studied the correlation of noise levels and their effects on different land uses. As a result, the DHS has established four categories for judging the severity of noise intrusion on specified land use. Noise in the "normally acceptable" category places no undue burden on affected receptors and would need no mitigation. As noise rises into the "conditionally acceptable" range, some mitigation of exposure, as established by an acoustic study, would be warranted. At the next level, noise intrusion is so severe that it is classified "normally unacceptable" and would require extraordinary noise reduction measures to avoid disruption. Finally, noise in the "clearly unacceptable" category is so severe that it cannot be mitigated.

Title 24 of the California Administrative Code establishes standards governing interior noise levels that apply to all new multifamily residential units in California. The standards require that acoustical studies be performed prior to construction at building locations where the existing L_{dn} exceeds 60 dBA. Such acoustical studies are required to establish mitigation measures that will limit maximum L_{dn} noise levels to 45 dBA in any inhabitable room. The U.S. Department of Housing and Urban Development (HUD) has set an L_{dn} of 45 as its goal for interior noise in residential units built with HUD financing.

COUNTY GENERAL PLAN NOISE ELEMENT

In accordance with State noise regulations, the Sacramento County General Plan Noise Element sets forth land use compatibility criteria for various community noise levels, as shown on Table 9-1. For noise generated by transportation noise sources (roads and railroads), the Noise Element specifies that residential land uses are unconditionally compatible with exterior noise levels of up to 60 dB L_{dn}[1]. The 60 dB L_{dn} noise level is

[1] Ldn is the average day/night level where nighttime noise (10pm-7am) is mathematically increased by 10 decibels before averaging to account for increased sensitivity to nighttime noise. CNEL is the community

considered an acceptable noise environment for residential outdoor activities. Where the exterior noise level from transportation sources is between 60 and 75 dB L_{dn}, the Noise Element specifies that residential uses should be permitted only after careful study and inclusion of noise reduction, or attenuation measures as needed. In these instances, an exterior noise level of 65 dB L_{dn} may be allowed in outdoor activity areas provided that "all practical" exterior noise reduction measures are applied.

An interior noise level criteria of 45 dB L_{dn} is specified in the Noise Element for residential land uses exposed to transportation noise sources. The intent of this interior noise standard is to provide a suitable environment for indoor communication and sleep. For noise generated by non-transportation noise sources (industrial and commercial machinery and uses, etc.), the Noise Element specifies that residential land uses are compatible with exterior daytime levels up to 80 dB L_{max}.

The Noise Element policies associated with transportation and non-transportation noise sources applicable to the current project are as follows:

Policy NO-1. Noise created by new transportation* noise sources should be mitigated so as not to exceed 60 dB L_{dn}/CNEL** at the outdoor activity areas of any affected residential lands or land use situated in the unincorporated areas. When a practical application of the best available noise-reduction technology cannot achieve the 60dB L_{dn} CNEL standard, then an exterior noise level of 65dB L_{dn} CNEL may be allowed in outdoor activity areas.

Policy NO-2. Noise created by new non-transportation noise sources shall be mitigated so as not to exceed any of the noise level standards of Table II-1 (*Table 9-2 of this EIR*), as measured immediately within the property line of any affected residentially designated lands or residential land use situated in the unincorporated areas.

Policy NO-3. Where proposed non-transportation noise sources are likely to produce noise levels exceeding the performance standards of Table II-1 (*Table 9-2 of this EIR*) at existing or planned residential uses, an acoustical analysis shall be required as part of the environmental review process so that noise mitigation may be included in the project design. (Requirements for the content of an acoustical analysis are given by Table II-2.)

Policy NO-4. Where residential land uses are proposed in areas exposed to existing or projected exterior noise levels exceeding either 60 dB

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noise equivalent level. Generally equal to the Ldn, CNEL calculations also penalize evening noises (7pm-10pm) by 5 decibels before calculating the average.

L_{dn}/CNEL or the performance standards of Table II-1 (*Table 9-2 of this EIR*), an acoustical analysis shall be required as part of the environmental review process so that noise mitigation may be included in the project design.

Table 9-1
County Land Use Compatibility for Community Noise Environments

LAND USE CATEGORY	**COMMUNITY NOISE ENVIRONMENTS** L_{dn} or CNEL dB					
	55	60	65	70	75	80
RESIDENTIAL Including AR-1 and AR-2						
AGRICULTURAL RESIDENTIAL 5 and 10 acres						
TRANSIENT LODGING-MOTELS, HOTELS						
SCHOOLS, LIBRARIES, CHURCHES, HOSPITALS, NURSING HOMES						
AUDITORIUMS, CONCERT HALLS, AMPHITHEATRES, SPORTS ARENAS						
PLAYGROUNDS, NEIGHBORHOOD PARKS						
GOLF COURSES, RIDING STABLES, WATER RECREATION, CEMETERIES						
OFFICE BUILDINGS, BUSINESS COMMERCIAL AND PROFESSIONAL						
INDUSTRIAL, MANUFACTURING, UTILITIES, AGRICULTURE						
OPEN SPACE, AGRICULTURE						

	ACCEPTABLE: Specified land use is satisfactory.

	CONDITIONALLY ACCEPTABLE Use should be permitted only after careful study and inclusion of protective measures as needed for intended use and to satisfy policies of the Noise Element
	UNACCEPTABLE: Development not feasible in accordance with Noise Element. Use prohibited

Policy NO-5 New residential development shall not be allowed where the noise level due to non-transportation noise sources will exceed the noise level standards of Table II-1 (*Table 9-2 of this EIR*), as measured immediately within the property line of the new development.

Policy NO-6. The compatibility of proposed nonresidential projects with existing and future noise levels due to transportation noise sources shall be evaluated through a comparison to Figure II-1, "Land Use Compatibility for Community Noise Environments" and Table II-3, "Acceptable Noise Levels in Unoccupied Rooms" (*Table 9-3 of this EIR*), and to Figure II-4 for projects affected by aircraft noise.

Policy NO-7. Proposed development of residential land uses should not be permitted: 1) In areas exposed to existing or projected levels of noise from transportation noise sources which exceed 60 dB to 65 dB L_{dn}/CNEL unless the project design includes effective mitigation measures to reduce noise to 60 dB to 65 dB L_{dn}/CNEL or less in outdoor activity areas, and 45 dB L_{dn}/CNEL or less in indoor areas; and 2) For 5 and 10 acre Agricultural-Residential land use the standard for exterior noise is also 60 dB to 65 dB L_{dn}/CNEL. The standard remains at 45 dB L_{dn}/CNEL for interior noise levels.

Table 9-2
Sacramento County Noise Level Performance Standards
For Residential Areas Affected by Non-transportation Noise

Statistical Noise Level Descriptor	**Exterior Noise Level Standard**	
	Daytime (7am-10pm)	**Nighttime (10pm-7am)**
L_{50}	50 dB	45 dB
L_{max}	70 dB	65 dB

Source: Sacramento County Noise Element, Table II-1 (p.7).

Table 9-3
Acceptable Noise Levels in Unoccupied Rooms Affected by Transportation Noise

Location	Average Sound Level, dB [1]
Radio studios, recording studios	25-30
Concert halls, large auditoriums	30-35
Motion picture theaters	40-45
Conference rooms, small offices	40-45
Public offices (large), banks, stores	45-50
Restaurants, cafeterias	45-55
Libraries	40-45
Music rooms	30-35
Theaters (speech)	30-35
Churches	35-40
Classrooms	35-45
Hospitals	40-45
Court rooms	40-45

[1] L_{eq} during worst case hour when in use.

Source: Brown Buntin & Associates. *Environmental Noise Analysis, North Vineyard Station Specific Plan*, December 4, 1996.

COUNTY NOISE CONTROL ORDINANCE

Noise generated by non-transportation noise sources are regulated by the County Noise Ordinance as summarized in Table 9-4.

RAILROADS

The Sacramento County General Plan Noise Element includes operational information from the three railroad companies within the County (Southern Pacific, Union Pacific, and Central California Traction). This information was used as inputs to the “Simplified Procedure for Assessment of Noise Emitted by On-Line Railroad Operations”, prepared by Wyle Laboratories in 1974. The Wyle laboratories methodology for prediction of railroad noise exposure is recommended by the State Office of Noise Control, and is considered to be reasonably accurate for generalized noise contour development. The operational information collected included average number of and nighttime trains, train speeds and warning horn usage locations. To ensure that railroad noise modeling methods would accurately portray noise levels in Sacramento County, noise measurements were performed at several locations in the County. Single event noise level information collected at each measurement site included the maximum noise level, duration and Sound Exposure Level (SEL) of each train passage. The reported and observed number of operations, and the noise measurement and prediction results are contained in Table 9-5.

Table 9-4
Sacramento County Noise Ordinance Standards

Cumulative Duration of the Intrusive Sound	Descriptor	Exterior Noise Standard, dB	
		Daytime (7am-10pm)	Nighttime (10pm-7am)
30-60 minutes per hour	L_{50}	55	50
15-30 minutes per hour	L_{25}	60	55
5-15 minutes per hour	L_{08}	65	60
1-5 minutes per hour	L_{02}	70	65
Level not to be exceeded at any time	L_{max}	75	70

Table 9-5
Operational Information and Noise Measurement Results
Sacramento County Railroads

	Total Daily Trains		Nighttime Trains		L_{dn}, dB at 100 feet		Distance to 60 dB L_{dn} Noise Contour
Railroad	Reported	Observed	Reported	Observed	Wyle	Computed *	
SPRR							
North	40	37	16 – 20	23	77	67	1360
South	20	19	8 – 10	8	74	70	860
Placerville	2	-	0	-	57	-	60
Ione	N/A**	-	-	-	-	-	-
UPRR							
North	15	17	5	7	72	70	630
South	15	7	5	3	72	69	630
CCTC	2	-	0	-	57	-	60

*L_{dn} values computed from noise measurement results and reported operational data.

**The Ione branch line is used infrequently by “local” freights, and no specific operational data are available

NON-REGULATORY SETTING

SUBJECTIVE REACTIONS TO CHANGES IN NOISE LEVELS

Another means of assessing noise impact is to estimate public reaction to the change in noise level which result from a given project. Expected human reaction to changes in ambient noise levels have been quantified by metrics that define short-term exposure (e.g. hourly L_{eq}, L_{max}, and L_n). These metrics are usually used to describe noise impacts due to industrial operations, machinery and other sources that are not associated with transportation. An increase of at least 3 dB is usually required before most people will perceive a change in noise levels, and an increase of 5 dB is required before the change will be clearly noticeable.

Table 9-6 is used to show expected public reaction to changes in environmental noise levels. This table was developed on the basis of test subjects' reactions to changes in the levels of steady-state pure tones or broad-band noise and to changes in levels of a given noise source.

Table 9-7 is based upon 1992 recommendations made by the Federal Interagency Committee on Noise (FICON) to provide guidance in the assessment of changes in ambient noise levels resulting from aircraft operations. FICON recommendations are based upon studies that relate aircraft noise levels to the percentage of persons highly annoyed by the noise. Although the FICON recommendations were specifically developed to assess aircraft noise impacts, it has been assumed for this analysis that they are applicable to all sources of noise that are described in terms of cumulative noise exposure metrics such as the L_{dn} or CNEL.

Table 9-6
Subjective Reaction to Changes in Noise Levels of Similar Sources

Change in Level, dB	Subjective Reaction	Factor Change in Acoustical Energy
1	Imperceptible (Except for tones)	1.3
3	Just Barely Perceptible	2.0
5	Clearly Noticeable	3.2
10	About Twice (or Half) as loud	10.0

Source: *Architectural Acoustics, M. David Egan, 1988.*

Table 9-7
Significance of Changes in Cumulative Noise Exposure

Ambient Noise Level Without Project (L_{dn} or CNEL)	Significant Impact
<60 dB	+5.0 dB or more
60-65 dB	+3.0 dB or more
>65 dB	+1.5 dB or more
Source: Federal Interagency Committee on Noise (FICON), as applied by Brown-Buntin Associates, Inc.	

NOISE ANALYSIS

PRIOR NOISE STUDY FOR NVSSP

In accordance with Policies NO-3 and NO-4, an environmental noise analysis was prepared for the Specific Plan by Acoustical Consultants, Brown Buntin and Associates (BBA). The analysis concluded that the following measure would be implemented for any new development within the Specific Plan Area:

> Future noise sensitive residential land uses proposed for development within the future 60 dB L_{dn} traffic or railroad operation noise contours shall be required to prepare an acoustical analysis and to implement identified noise attenuation measures necessary to ensure compliance with the noise standards of the County General Plan Noise Element.

In accordance with this measure, acoustical analyses have been prepared for the Vineyard Creek subdivision, Vineyard Point subdivision, and the proposed water treatment facility. The acoustical consulting firm of Bollard and Brennan, Inc. was retained by the project applicant to prepare these analyses.

VINEYARD CREEK SUBDIVISION

TRAFFIC NOISE PREDICTION METHODOLOGY

Bollard and Brennan, Inc. employs the Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA RD-77-108) for the prediction of traffic

noise levels. The FHWA model is the analytical method currently favored for traffic noise prediction by most state and local agencies, including the California Department of Transportation (Caltrans). The model is based upon the CALVENO noise emission factors for automobiles, medium trucks and heavy trucks, with consideration given to

vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site.

On June 9, 2003, Bollard and Brennan, Inc. conducted noise level measurements and concurrent counts of Florin Road traffic at the project site. The purpose of the short-term traffic noise level measurement was to determine the accuracy of the FHWA model in describing the existing noise environment on the project site, actual travel speeds, and roadway grade. Noise measurement results were compared to the FHWA model results by entering the observed traffic volume, speed, and distance as inputs to the FHWA model. See Plate NS -1 for noise measurement locations.

Instrumentation used for the measurement was a Larson Davis Laboratories (LDL) Model 820 precision integrating sound level meter which was calibrated in the field before use with and LDL CA-200 acoustical calibrator. Table 9-8 shows the results of the traffic noise calibration. Based upon the calibration results, the FHWA Model was found to accurately predict Florin Road traffic noise levels within 0.6 dB of the measured noise levels on the project site.

Existing Traffic Noise Levels

Average daily traffic volumes for existing conditions were obtained from the traffic study performed for the NVSSP Phasing Analysis (Fehr & Peers Associates April 3, 2003). The day/night distribution was derived from Bollard and Brennan, Inc. file data for similar roadways. The percentages of medium and heavy trucks were estimated from Bollard and Brennan traffic counts. Estimated future traffic speed assumptions were based on posted speed limits and field observations. The FHWA Model inputs are contained in Table 9-9.

The FHWA model was used with the Table 9-9 data to predict future traffic noise levels at the project site. The results of that analysis at the identified locations of future outdoor activity areas (back yards) within the development are shown in Table 9-10.

Table 9-8
Comparison of FHWA Model to Measured Florin Road Traffic

Vehicles/Hr.				Speed (mph)	Dist. (Feet)[1]	Measured Leq , dB	Modeled Leq, dB[2]	Difference
Site	Autos	Med. Trk	Hvy. Trk					
1	328	16	4	50	50	63.8	64.4	+0.6 dB

[1] The noise measurement location is from the roadway centerline.
[2] Acoustically “soft” site assumed

Table 9-9
FHWA Traffic Noise Prediction Model Inputs, Existing Conditions
(Vineyard Creek Subdivision)

Roadway	Future ADT	Day/Night	Medium Trucks	Heavy Trucks	Speed
Florin Road	7,800	83%/17%	3.5%	2%	45 mph
Waterman Road	N/A	83%/17%	3.5%	2%	45%

Source: Traffic Study for the NVSSP Phasing Analysis, and Bollard and Brennan, Inc. file data.

Table 9-10
Existing Traffic Noise Levels
(Vineyard Creek Subdivision)

Location	Distance from Backyard to Roadway Centerline	Computed L_{dn}, dB (unmitigated)	Distance to 60 dB Contour	Distance to 65 dB Contour
Florin Road	100’	63	153’	71’
Waterman Road	NA[1]	NA	NA	NA

[1]Waterman Road does not yet exist on the site.

PREDICTED FUTURE TRAFFIC NOISE LEVELS

The FHWA model was used with the Table 9-11 data to predict future traffic noise levels at the project site. The results of that analysis, at the identified locations of future outdoor activity areas (backyards), within the development, are shown in Table 9-12.

Table 9-11
FHWA Traffic Noise Prediction Model Inputs, Future Conditions
(Vineyard Creek Subdivision)

Roadway	Future ADT	Day/Night	Medium Trucks	Heavy Trucks	Speed
Florin Road	19,300	83%/17%	3.5%	2%	45 mph
Waterman Road	8,700	83%/17%	3.5%	2%	45%

Source: Traffic Study for the NVSSP Phasing Analysis, and Bollard and Brennan, Inc. file data.

Table 9-12
Predicted Future Traffic Noise Levels
(Vineyard Creek Subdivision)

Location	Distance from Backyard to Roadway Centerline	Computed L_{dn}, dB (unmitigated)	Distance to 60 dB Contour	Distance to 65 dB Contour
Florin Road	100’	67	280’	130’
Waterman Road	80’	65	165’	76’

EXTERIOR TRAFFIC NOISE LEVELS

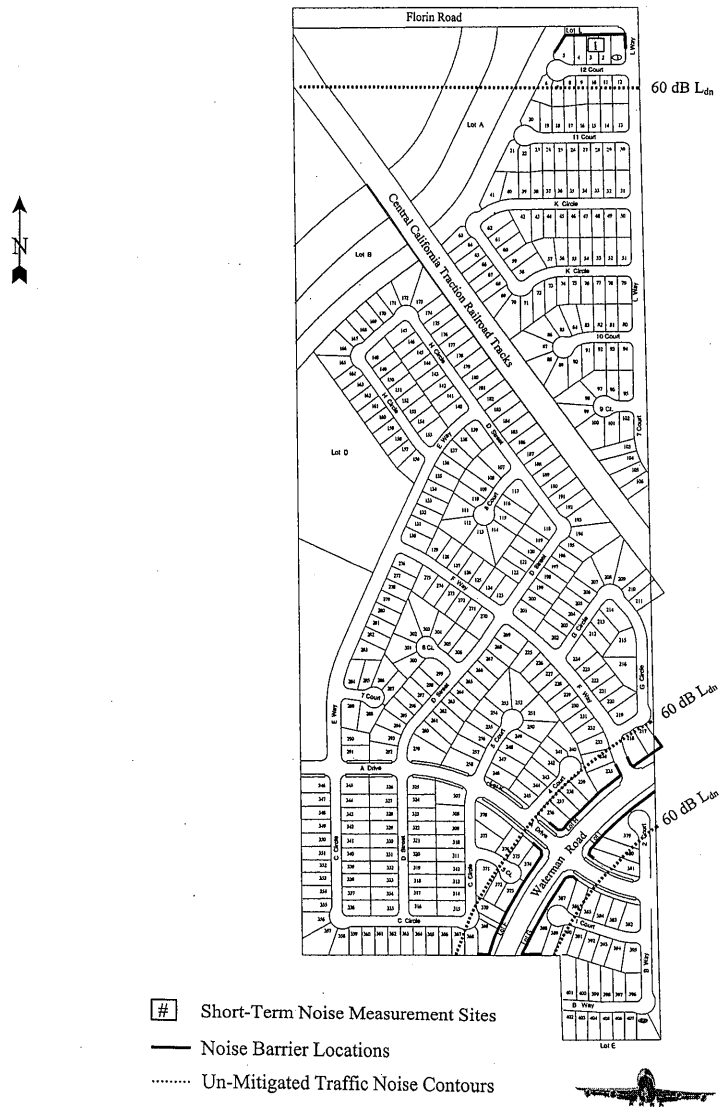
It is apparent from the Table 9-12 data that the residences proposed nearest to Florin Road and Waterman Road would be exposed to future traffic noise levels which exceed the 60 dB L_{dn} Sacramento County Noise Element standard. The ~~Table XX~~ Table 9-12data indicate that the predicted future unmitigated traffic noise levels in the nearest proposed lots adjacent to Florin Road and Waterman Road would be approximately 67 db L_{dn} and 65 dB L_{dn} respectively.

To achieve compliance with the Sacramento County 60 dB L_{dn} exterior noise level standard, Bollard and Brennan, Inc. evaluated the effectiveness of a solid noise barrier in reducing future Florin Road and Waterman Road traffic noise levels for this development.

The FHWA Model traffic noise barrier insertion loss methodology was used to determine the noise reduction which would be provided by a noise barrier of various heights. All assumptions were per usual FHWA practice, with the receiver located at a height of 5 feet above ground in the approximate center of the back yard area, and the autos, medium and heavy trucks located at heights of 0,2 and 8 feet above the roadway elevation, respectively. The summarized results of the FHWA barrier analysis for the receivers located nearest to Florin Road and Waterman Road are contained in Table 9-13.

Plate NS -1
Noise Measurement Sites and Barrier Locations
(Vineyard Creek Subdivision)

Figure 2
Vineyard Creek Subdivision
Noise Measurement Sites and Barrier Locations



Bollard & Brennan, Inc.

Table 9-13
Predicted Future Traffic Noise Levels with Varying Property Line Barrier Heights (Vineyard Creek Subdivision)

Roadway	Location	Barrier Height	Predicted L_{dn}, dB
Florin Road	Property Line	6’	61
		7’	60
		8’	59
Waterman Road	Property Line	6’	59
		7’	58
		8’	57
Note: All barriers are assumed to be located at the rear of the residential backyards. The distance shown reflects the approximate locations of the center of the backyards to the roadway centerline.			

The Table 9-13 data indicate that barrier heights of 7-feet and 6-feet would be required to reduce future traffic noise levels to less than 60 dB L_{dn} at the lots proposed nearest to Florin Road and Waterman Road, respectively. A 30-foot barrier wrap should be provided at the ends of all barriers in order to provide complete shielding to the outdoor areas. Openings for access roads should wrap a minimum of 10-feet. Barrier locations are shown in Plate ~~XX~~NS-1.

Interior Traffic Noise Levels

The Table 9-12 data indicate that future Florin Road and Waterman Road traffic noise levels at the unshielded first-floor locations of the nearest residences would be approximately 67 dB L_{dn} and 65 dB L_{dn}, respectively. Following construction of the property line noise barriers, future traffic noise levels at first floor facades will be 60 dB L_{dn} or less. Due to reduced ground absorption at elevated positions, second floor noise levels are generally about 2-3 dB higher than unshielded first floor locations (70 dB L_{dn} and 68 dB L_{dn}). To achieve compliance with the Sacramento County 45 dB L_{dn} interior noise level standard at exposed second floor locations nearest to the roadways, building façade noise level reductions of approximately 25 dB and 23 dB would be required. At first floor facades, a building façade noise reduction of 15 – 20 dB would be required.

Standard residential construction (wood siding, STC-28 windows, door weatherstripping, exterior wall insulation, composition plywood roof), results in an exterior to interior noise reduction of about 25 dB with windows closed, and approximately 15 dB with windows open. Therefore, standard construction would be acceptable for first and second floor facades.

Evaluation of Future Railroad Noise Levels

The CCTC railroad tracks cross diagonally through the project site. According to a representative of the Sacramento Area Council of Governments (SACOG), the CCTC

no longer uses these tracks and they have not been used in over 2 years. In addition, there are currently no plans for use of these tracks for either light or heavy rail.

Based upon the Vineyard Creek Tentative Map, residential property lines are located 50 feet from the railroad track centerline, and therefore, the property lines are inside of the 60 dB L_{dn} noise level contour, associated with the CCTC operations. However, all residential outdoor activity areas within the Vineyard Creek subdivision are a minimum of 10 feet from the property line, and are therefore, located outside of the 60 dB L_{dn} CCTC noise contour.

IMPACTS

Residences proposed nearest to Florin Road and Waterman Road would be exposed to future traffic noise levels that exceed the 60 dB L_{dn} Sacramento County Noise Element Standard. This impact is considered significant.

MITIGATION MEASURES

NO-1. A 7-foot tall property line barrier along Florin Road and a 6-foot tall property line barrier along Waterman Road, shall be constructed. Sufficient barrier wrap should be provided as shown in Plate NS -1.

VINEYARD POINT SUBDIVISION

TRAFFIC NOISE PREDICTION MODEL

Bollard and Brennan, Inc. employs the Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA RD-77-108) for the prediction of traffic noise levels. The FHWA model is the analytical method currently favored for traffic noise prediction by most state and local agencies, including the California Department of Transportation (Caltrans). The model is based upon the CALVENO noise emission factors for automobiles, medium trucks and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site.

On June 9, 2003, Bollard and Brennan, Inc. conducted noise level measurements and concurrent counts of Bradshaw Road and Gerber Road traffic at the project site. The purpose of the short-term traffic noise level measurement was to determine the accuracy of the FHWA model in describing the existing noise environment on the project site, actual travel speeds, and roadway grade. Noise measurement results were compared to the FHWA model results by entering the observed traffic volume, speed, and distance as inputs to the FHWA model. See Plate NS -2 for noise measurement locations.

Instrumentation used for the measurement was a Larson Davis Laboratories (LDL) Model 820 precision integrating sound level meter which was calibrated in the field

before use with and LDL CA-200 acoustical calibrator. Table 9-14 shows the results of the traffic noise calibration. Based upon the calibration results, the FHWA Model was found to accurately predict Florin Road traffic noise levels within 0.6 dB of the measured noise levels on the project site.

Table 9-14
Comparison of FHWA Model to Measured
Bradshaw Road and Gerber Road Traffic

Vehicles/Hr.				Speed (mph)	Dist. (feet)[1]	Measured L_{eq}, dB	Modeled L_{eq}, dB[2]	Difference
Site	Autos	Med. Trk.	Hvy. Trk.					
1	1292	32	40	45	60	67.0	68.6	+1.6dB
2	804	48	8	50	60	66.1	67.2	+1.1dB
3	692	32	0	50	60	65.9	65.8	-0.1dB

[1]The noise measurement location is from the roadway centerline
[2]Acoustically "soft" site assumed

Existing Traffic Noise Levels

Average daily traffic volumes for existing conditions were obtained from the traffic study performed for the NVSSP Phasing Analysis (Fehr & Peers Associates April 3, 2002). The day/night distribution was derived from Bollard and Brennan, Inc. file data for similar roadways. The percentages of medium and heavy trucks were estimated from Bollard and Brennan traffic counts. Estimated future traffic speed assumptions were based on posted speed limits and field observations. The FHWA Model inputs are contained Table 9-15.

The FHWA model was used with the Table 9-15 data to predict existing traffic noise levels at the project site. The results of that analysis at the identified locations of future outdoor activity areas (back yards) within the development are shown in Table 9-16

Plate NS -2
Noise Measurement Sites and Barrier Locations
(Vineyard Point Subdivision)

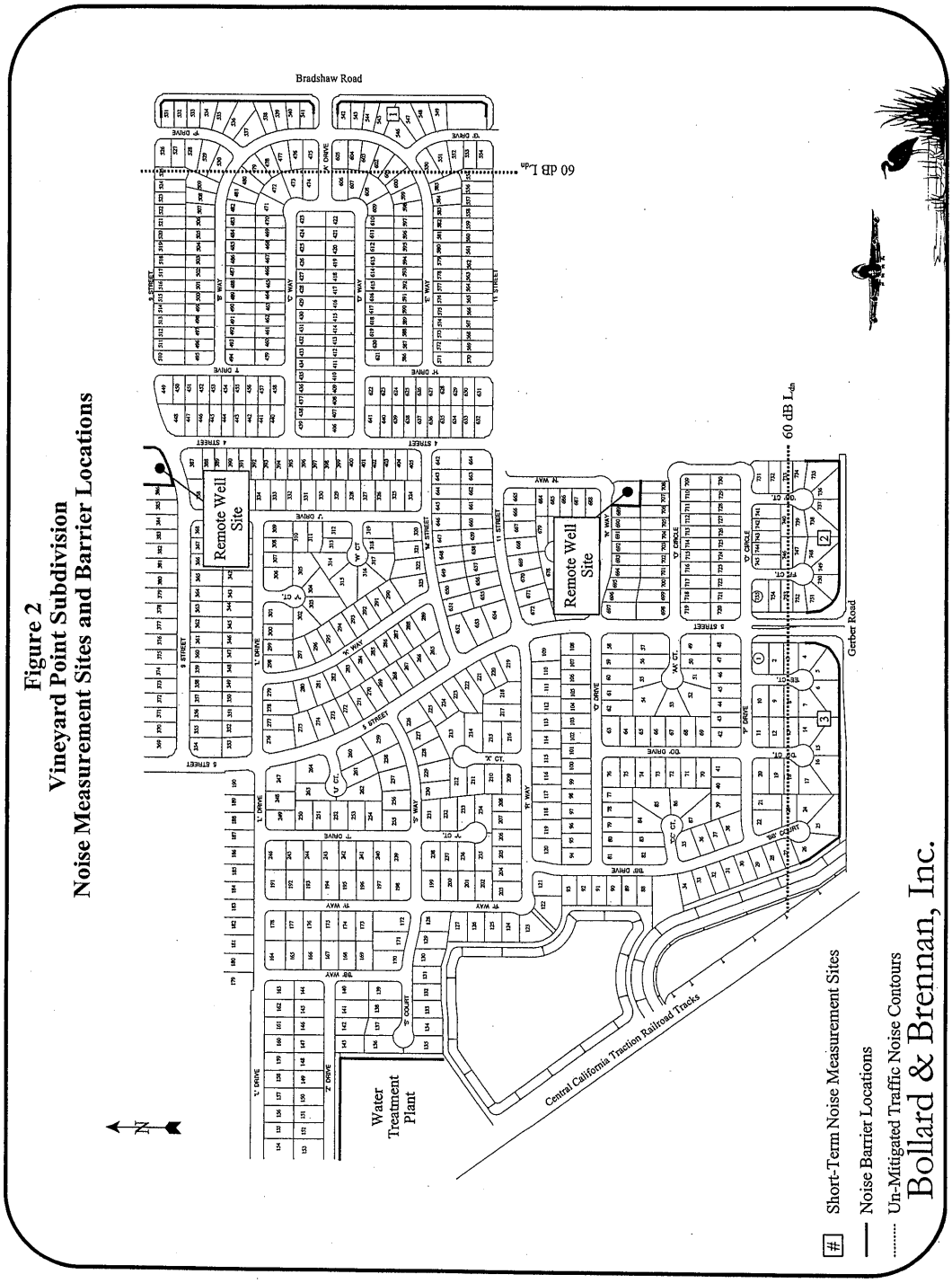


Table 9-15
FHWA Traffic Noise Prediction Model Inputs, Existing Conditions
(Vineyard Point Subdivision)

Roadway	Future ADT	Day/Night	Medium Trucks	Heavy Trucks	Speed
Bradshaw Road	14,500	83%/17%	2.5%	2%	45 mph
Gerber Road	7,500	83%/17%	2.5%	2%	45mph
Source: Traffic Study for the NVSSP Phasing Analysis, and Bollard and Brennan, Inc. file data.					

Table 9-16
Existing Traffic Noise Levels
(Vineyard Point Subdivision)

Location	Distance from Backyard to Roadway Centerline	Computed L_{dn}, dB (unmitigated)	Distance to 60 dB Contour	Distance to 65 dB Contour
Bradshaw Road	90’	66	226’	105’
Gerber Road	80’	64	145’	68’

FUTURE TRAFFIC NOISE LEVELS

Average daily traffic volumes for future conditions were obtained from the traffic study performed for the NVSSP Phasing Analysis (Fehr & Peers Associates April 3, 2003). The day/night distribution was derived from Bollard and Brennan, Inc. file data for similar roadways. The percentages of medium and heavy trucks were estimated from Bollard and Brennan traffic counts. Estimated future traffic speed assumptions were based on posted speed limits and field observations. The FHWA Model inputs are contained in Table 9-17.

Table 9-17
FHWA Traffic Noise Prediction Model Inputs, Future Conditions
(Vineyard Point Subdivision)

Roadway	Future ADT	Day/Night	Medium Trucks	Heavy Trucks	Speed
Bradshaw Road	26,500	83%/17%	3.5%	2%	45 mph
Gerber Road	17,100	83%/17%	3.5%	2%	45mph
Source: Traffic Study for the NVSSP Phasing Analysis, and Bollard and Brennan, Inc. file data.					

Predicted Future Traffic Noise Levels

The FHWA model was used with the Table 9-17 data to predict future traffic noise levels at the project site. The results of that analysis at the identified locations of future outdoor activity areas (back yards) within the development are shown in Table 9-18.

Table 9-18
Predicted Future Traffic Noise Levels
(Vineyard Point Subdivision)

Location	Distance from Backyard to Roadway Centerline	Computed L_{dn}, dB (unmitigated)	Distance to 60 dB Contour	Distance to 65 dB Contour
Bradshaw Road	90’	69	337’	157’
Gerber Road	80’	67	252’	117’

Exterior Noise Levels

It is apparent from the Table 9-18 data that the residences proposed nearest to Bradshaw Road and Gerber Road would be exposed to future traffic noise levels that exceed the 60 dB Ldn Sacramento County Noise Element standard. The Table 9-18 data indicate that the predicted future unmitigated traffic noise levels in the nearest proposed lots adjacent to Bradshaw Road and Gerber Road would be approximately 69 dB Ldn and 67 Ldn, respectively.

To achieve compliance with the Sacramento County 60 dB Ldn exterior noise level standard, Bollard and Brennan, Inc. evaluated the effectiveness of a solid property line barrier in reducing future Bradshaw Road and Gerber Road traffic noise levels for this development.

The FHWA model traffic noise insertion loss methodology was used to determine the noise reduction that would be provided by property line barriers of various heights. All assumptions were per usual FHWA practice, with the receiver located at a height of 5 feet above ground in the approximate center of the back yard area, and the autos, medium and heavy trucks located at heights of 0,2, and 8 feet above the roadway elevation, respectively. The summarized results of the FHWA barrier analysis for the receivers located nearest to Bradshaw Road and Gerber Road are contained in Table 9-19.

Table 9-19
Predicted Future Traffic Noise Levels with Varying Property Line Barrier Heights (Vineyard Point Subdivision)

Roadway	Location	Barrier Height	Predicted L_{dn}, dB
Bradshaw Road	Property Line	6’	63
		7’	62
		8’	61
		9’	60
		10’	59
Gerber Road	Property Line	6’	61
		7’	61
		8’	59
		9’	58
		10’	57
Note: All barriers are assumed to be located at the rear of the residential backyards. The distance shown reflects the approximate locations of the center of the backyards to the roadway centerline.			

The Table 9-19 data indicate that barrier heights of 9 and 8 feet would be required to reduce future traffic noise levels to less than 60 dB Ldn at the lots proposed nearest to Bradshaw Road and Gerber Road, respectively. A 30-foot barrier wrap should be provided at the ends of all barriers in order to provide complete shielding to the outdoor areas. Openings for access roads should wrap a minimum of 10-feet. Barrier locations are shown in Plate NS -2.

INTERIOR TRAFFIC NOISE LEVELS

The Table 9-18 data indicate that future Bradshaw Road and Gerber Road traffic noise levels at the unshielded first-floor locations of the nearest residences would be approximately 69 dB Ldn and 67 dB Ldn. Following construction of the property line

barriers, future traffic noise levels at first floor facades will be 60 dB Ldn or less. Due to reduced ground absorption at elevated positions, second floor noise levels are generally about 2 – 3 dB higher than unshielded first floor locations (72dB Ldn and 70 dB Ldn). To achieve compliance with the 45 dB Ldn interior noise level standard of the Sacramento County at exposed second floor locations nearest to the roadways, building facade noise level reductions of approximately 27 dB and 25 dB would be required. Standard residential construction (wood siding, STC-28 windows, door weatherstripping, exterior wall insulation, composition plywood roof), results in an exterior to interior noise reduction of about 25 dB with windows closed, and approximately 15 dB with windows open. Therefore, standard construction would be acceptable for first floor facades since those facades would be shielded by the required property line barrier. However, improvements to second-floor bedroom window assemblies are recommended for the lots adjacent to Bradshaw Road to achieve compliance with the County's interior noise level standard. In addition, mechanical ventilation (air conditioning) should be provided to allow occupants to close doors and windows to achieve the desired traffic noise isolation.

To satisfy the interior noise level standard of 45 dB at the second floor facades of the residences constructed adjacent to Bradshaw Road, all second-floor bedroom windows, from which the roadway is visible, should have a minimum sound transmission class (STC) rating of 30.

Evaluation of Future Railroad Noise Levels

The CCTC railroad tracks border the west side of the project site. According to a representative of the Sacramento Area Council of Governments (SACOG), the CCTC no longer uses these tracks and they have not been used in over 2 years. In addition, there are currently no plans for use of these tracks for either light or heavy rail.

Based upon the Vineyard Point Tentative Map, residential property lines are located outside the 60 dB Ldn CCTC noise contour.

Impacts

Residences proposed nearest to Bradshaw Road and Gerber Road would be exposed to future traffic noise levels that exceed the 60 dB L_{dn} Sacramento County Noise Element Standard. This impact is considered significant.

Mitigation Measures

NO-2. A 9-foot tall property line barrier along Bradshaw Road and an 8-foot tall property line barrier along Gerber Road, shall be constructed. Sufficient barrier wrap should be provided as shown in Plate NS -2.

NO-3. STC-30 windows shall be installed in the second floor of the first row of houses which are adjacent to Bradshaw Road. In these houses, only second floor windows with a direct view of Bradshaw Road need to be upgraded.

EVALUATION OF WATER TREATMENT FACILITY AND WELL SITES

WATER TREATMENT FACILITY

Noise from activities at the water treatment facility, may result in noise levels which exceed the Sacramento County hourly noise criteria for non-transportation noise sources. The most significant noise sources at the water treatment plant will be the booster pumps, electric motors, and the emergency generator.

As a means of determining the likely noise impacts associated with the booster pumps and motors, Bollard and Brennan, Inc. conducted noise level measurements of a similar pump assembly at the SSWD Northrop Darnejo #68 Pump Station in Sacramento on March 4, 2003. The pump and motor assembly included a 150-horse power Newton electric motor and Johnson pump.

Instrumentation used for collecting overall A-weighted sound levels and linear frequency data included a Larson Davis (LD) Model 824 precision integrating sound level meter and real time analyzer which is capable of narrow-band and 1/3 octave band frequency analysis. The equipment meets ANSI standards for precision sound level meters and narrow band filters. The equipment was calibrated in the field before use with an LDL CA200 acoustical calibrator. Table 9-20 and Table 9-21 show the results of the noise level measurements.

Table 9-20
Pump and Motor Overall A-Weighted Noise Level Measurement Results
March 4, 2003

Site	Distance	Measured Sound Level, dBA		Comments
		L_{50}	L_{max}	
A	2 feet	84.6	85.1	Pump motor is primary noise source
B	20 feet	70.8	73.1	Pump motor is primary noise source

Table 9-21
Pump and Motor Octave Band Noise Level Measurement Results
March 4, 2003

Site	Distance	Linear Sound Level for each Octave Band Center Frequency (Hz)								
		31.5	63	125	250	500	1k	2k	4k	8k
A	2 feet	68.0	75.5	82.4	78.0	81.5	80.4	77.0	73.9	72.7
B	20 feet	56.5	61.1	65.4	62.7	65.6	67.0	63.2	60.9	59.8

Residential uses are located to the north and east of the proposed water treatment facility. The nearest residential property line is located approximately 150 feet from the booster pumps. Based upon the noise level measurement data contained within Table 9-20, the predicted noise level at the backyard of the nearest residence is 53 dB L_{50}. This level exceeds the Sacramento County hourly noise criteria of 50 dB L_{50} for daytime noise and the 45 dB L_{50} criteria for nighttime noise. Since the booster pumps are expected to operate during the nighttime hours, it is recommended that noise control measures, which will reduce overall pump noise levels by a minimum of 8 dBA, be included in the project design. According to the project design, the treatment facility will be bordered by 7-foot masonry sound walls on the north and east sides. Bollard and Brennan, Inc. evaluated the effectiveness of these property line barriers in reducing noise levels associated with the booster pumps and electric motors. The results of this analysis are shown in Table 9-22. Barrier locations are shown in Plate NS -2.

Table 9-22
Predicted Water Treatment Facility Noise Levels
with Varying Property Line Barrier Heights
(Vineyard Point Subdivision)

Source	Location	Barrier Height	Noise Reduction, dB	Predicted L_{50}, dB
Water Treatment Plant	Property Line	6’	-5.2	47.8
		7’	**-6.1**	**46.9**
		8’	-7.2	45.8
		9’	-8.3	44.7

The data in Table 9-22 indicate that a 7-foot property line barrier would reduce booster pump noise by 6.1 dB to an overall level of 46.9 dB L_{50}. This level still exceeds the Sacramento County nighttime noise criteria of 45 dB L_{50}. The use of a 7-foot tall property line barrier would not be sufficient to reduce nighttime noise levels to within the Sacramento County hourly noise criteria.

The project engineers for the treatment facility (Luhdorff and Scalmanini) have stated the desire of enclosing the pump assemblies within a concrete building in order to provide noise reduction, improved aesthetics, and security. Such a building could provide a significant reduction in overall pump noise levels. However, ventilation

requirements may be needed for the equipment, therefore, openings for air flow will be required, which may compromise noise control.

A typical concrete building would provide a 20 dB minimum noise reduction. To ensure adequate air flow for the electrical equipment, all openings in the concrete building must be fitted with acoustical louvers or silencers similar to Vibron Brand Low Frequency Rectangular Silencers Model VRS-SV. The silencers should be applied to the supply and return air sides. The silencers or louvers should provide a minimum insertion loss of 10 – 15 dB at the 125 Hz through 1000 Hz frequency ranges.

Companies that provide silencers can provide assistance in determining proper air flow and pressure drop requirements are met.

Doors on the enclosure should have weather stripping to reduce flanking sound.

This type of structure, along with the proposed 7-foot tall property line barriers would be sufficient to reduce booster pump noise levels to within the Sacramento County nighttime noise criteria of 45 dB L_{dn}.

Emergency Generator Exhaust

The treatment facility will also include a backup diesel generator that could exceed the Sacramento County noise level standards. Table 9-23 provides manufacturers noise level data for an un-muffled exhaust stack for a single generator.

Table 9-23
Noise Level Data
Caterpillar 1000 ekW Standby Generator Exhaust Stack

Component	Overall Noise Level	Octave Band Center Frequency, Hz							
		63	125	250	500	1000	2000	4000	8000
Exhaust Stack	102 dB	94 dB	110 dB	105 dB	96 dB	94 dB	95 dB	95 dB	92 dB

The nearest residential property line to the exhaust stacks would be approximately 150 feet away. The predicted un-muffled exhaust noise level with the generator in operation is predicted to be 85 dBA at the backyard of the nearest residence. Assuming that the generator operates continually for one half of an hour while being exercised, the hourly L_{50} (sound level not to be exceeded 30 minutes of the hour) is 82 dBA. This level would exceed the daytime and nighttime noise level criteria of 50 dBA L_{50} and 45 dBA L_{50}, respectively.

Mufflers such as a Vibron-brand residential muffler, which is generally used in residential areas or hospitals will provide an overall noise level reduction of up to 47 dBA. Therefore, use of mufflers on the exhaust stacks would result in noise levels at the nearest residences of less than 45 dB L_{50}. The use of mufflers would reduce noise

levels within compliance with the Sacramento County daytime and nighttime exterior noise level criteria of 50 dBA L_{50} and 45 dBA L_{50}, respectively.

It is recommended that all routine exercising of the emergency generator is done during the weekday daytime hours. All doors to the generator enclosure should be in the closed position during the testing.

Use of this type of muffler and these operating procedures would result in a less than significant noise impact.

REMOTE WELL SITES

The project designers have proposed the use of vertical turbine pumps for use at the two remote well sites. The pumps are to be housed within concrete masonry buildings and surrounded by solid masonry walls at the adjacent residential property lines. The noise emissions of these pumps are expected to be similar to those shown in Table 9-23~~Table XX~~. Assuming that the pumps will be located in the middle of each of the sites, the nearest residential property lines would be approximately 40 feet from the backyard of the nearest residence. This level exceeds the Sacramento County hourly noise criteria of 50 dB L50 for daytime noise and the 45 dB L50 criteria for nighttime noise. Since the pump and motor assembly are expected to operate during the nighttime hours, it is recommended that the noise control measures, which will reduce overall pump noise levels by a minimum of 17 dBA, be included in the project design. According to the project designer, the remote well sites will be bordered by 7-foot masonry sound walls on the sides adjacent to residential properties. Bollard and Brennan, Inc. evaluated the effectiveness of this property line barrier in reducing noise levels associated with the booster pumps and electric motors. The results of this analysis are shown in Table 9-24.

Table 9-24
Predicted Water Treatment Facility Noise Levels
with Varying Property Line Barrier Heights
(Vineyard Point Subdivision)

Source	Location	Barrier Height	Noise Reduction, dB	Predicted L_{50}, dB
Remote Well Sites	Property Line	6’	-5.6	56.4
		7’	**-7.2**	**54.8**
		8’	-9.0	53.1
		9’	-10.4	51.6

The data in Table 9-24 indicate that a 7-foot property line barrier would reduce well pump noise by 7.2 dB to an overall level of 54.8 dB L_{50}. The use of a 7-foot tall property line barrier would not be sufficient to reduce nighttime noise levels to within the Sacramento County noise criteria of 45 dB L_{50}.

The project engineers have stated the desire of enclosing the remote well pump within a concrete building in order to provide noise reduction, improved aesthetics, and security. Such a building could provide a significant reduction in overall pump noise levels. However, ventilation requirements may be needed for the equipment, therefore, openings for air flow will be required, which may compromise noise control.

A typical concrete building would provide a 20 dB minimum noise reduction. To ensure adequate air flow for the electrical equipment, all openings in the concrete building must be fitted with acoustical louvers or silencers similar to Vibron Brand Low Frequency Rectangular Silencers Model VRS-SV. The silencers should be applied to the supply and return air sides. The silencers/louvers should provide a minimum insertion loss of 10-15 dB at the 125 Hz through 1000 Hz frequency ranges.

Companies that provide silencers can provide assistance in determining proper air flow and pressure drop requirements are met.

Doors on the enclosure should have weather stripping to reduce flanking sound.

This type of structure, along with the proposed 7-foot tall property line barriers would be sufficient to reduce remote well pump noise levels to within the Sacramento County Noise Criteria.

IMPACTS

Based upon the noise level measurement data contained within Table 9-20, the predicted noise level at the backyard of the nearest residence to the water treatment facility is 53 dB $L_{50.}$ This level exceeds the Sacramento County hourly noise criteria of 50 dB L_{50} for daytime noise and the 45 dB L_{50} criteria for nighttime noise. Since the booster pumps are expected to operate during the nighttime hours, it is recommended that noise control measures, which will reduce overall pump noise levels by a minimum of 8 dBA, be included in the project design.

The predicted un-muffled exhaust noise level with the emergency generator in operation is predicted to be 85 dBA at the backyard of the nearest residence. Assuming that the generator operates continually for one half of an hour while being exercised, the hourly L_{50} (sound level not to be exceeded 30 minutes of the hour) is 82 dBA. This level would exceed the daytime and nighttime noise level criteria of 50 dBA L_{50} and 45 dBA L_{50}, respectively.

The following mitigation measures will ensure that noise impacts associated with the project are less-than-significant.

MITIGATION MEASURES

NO-4. The water treatment facility should have 7-foot tall property line barriers at the adjacent residential property lines. In addition to the solid barriers, the pumps should be housed in concrete buildings with acoustical louvers/silencers and

weather stripping around the doors. The louvers/silencers must provide a minimum insertion loss of 10-15 dB at the 125 Hz through 1000 Hz frequency ranges.

NO-5. A muffler such as a Vibron brand residential muffler should be fitted on the exhaust stack at the water treatment facility in order to provide adequate noise reduction to meet the Sacramento County noise standards.

NO-6. Remote well (Pump) sites should have 7-foot tall property line barriers at the adjacent residential property lines. In addition to the solid barriers, the pumps should be housed in concrete buildings with acoustical louvers/silencers and weather stripping around the doors. The louvers/silencers must provide a minimum insertion loss of 10-15 dB at the 125 Hz through 1000 Hz frequency ranges.

10 BIOLOGICAL RESOURCES

INTRODUCTION

The prior FEIR indicated that the Plan Area contained a variety of biological resources including wetlands, vernal pools, and a variety of plant and animal species. This section looks in more detail at the current proposal including the Vineyard Creek and Vineyard Point subdivisions, the NVSSP Drainage Master Plan, and the NVSSP Water Treatment Facility.

REGULATORY SETTING

GENERAL PLAN (GP) CONSERVATION ELEMENT

Given that the project area contains tree resources, riparian resources, and wetlands, the following *Sacramento County General Plan* policies apply to the proposed projects.

The Conservation Element contains several policies designed to foster the protection of native and landmark trees, riparian vegetation, and wetlands.

CO-130 Make every effort to protect and preserve non-oak native, excluding cottonwoods, and landmark trees and protect and preserve native oak trees measuring 6 inches in diameter at 4.5 feet above the ground in urban and rural areas, excluding parcels zoned exclusively for agriculture.

CO-131 Native trees other than oaks, which cannot be protected, shall be replaced with in-kind species in accordance with established tree planting specifications, the combined diameter of which shall equal the combined diameter of the trees removed. In addition, with respect to oaks, a provision for a comparable on-site area for the propagation of oak trees may substitute for replacement of tree planting requirements at the discretion of the County Tree Coordinator when removal of a mature oak tree is necessary in accordance with consistent policy.

CO-132 If the project site is not capable of supporting all the required replacement trees, a sum equivalent to the replacement cost of the number of trees that cannot be accommodated shall be paid to the County's Tree Preservation Fund. The replacement cost of trees shall be established in accordance with the Council of Tree and Landscape Appraiser's standards for appraising trees.

CO-134 Mitigate for loss of trees for road expansion and development consistent with County Tree Ordinance and General Plan policies.

CO-62. Ensure no net loss of marsh and riparian woodland acreage, values or functions.

CO-96. Prior to adoption of the mitigation banking ordinance, utilize on a county-wide basis, the adopted interim wetland mitigation/compensation policy: All wetland acreage proposed to be disturbed by any project over which the Board of Supervisors has discretionary approval shall be mitigated/compensated for by either one or a combination of the following methods:

1. Preserve or create wetlands sufficient to result in no net loss of wetland acreage, and protect their required watersheds as is necessary for the continued function of wetlands on the project site. The appropriate hearing body shall determine that project design, configuration, and wetland management plan, provide reasonable assurances that the wetlands will be protected and their long-term ecological health maintained.

2. Where a Section 404 Permit has been issued by the Corps of Engineers, or an application has been made to obtain a Section 404 Permit, the Mitigation and Management Plan required by that permit or proposed to satisfy the requirements of the Corps for granting a permit may be submitted for purposes of satisfying paragraph 1, provided a no net loss of wetlands is achieved and, provided, further, that such mitigation and management plan shall be subject to the independent, discretionary approval of the Board of Supervisors.

3. Pay to the County of Sacramento an amount based on a rate of $35,000 per acre for the unmitigated/uncompensated wetlands, which shall constitute mitigation for purposes of implementing adopted no net loss policies and CEQA required mitigation. The payment shall be collected by the Department of Planning and Community Development at the time of Improvement Pplan or Building Permit approval, whichever occurs earlier, and deposited into the Wetlands Restoration Trust Fund.

WATERS OF THE UNITED STATES

The U.S. Army Corps of Engineers (Corps) has jurisdiction and permitting authority under Section 404 of the Clean Water Act (CWA) over the discharge of dredged or fill material into waters of the United States, including wetlands. The Corps determines the

significance of and approves, restricts, or prohibits discharges through application of the Section 404(b)(1) guidelines, the substantive criteria for dredged and fill material discharges under the CWA. These guidelines have been developed by the U.S. EPA in conjunction with the Corps. The guidelines are based on the precept that dredged or fill material should not be discharged into the aquatic ecosystem, unless it can be demonstrated that such a discharge will not have an unacceptable adverse impact either individually or in combination with known and/or probable impacts of other activities affecting the ecosystems of concern. Under the Fish and Wildlife Coordination Act, the USFWS advises the Corps on projects involving dredge and fill activities in waters and wetlands of the United States.

SENSITIVE SPECIES

The United States Congress passed the Federal Eendangered Species Act (FESA) in 1973 to protect those species that are endangered or threatened with extinction. In 1984, the State of California enacted a similar law, the California Endangered Species Act (CESA), to protect species identified and listed by the California Fish and Game Commission as endangered or threatened with extinction.

The state and federal Endangered Species Acts are intended to operate in conjunction with CEQA and the National Environmental Policy Act (NEPA) to help protect ecosystems that endangered and threatened species depend upon. The United States Fish and Wildlife Service (USFWS) is responsible for implementation of the FESA while the California Department of Fish and Game (CDFG) implements the CESA.

Accidental or intentional killing of a threatened or endangered species is labeled “take.” “Take” is defined by the FESA as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect” any threatened or endangered wildlife species. Take may include significant habitat modification or degradation and is applied to threatened or endangered plant species as well.

Incidental take to an otherwise lawful activity may be authorized by one of two procedures. If a federal agency is involved with the permitting, funding, or carrying out of the project, then initiation of formal consultation between that agency and USFWS pursuant to Section 7 of the FESA is required if a proposed project may affect a federally listed species. Such consultation would result in a biological opinion that addresses the anticipated effects of the project to listed species and may authorize a limited level of incidental take. If a federal agency is not involved with the project, and federally listed species may be taken as part of the project, then an incidental take permit pursuant to Section 10(a) of the FESA must be obtained. The USFWS may issue such a permit upon completion of a satisfactory conservation plan for any listed species that would be affected by the project.

Under CEQA, species officially proposed for listing (federal classification), candidate species (federal and state classification), species of special concern (State of California classification), and species of concern (federal classification) are fully protected. Plants

identified as “1B” by the California Native Plant Society are also afforded protection pursuant to CEQA.

Raptors (birds of prey) and migratory birds are protected by both federal and state law. The federal Migratory Bird Treaty Act (MBTA) prohibits the killing, possessing, or trading of any migratory birds (including raptors) except in accordance with regulations prescribed by the Secretary of Interior. Raptors are also protected by the Fish and Game Code of California.

Collectively, the sensitive species outlined above are referred to as *special status species.*

The USFWS requires the following notification to be provided in the environmental document for any project which has the potential to adversely affect threatened or endangered species:

> The applicant is hereby notified of additional conditions as stipulated by the U.S. Fish and Wildlife Service. Features of the applicant’s project may adversely affect federally listed threatened or endangered species. An applicant must go through one of two processes to obtain authorization to take federally listed species incidental to completing his or her project. One of the processes is formal consultation. When the authorization or funding of a Federal agency is an aspect of a project that may affect federally listed species, section 7 of the Endangered Species Act requires the Federal agency to formally consult with the Service. Formal consultation is concluded when the Service issues a biological opinion to the Federal agency. The biological opinion includes terms and conditions to minimize the effect of take on listed species. The Federal agency must make the terms and conditions of the biological opinion into binding conditions of its own authorization to the project applicant. An example of this process is when the U.S. Army Corps of Engineers consults with the Service prior to issuing a permit to fill jurisdictional waters under Section 404 of the Clean Water Act. The terms and conditions of the biological opinion become binding on the project applicant through the Corps’ 404 authorization. When no Federal funding or authorization is involved in a project, an applicant must prepare a habitat conservation plan and obtain a permit directly from the Service in accordance with section 10(a)(1)(B) of the Act. For additional information on these processes please contact the Endangered Species Division of the U.S. Fish and Wildlife Service’s Sacramento Fish and Wildlife Office at (916) 979-2725.

VINEYARD POINT

ENVIRONMENTAL SETTING

The site is comprised of leveled and gently rolling terrain, and is situated at an elevation of approximately 60 feet above mean sea level. According to the *Soil Survey of Sacramento County, California* (U.S. Department of Agriculture, Natural Resource Conservation Service 1993), several soil units, or types, have been mapped for the site These are: (157) Hedge loam, 0-2 percent slopes, (191) Redd Bluff loam, 0-2 percent slopes, (197) Redding loam, 2-8 percent slopes, (198) Redding gravelly loam, 0-8 percent slopes, (213) San Joaquin silt loam, leveled, 0-1 percent slopes, (214) San Joaquin silt loam, 0-3 percent slopes, (215) San Joaquin silt loam, 3-8 percent slopes, (216) San Joaquin-Durixeralfs complex, 0-1 percent slopes, (218_ San Joaquin-Galt complex, 0-3 percent slopes, and (221) San Joaquin-Xerarents complex, leveled, 0-1 percent slopes.

The primary vegetation community present on-site is annual grassland. Within the annual greassland are ephemeral features including vernal pools, wetland swales, and intermittent drainages. ~~An unnamed~~Gerber Creek, a tributary to Elder Creek meanders through the southwestern corner of the subject property. The western portion of the site has been historically leveled and farmed. These leveled areas have been farmed in the past with various row crops and rice. The historic rice fields were ~~.~~located in the northwestern corner of the property but have since been leveled and no evidence of rice farming remains. The eastern half of the site has been historically farmed with dry cereal crops such as oats but was not leveled. Through the entire property, active farming and tilling has not occurred for over five years, and the annual grassland community persists.

The annual grassland community is comprised primarily of non-native naturalized Mediterranean grasses. These include ripgut brome (*Bromus diandrus*), soft brome (*Bromus hordeaceus*), wild oats (*Avena fatua*), ryegrass (*Lolium multiflorum*), Mediterranean barley (*Hordeum marinum*), and medusahead grass (*Taeniatherum caput-medusae*). Other non-native herbaceous species in this community include hairy hawk-bit (*Leontodon taraxacoides*), filaree (*Erodium botrys*), pinapple weed (*Chamomilla suaveolens*), and yellow-star thistle (*Centaurea solstitialis*). Several blue gum (*Eucalyptus globules*), Fremont cottonwood (*Populus fremontii*), locust ~~tree~~ (*Robinia pseudoacacia*),~~m~~ and other non-native ornamental trees are scattered throughout the site, particularly at the southern boundary, where homes were once located.

WATERS OF THE U.S.

A wetland delineation was conducted in accordance with the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987). The entire site was walked to determine the extent of potential waters of the U.S. within the project site. Potentially jurisdictional waters of the U.S. mapped include wetlands (8.50 acres) and

other waters (0.52 acres). Wetlands consist of vernal pools (8.41 acres) and seasonal wetland swale (0.09 acres). Other waters include the intermittent creek (0.52 acres).

WETLANDS

Vernal pools are scattered through the site. Vernal pools are topographic basins within the grassland community and typically are underlain with an impermeable or semi-permeable hardpan or duripan layer. Vernal pools are inundated up to one foot through the wet season and are dry by late spring through the following wet season.

A total of 8.41 acres of vernal pools have been mapped within the site. The plant species composition within vernal pools is predominantly native annual species that include slender popcorn flower (*Plagiobothrys stipitatus*), bractless hedge hyssop (*Gratiola ebracteata*), annual hairgrass (*Deswchampsia danthonioides*), dwarf wooly heads (*Psilocarphus brevissimuys*), and Fremont's goldfields (*Lasthenia fremontii*).

Seasonal wetland swales are ephemerally wet linear features. The vegetative composition of the seasonal wetlands on-site is primarily comprised ~~on~~ of non-native wetland generalist plants. These include ryegrass, Mediterranean barley, hyssop loosestrife (*Lythrum hyssopifolium*), and curly dock (*Rumex crispus*).

OTHER WATERS

~~The unnamed tributary to Elder Creek~~Gerber Creek, which flows in a westerly direction towards Elder Creek, has been mapped as an intermittent creek, according to the "Elk Grove, California" 7.5-minute quadrangle. However, this Elder Creek and its tributaries may be perennial during high water years or as irrigation runoff increases from upstream sources. In general the intermittent creek exhibits bed-and-bank characteristics and is largely unvegetated due to the depth and scouring effects of flowing water. However, some hydrophytic vegetation may be present along the upper edges, and in areas where sediment accumulations provide a substrate suitable for plant establishment and growth.

SPECIAL STATUS SPECIES

Based upon vegetation communities present on the property, species' known distributive data, and the references cited above, a list of potentially occurring special status species has been developed for the Vineyard Point property. This list is presented in Plate BR -1. Species include: six plant species, two invertebrates, one amphibian, two reptiles, fifteen birds, and seven mammals.

PLANTS

Special status plants that may occur on-site include those that are associated with vernal pools and marshes. The vernal pool species include dwarf downingia (*Downingia pusilla*, CNPS list 2), Boggs Lake hedge-hyssop (*Gratiola heterosepala*,

California-endangered and CNPS List 1B), Ahart's dwarf rush (*Juncus leiospermus* var. ahartii, federal species of concern and CNPS list 1B), Green's legenere (*Legenere limosa*, federal species of concern and CNPS List 1B), slender Orcutt grass (*Orcuttia tenuis*, California endangered, federal threatened, and CNPS List 1B) and Sacramento Orcutt grass (*Orcuttia viscida*, California endangered, federal endangered, and CNPS List 1B), and the marsh species includes Sanford's arrowhead (*Sagittaria sanfordii*, federal species of concern and CNPS List 1B). Of these, Boggs Lake hedge-hyssop, slender Orcutt grass, and Sacramento Orcutt grass are listed and protected pursuant to the state and/or federal Endangered Species Acts. Dwarf downingia, Green's legenere, Ahart's dwarf rush, and Sanford's arrowhead are not listed and protected pursuant to either state or federal Acts.

ECORP Consulting, Inc. conducted a rare plant survey for the proposed Vineyard Point project site. These surveys were conducted during the optimum blooming period for each of the potentially occurring special-status species. ECORP biologist Jinnah Hansen conducted surveys on May 28 and May 29, 2003. The survey was conducted by walking transects through the appropriate wetland features depicted on the wetland delineation map. Plant species found during the survey were identified using *The Jepson Manual, Higher Plants of California* (Hickman, 1993). No special-status species were observed on-site during the surveys.

INVERTEBRATES

The vernal pool basins on-site can provide habitat for the federally listed vernal pool fairy shrimp (*Branchinecta lynchi*, federal threatened) and vernal pool tadpole shrimp (*Lepidurus packardi*, federal endangered), and as such, are often considered by the U.S. Fish and Wildlife Service (USFWS) to represent potentially occupied habitat.

FISH

There are no immediate fish issues within ~~the unnamed tributary to Elder~~Gerber Creek. However, impacts to ~~the Creek and its tributaries~~Gerber Creek may affect down stream conditions for federally listed fish species such as Sacramento Splittail and Central Valley Evolutionarily Significant Units (ESU) anadromous salmonids, such as Central Valley steelhead, Fall-run Chinook salmon, and spring-run salmon.

AMPHIBIANS

The vernal pools and adjacent grasslands on-site represent potentially suitable habitat for the western spadefoot toad (*Spea hammondi*, CDFG species of special concern and federal species of concern). No other special-status amphibians have the potential to occur on-site.

REPTILES

Two special-status reptiles may occur on-site, the giant garter snake (*Thamnophis gigas*, California and federally threatened) and northwestern pond turtle (*Clemmys marmorata marmorata*, CDFG species of special concern and California Code of Regulation Title 14 fully protected species). Giant garter snakes typically occupy perennial ponds, marshes, slow-moving streams, and agricultural ditches containing adequate water supply during the spring and summer months. Northwestern pond turtles typically occur within perennial streams, creeks, ponds and marshes. This reach of Gerber Creek within the subject property represents potentially suitable giant garter snake and northwestern pond turtle habitat.

BIRDS

The potentially occurring special status birds on-site include nesting raptors, nesting songbirds, and wintering or migrant birds. The nesting raptors include both tree nesting and ground nesting species.

The potential for raptors nesting in trees is unlikely due to the limited number of available trees. The potential nesting trees are limited to several Fremont cottonwood (*Populus fremontii*) and other ornamental trees around the existing buildings, barns, and corrals. However, several raptor species have been observed nesting within close proximity of human habitation. These tree nesting species are white-tailed kite (*Elanus leucurus*, Fish and Game Code fully protected and USFWS bird of management concern), Cooper's hawk (*Accipiter cooperii*, CDFG species of special concern), and Swainson's hawk (*Buteo swainsoni*, California threatened).

Potentially occurring ground nesting birds on-site include northern harrier (*Circus cyaneus*, CDFG species of special concern) and burrowing owl (*Athene cunicularia*, CDFG species of special concern and federal species of concern).

Special status songbirds that may occur within the project site include loggerhead shrike (*Lanius ludovicianus*, CDFG species of special concern and USFWS bird of management concern) and tricolored blackbird (*Agelaius tricolor*, CDFG species of special concern and USFWS bird of management concern).

Other special status birds that may occur on-site are not known to nest in this region and/or suitable nesting habitat is not present on-site. However, grassland and pastures on the project site represent potential foraging habitat for these remaining species. These are: sharp-shinned hawk (*Accipiter striatus*, CDFG species of special concern), ferruginous hawk (*Buteo regalis*, CDFG species of special concern and USFWS Bird of Management Concern), golden eagle (*Aquila chrysaetos*, Fish and Game Code §3511 fully protected species and CDFG species of special concern), Merlin (*Falco columbarius*, CDFG species of special concern), prairie falcon (*F. mexicanus*, CDFG species of special concern), mountain plover (*Charadrius montanus*, federally proposed threatened and USFWS Bird of Management Concern), long-billed curlew (*Nemenius*

americanus, CDFG species of s~~S~~pecial concern and USFWS Bird of Management Concern), and short-eared owl (*Asio flammeus*, CDFG species of special concern).

MAMMALS

~~Elder~~ Gerber Creek and the irrigated pastures on-site may provide foraging habitat for a variety of special-status bats that are known to occur in this region. These are: small-footed myotis (*Myotis ciliolabrum*), long-eared myotis (*M. evotis*), fringed myotis (*M. thysanodes*), long-legged myotis (*M. volans*), Yuma myotis (*M. yumanensis*), Townsend's big-eared bat (*Corynorhinus townsendii*), and pallid bat (*Antrozous pallidus*). Typical roosting and breeding sites for these species are not present within the project site but include appropriate cliffs, buildings, caves, mines and bridges. None of these species are listed and protected pursuant to the California or federal Endangered Species Act; they are considered CDFG species of special concern, Forest Service sensitive species, and/or Bureau of Land Management sensitive species.

IMPACTS AND ANALYSIS (VINEYARD POINT)

Impact: Impacts to wetlands.

The proposed project will impact 9.02 acres of waters of the United States. The proposed mitigation will ensure that this impact is less-than-significant.

MITIGATION MEASURES:

BR-1. To compensate for the loss of wetlands and waters of the U.S., one of the following measures shall be implemented:

1. Preserve or create wetlands sufficient to result in no net loss of wetland acreage, and protect their required watersheds as is necessary for the continued function of wetlands on the project site. The appropriate hearing body shall determine that project design, configuration, and wetland management plan, provides reasonable assurances that the wetlands will be protected and their long-term ecological health maintained.

2. Where a Section 404 Permit has been issued by the Corps of Engineers, or an application has been made to obtain a Section 404 Permit, the Mitigation and Management Plan required by that permit or proposed to satisfy the requirements of the Corps for granting a permit may be submitted for purposes of satisfying paragraph 1, provided a no net loss of wetlands is achieved. ~~and, provided, further, that such mitigation and management plan shall be subject to the independent, discretionary approval of the Board of Supervisors.~~

3. Pay to the County of Sacramento an amount based on a rate of $35,000 per acre for the unmitigated/uncompensated wetlands, which shall constitute mitigation for purposes of implementing adopted no net loss policies and

CEQA required mitigation. The payment shall be collected by the Department of Planning and Community Development at the time of Improvement Plan or Building Permit approval, whichever occurs earlier, and deposited into the Wetlands Restoration Trust Fund.

Impact: Effects on Vernal Pool Species.

Construction of the proposed project will remove 8.41 acres of vernal pools, habitat for the vernal pool fairy shrimp, vernal pool tadpole shrimp, and spadefoot toad. Removal of this habitat represents a significant impact.

MITIGATION MEASURES**:**

BR-2. The applicant shall compensate for impacts to vernal pool species through consultation with the U.S. Fish and Wildlife Service as outlined in Section 7 of the Endangered Species Act. The applicant shall implement all measures included in the Biological Opinion issued as a result of this consultation.

Impact: Effects on birds of prey.

Project construction has the potential to disturb nesting activities of listed birds of prey. In addition, the proposed project will remove ~~179~~ 181.8 acres of Swainson's Hawk foraging habitat upon completion. Impacts to Swainson's Hawk and other raptor are considered significant.

MITIGATION MEASURES**:**

BR-3. If construction is proposed during the raptor breeding season (February – August), a focused survey for migratory bird nests shall be conducted within 30 days prior to the beginning of construction activities by a qualified biologist in order to identify active nests on the site. If active nests are found, no construction activities shall take place within 500 feet of the nest until the young have fledged. Trees containing nests that must be removed as a result of project implementation shall be removed during the non-breeding season (September – January). If no active nests are found during the focused survey, no further mitigation will be required.

BR-4. To mitigate for the loss of ~~179~~ 181.8 acres of Swainson's hawk foraging habitat, prior to the approval of Improvement Plans or building permits, or recordation of Final Subdivision Map, whichever occurs first, the applicant shall perform one of the following:

~~BR-5.~~1. The project proponent shall preserve ~~89.5~~90.9 acres (0.50 acre for each acre lost) of similar habitat within a 10-mile radius of the project site. This land shall be protected through fee title or conservation easement (acceptable to the California Department of Fish and Game).

~~1.~~2. The project proponent shall, to the satisfaction of the California Department of Fish and Game, prepare and implement a Swainson's hawk mitigation plan that will include preservation of Swainson's hawk foraging habitat.

~~2.~~3. The project proponent shall submit payment of a Swainson's hawk impact mitigation fee per acre impacted to the Department of Planning and Community Development in the amount as set forth in Chapter 16.130 of the Sacramento County Code as such may be amended from time to time and to the extent that said Chapter remains in effect.

~~3.~~4. Should the County Board of Supervisors adopt a Swainson's hawk mitigation policy/program (which may include a mitigation fee) prior to the implementation of one of the measures above, the project proponent may be subject to that program instead.

Impacts to Giant Garter Snake and Northwestern Pond Turtle

The portion of Gerber Creek located within the project area represents potential habitat for the giant garter snake and the northwestern pond turtle. Construction of creek improvements and construction near ~~the~~ Gerber Creek could impact both GGS and northwestern pond turtle. Impacts to GGS and northwestern pond turtle are potentially significant.

MITIGATION MEASURES**:**

~~BR-6.~~BR-5. The project site shall be surveyed for giant garter snakes and the northwestern pond turtle by a qualified biologist within 24 hours prior to the start of construction activities (including clearing and grubbing) located within 200 feet of ~~Elder~~ Gerber Creek. Survey of the area shall be repeated if a lapse in construction activity of two weeks or greater occurs. If a giant garter snake and/or northwestern pond turtle is encountered during construction, activities shall cease until appropriate corrective measures have been completed or it has been determined that the snake and/or turtle will not be harmed. Giant garter snakes and northwestern pond turtles encountered during construction should be allowed to move away on their own. Capture and relocation of trapped or injured individuals shall only be attempted by personnel or individuals with current USFWS recovery permits. Any incidental take shall be reported to the USFWS at (916) 979-2725 and Department of Environmental Review and Assessment at (916) 874-7914 within one working day. Any giant garter snake and/or northwestern pond turtle sightings shall be reported within 24 hours to the Department of Environmental Review and Assessment at 874-7914.

Plate BR -1
Potentially Occurring Special-Status Species
Vineyard Point Subdivision

Attachment D. Potentially Occurring Special-Status Species

Common Name	Scientific Name	Federal Status	State Status	Other Status	Habitat Description	Approximate Survey Period (J F M A M J J A S O N D)
Plants						
Boggs Lake hedge-hyssop	*Gratiola heterosepala*	-	CE	1B	vernal pools	
Ahart's dwarf rush	*Juncus leiospermus* var. *ahartii*	-	-	FSC, 1B	vernal pools	
Greene's legenere	*Legenere limosa*	-	-	FSC, 1B	vernal pools	
Slender orcutt grass	*Orcuttia tenuis*	FT	CE	1B	vernal pools	
Sacramento orcutt grass	*Orcuttia viscida*	FE	CE	1B	vernal pools	
Sanford's arrowhead	*Sagittaria sanfordii*	-	-	FSC, 1B	marsh, creeks, ditches	
Invertebrates						
Vernal pool fairy shrimp	*Branchinecta lynchi*	FT	-	-	vernal pools/wetlands	
Vernal pool tadpole shrimp	*Lepidurus packardi*	FE	-	-	vernal pools/wetlands	
Amphibians						
Western spadefoot toad	*Spea hammondi*	-	-	CSC, CCR, BLM	vernal pools, wetlands/adjacent grassland	
Reptiles						
Northwestern pond turtle	*Clemmys marmorata marmorata*	-	-	CSC, CCR, FS	creeks, ponds	
Giant garter snake	*Thamnophis gigas*	FT	CT	CCR	ditches, sloughs, marshes	
Birds						
White-tailed kite	*Elanus leucurus*	-	-	CFP, MNB	woodland, grassland	
Northern harrier	*Circus cyaneus*	-	-	CSC	marsh, grassland	
Sharp-shinned hawk	*Accipiter striatus*	-	-	CSC	woodland	
Cooper's hawk	*Accipiter cooperii*	-	-	CSC	woodland	
Swainson's hawk (nesting)	*Buteo swainsoni*	-	CT	-	grassland, riparian	
Ferruginous hawk	*Buteo regalis*	-	-	CSC, MNB	grassland	
Golden eagle	*Aquila chrysaetos*	-	-	CFP, CSC, CDF	grassland	
Merlin	*Falco columbarius*	-	-	CSC	woodland, grassland	
Prairie falcon	*Falco mexicanus*	-	-	CSC	grassland	
Mountain plover (wintering)	*Charadrius montanus*	FPT	-	CSC, MNB	grassland, pasture	
Long-billed curlew (nesting)	*Numenius americanus*	-	-	CSC, MNB	grassland, pasture	
Burrowing owl	*Athene cunicularia*	-	-	CSC, MNB, BLM	grassland	
Short-eared owl	*Asio flammeus*	-	-	CSC, MNB	marsh, grassland	
Loggerhead shrike	*Lanius ludovicianus*	-	-	CSC, MNB	grassland, woodland	
Tricolored blackbird	*Agelaius tricolor*	-	-	CSC, MNB, BLM	marsh, grassland	
Mammals						
Small-footed myotis	*Myotis ciliolabrum*	-	-	BLM	various woodland/shrubland	

2002-053 SSS List

Plate BR-1 (cont.)
Potentially Occurring Special Status Species
Vineyard Point Subdivision

Attachment D. Potentially Occurring Special-Status Species

Common Name	Scientific Name	Federal Status	State Status	Other Status	Habitat Description	Approximate Survey Period J	F	M	A	M	J	J	A	S	O	N	D
Long-eared myotis	*Myotis evotis*	-	-	BLM	deciduous or coniferous												
Fringed myotis	*Myotis thysanodes*	-	-	BLM	deciduous or coniferous												
Long-legged myotis	*Myotis volans*	-	-	CNDDB	deciduous or coniferous												
Yuma myotis	*Myotis yumanensis*	-	-	CSC, BLM	Riparian woodland												
Townsend's big-eared bat	*Corynorhinus townsendii*	-	-	CSC, FS, BLM	mines, man-made structures,												
Pallid bat	*Antrozous pallidus*	-	-	CSC, FS, BLM	mines, man-made structures,												

Status Codes

FE - Federally listed, Endangered.
FT - Federally listed, Threatened.
FPT - Formally Proposed for federal listing as Threatened.
FC - Candidate for federal listing as Threatened or Endangered.
FSC - U. S. Fish and Wildlife Service Species of Concern
MNB - U. S. Fish and Wildlife Service Migratory Nongame Birds of Management Concern
BLM - Bureau of Land Management Sensitive Species
CE - California listed, Endangered.
CT - California listed, Threatened.
CCR - California Code of Regulations Title 14 Fully Protected Species
CFP - Fish and Game Code of California Fully Protected Species (§3511-birds, §4700-mammals, §5050-reptiles/amphibians).
CSC - California Department of Fish and Game Species of Special Concern.
CDF - California Department of Forestry Sensitive Species
1B - California Native Plant Society/Rare or Endangered in California and elsewhere
2 - California Native Plant Society/Rare or Endangered in California, more common elsewhere
4 - California Native Plant Society/Plants of Limited Distribution
CNDDB - Species that is tracked by CDFG's Natural Diversity Database but does not have any of the above special-status designations otherwise.

2002-053 SSS List

VINEYARD CREEK

ENVIRONMENTAL SETTING

The site is comprised of leveled pasture and is situated at an elevation of approximately 50 feet above mean sea level. Rural residences and a horse boarding facility are located at the northern portion of the site. According to the *Soil Survey of Sacramento County, California* (U.S. Department of Agriculture, Natural Resource Conservation Service 1993), two soil units, or types, have been mapped for the site. These are: (213) San Joaquin silt loam, leveled, 0-1 percent slopes and (214) San Joaquin silt loam, 0-3 percent slopes.

The primary vegetation community present on-site is annual grassland. Within the annual grassland are ephemeral features (i.e., vernal pools). Elder Creek meanders through the northern and western portion of the subject property. Gerber Creek is located adjacent to the southeast corner of the property. The site has been historically leveled and farmed. Currently, the pasture north of the railroad easement is being grazed by horses and is no longer actively irrigated. The pasture immediately south of the railroad easement is being grazed by horses and is irrigated. A small pen of cows is located within this pasture. The southernmost pasture currently lies fallow and is not irrigated.

The non-irrigated annual grassland community is comprised primarily of non-native naturalized Mediterranean grasses. These include ripgut brome (*Bromus diandrus*), soft brome (*Bromus hordeaceus*), wild oats (*Avenua fatua*), ryegrass (*Lolium multiflorum*), Mediterranean barley (*Hordeum marinum*), and medusahead grass (*Taeniatherum caput-medusae*). Other non-native herbaceous species in this community include hairy hawk-bit (*Leontodon taraxacoides*), filaree (*Erodium botrys*), pinapple weed (*Chamomilla suaveolens*), and yellow-star thistle (*Centaurea solstitialis*). The irrigated pasture is comprised of a mixture of native and non-native hydrophytic plants. These include Bermuda grass (*Cynondon da*ctylon), curly dock (*Rumex crispus*), spiny-fruit buttercup (*Ranunculus muricatus*), rye grass (*Lolium multiflorum*), Mediterranean barley (*Hordeum marinum*), and slender popcorn flower (*Plagiobothrys stipitatus*). The leveled irrigated pasture was not considered a potential water of the U.S., as it is likely that wetland hydrology, hydrophytic vegetation, and Hydric soils would not persist in the absence of irrigation. Also, because this pasture has been leveled, there are no distinct topographic basins that, in the absence of irrigation, would pond water long enough during the growing season to exhibit wetland characteristics.

WATERS OF THE U.S.

A wetland delineation was conducted in accordance with the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987). The entire site was walked to determine the extent of potential waters of the U.S. within the project site. Potentially jurisdictional waters of the U.S. mapped include wetlands (1.85 acres) and other waters (0.84 acres). Wetlands consist of vernal pools (1.77) and seasonal

wetlands (0.08), and Elder Creek is mapped as the other waters. This acreage includes those areas needed for off-site infrastructure.

WETLANDS

Two relatively large vernal pools have been mapped within the non-irrigated pastures. Vernal pools are topographic basins within the grassland community and typically are underlain with an impermeable or semi-permeable hardpan or duripan layer. Vernal pools are inundated up to one foot through the wet season and are dry by late spring through the following wet season.

A total of 1.77 acres of vernal pools have been mapped within the site. The plant species composition within the vernal pools is predominantly native annual species that include slender popcorn flower (*Plagiobothrys stipitatus*), bractless hedge hyssop (*Gratiola ebracteata*), annual hairgrass (*Deschampsia danthonioides*), dwarf wooly heads (*Psilocarphus brevissimus*), and Fremont's goldfields (*Lasthenia fremontii*).

OTHER WATERS

Elder Creek, which flows in a westerly direction, has been mapped as a seasonal creek according to the "Elk Grove, California" 7.5-minute quadrangle. However, Elder Creek and its tributaries may be perennial during high water years or as irrigation runoff increases from upstream sources. In general, Elder Creek exhibits bed-and-bank characteristics and is largely unvegetated due to its depth and the scouring effects of flowing water. However, some hydrophytic vegetation may be present along the upper edges, and in areas where sediment accumulations provide a substrate suitable for plant establishment and growth. Himalaya blackberry (*Rubus discolor*) thickets can be found along the banks at various reaches of the creek.

SPECIAL STATUS SPECIES

Based upon vegetation communities present on the property, species' known distributive data, and the references cited above, a list of potentially occurring special-status species has been developed for the Vineyard Creek project site. This list is presented in Plate BR -2. Species include: six plant species, two invertebrates, one amphibian, two reptiles, fifteen birds, and seven mammals.

PLANTS

Special status plants that may occur on-site include those that are associated with vernal pools and marshes. The vernal pool species include dwarf downingia (*Downingia pusilla*, CNPS list 2), Boggs Lake hedge-hyssop (*Gratiola heterosepala*, California-endangered and CNPS List 1B), Ahart's dwarf rush (*Juncus leiospermus* var. ahartii, federal species of concern and CNPS list 1B), Green's legenere (*Legenere limosa*, federal species of concern and CNPS List 1B), slender Orcutt grass (*Orcuttia tenuis*, California endangered, federal threatened, and CNPS List 1B) and Sacramento

Orcutt grass (*Orcuttia viscida*, California endangered, federal endangered, and CNPS List 1B), and the marsh species includes Sanford's arrowhead (*Sagittaria sanfordii*, federal species of concern and CNPS List 1B). Of these, Boggs Lake hedge-hyssop, slender Orcutt grass, and Sacramento Orcutt grass are listed and protected pursuant to the state and/or federal Endangered Species Acts. Dwarf downingia, Green's legenere, Ahart's dwarf rush, and Sanford's arrowhead are not listed and protected pursuant to either state or federal Acts.

ECORP Consulting, Inc. conducted a rare plant survey for the proposed Vineyard Point project site. These surveys were conducted during the optimum blooming period for each of the potentially occurring special-status species. ECORP biologist Jinnah Hansen conducted surveys on May 29, 2003. The survey was conducted by walking transects through the appropriate wetland features depicted on the wetland delineation map. Plant species found during the survey were identified using the *Jepson Manual, Higher Plants of California* (Hickman, 1993). No special-status species were observed on-site during the surveys.

INVERTEBRATES

The vernal pool basins on-site can provide habitat for the federally listed vernal pool fairy shrimp (*Branchinecta lynchi*, federal threatened) and vernal pool tadpole shrimp (*Lepidurus packardi*, federal endangered), and as such, are often considered by the U.S. Fish and Wildlife Service (USFWS) to represent potentially occupied habitat.

FISH

There are no immediate fish issues within Elder Creek. However, impacts to the Creek may affect down stream conditions for federally listed fish species such as Sacramento Splittail and Central Valley Evolutionarily Significant Units (ESU) anadromous salmonids, such as Central Valley steelhead, Fall-run Chinook salmon, and spring-run salmon.

AMPHIBIANS

The vernal pools and adjacent grasslands on-site represent potentially suitable habitat for the western spadefoot toad (*Spea hammondi*, CDFG species of special concern and federal species of concern). No other special-status amphibians have the potential to occur on-site.

REPTILES

Two special-status reptiles may occur on-site, the giant garter snake (*Thamnophis gigas*, California and federally threatened) and northwestern pond turtle (*Clemmys marmorata marmorata*, CDFG species of special concern and California Code of Regulation Title 14 fully protected species). Giant garter snakes typically occupy perennial ponds, marshes, slow-moving streams, and agricultural ditches containing

adequate water supply during the spring and summer months. Northwestern pond turtles typically occur within perennial streams, creeks, ponds and marshes. This reach of Elder Creek within the subject property and the reach of Gerber Creek adjacent to the southeast corner of the property, represents potentially suitable giant garter snake and northwestern pond turtle habitat.

BIRDS

The potentially occurring special status birds on-site include nesting raptors, nesting songbirds, and wintering or migrant birds. The nesting raptors include both tree nesting and ground nesting species.

Tree nesting species that may nest on-site are white-tailed kite (*Elanus leucurus*, Fish and Game Code fully protected and USFWS bird of management concern), Cooper's hawk (*Accipiter cooperii*, CDFG species of special concern), and Swainson's hawk (*Buteo swainsoni*, California threatened). A white-tailed kite was foraging within the site but was not observed nesting within the project site during the April 2002 field assessment. The probability for raptors nesting within the trees on-site is considered low due to the tree's close proximity to areas of daily human activity (i.e., home and horse boarding). These trees include Fremont cottonwood (*Populus fremontii*) and a variety of ornamental non-native species.

Potentially occurring ground-nesting birds on-site include northern harrier (*Circus cyaneus*, CDFG species of special concern) and burrowing owl (*Athene cunicularia*, CDFG species of special concern and federal species of concern). Burrowing owls have been reported by the current occupants to have nested within the dry perimeter of the irrigated pasture, but none were observed during the field assessment.

Special status songbirds that may occur within the project site include loggerhead shrike (*Lanius ludovicianus*, CDFG species of special concern and USFWS bird of management concern) and tricolored blackbird (*Agelaius tricolor*, CDFG species of special concern and USFWS bird of management concern). During the April 2002 field assessment, a large tricolored blackbird colony of up to 500 pairs was nesting within the blackberry thicket along Elder Creek. Most of the nesting had been completed or very near completion by the June survey date.

Other special status birds that may occur on-site are not known to nest in this region and/or suitable nesting habitat is not present on-site. However, grassland and pastures on the project site represent potential foraging habitat for these remaining species. These are: sharp-shinned hawk (*Accipiter striatus*, CDFG species of special concern), ferruginous hawk (*Buteo regalis*, CDFG species of special concern and USFWS Bird of Management Concern), golden eagle (*Aquila chrysaetos*, Fish and Game Code §3511 fully protected species and CDFG species of special concern), Merlin (*Falco columbarius*, CDFG species of special concern), prairie falcon (*F. mexicanus*, CDFG species of special concern), mountain plover (*Charadrius montanus*, federally proposed threatened and USFWS Bird of Management Concern), long-billed curlew (*Nemenius*

americanus, CDFG species of Special concern and USFWS Bird of Management Concern), and short-eared owl (*Asio flammeus*, CDFG species of special concern).

MAMMALS

Elder Creek and the irrigated pastures on-site may provide foraging habitat for a variety of special-status bats that are known to occur in this region. These are: small-footed myotis (*Myotis ciliolabrum*), long-eared myotis (*M. evotis*), fringed myotis (*M. thysanodes*), long-legged myotis (*M. volans*), Yuma myotis (*M. yumanensis*), Townsend's big-eared bat (*Corynorhinus townsendii*), and pallid bat (*Antrozous pallidus*). Typical roosting and breeding sites for these species include appropriate cliffs, buildings, caves, mines and bridges. The homes, outbuildings, and horse barns may be potentially used as roost sites, but breeding or nursery use is highly unlikely due to the presence of human disturbances. None of these species are listed and protected pursuant to the California or federal Endangered Species Act; they are considered CDFG species of special concern, Forest Service sensitive species, and/or Bureau of Land Management sensitive species.

IMPACTS AND ANALYSIS (VINEYARD CREEK)

Impact: Impacts to wetlands.

The proposed project will impact 2.69 acres of waters of the United States. The proposed mitigation will ensure that this impact is less-than-significant.

MITIGATION MEASURES**:**

~~BR-7.~~BR-6. To compensate for the loss of wetlands and waters of the U.S., one of the following measures shall be implemented:

1. Preserve or create wetlands sufficient to result in no net loss of wetland acreage, and protect their required watersheds as is necessary for the continued function of wetlands on the project site. The appropriate hearing body shall determine that project design, configuration, and wetland management plan, provides reasonable assurances that the wetlands will be protected and their long-term ecological health maintained.

2. Where a Section 404 Permit has been issued by the Corps of Engineers, or an application has been made to obtain a Section 404 Permit, the Mitigation and Management Plan required by that permit or proposed to satisfy the requirements of the Corps for granting a permit may be submitted for purposes of satisfying paragraph 1, provided a no net loss of wetlands is achieved. ~~and, provided, further, that such mitigation and management plan shall be subject to the independent, discretionary approval of the Board of Supervisors.~~

3. Pay to the County of Sacramento an amount based on a rate of $35,000 per acre for the unmitigated/uncompensated wetlands, which shall constitute mitigation for purposes of implementing adopted no net loss policies and CEQA required mitigation. The payment shall be collected by the Department of Planning and Community Development at the time of Improvement Plan or Building Permit approval, whichever occurs earlier, and deposited into the Wetlands Restoration Trust Fund.

Plate BR -2
Potentially Occurring Special Status Species
Vineyard Creek Subdivision

Attachment D. Potentially Occurring Special-Status Species

Common Name	Scientific Name	Federal Status	State Status	Other Status	Habitat Description	Approximate Survey Period (J F M A M J J A S O N D)
Plants						
Boggs Lake hedge-hyssop	*Gratiola heterosepala*	-	CE	1B	vernal pools	
Ahart's dwarf rush	*Juncus leiospermus* var. *ahartii*	-	-	FSC, 1B	vernal pools	
Greene's legenere	*Legenere limosa*	-	-	FSC, 1B	vernal pools	
Slender orcutt grass	*Orcuttia tenuis*	FT	CE	1B	vernal pools	
Sacramento orcutt grass	*Orcuttia viscida*	FE	CE	1B	vernal pools	
Sanford's arrowhead	*Sagittaria sanfordii*	-	-	FSC, 1B	marsh, creeks, ditches	
Invertebrates						
Vernal pool fairy shrimp	*Branchinecta lynchi*	FT	-	-	vernal pools/wetlands	
Vernal pool tadpole shrimp	*Lepidurus packardi*	FE	-	-	vernal pools/wetlands	
Amphibians						
Western spadefoot toad	*Spea hammondi*	-	-	CSC, CCR, BLM	vernal pools, wetlands/adjacent grassland	
Reptiles						
Northwestern pond turtle	*Clemmys marmorata marmorata*	-	-	CSC, CCR, FS	creeks, ponds	
Giant garter snake	*Thamnophis gigas*	FT	CT	CCR	ditches, sloughs, marshes	
Birds						
White-tailed kite	*Elanus leucurus*	-	-	CFP, MNB	woodland, grassland	
Northern harrier	*Circus cyaneus*	-	-	CSC	marsh, grassland	
Sharp-shinned hawk	*Accipiter striatus*	-	-	CSC	woodland	
Cooper's hawk	*Accipiter cooperii*	-	-	CSC	woodland	
Swainson's hawk (nesting)	*Buteo swainsoni*	-	CT	-	grassland, riparian	
Ferruginous hawk	*Buteo regalis*	-	-	CSC, MNB	grassland	
Golden eagle	*Aquila chrysaetos*	-	-	CFP, CSC, CDF	grassland	
Merlin	*Falco columbarius*	-	-	CSC	woodland, grassland	
Prairie falcon	*Falco mexicanus*	-	-	CSC	grassland	
Mountain plover (wintering)	*Charadrius montanus*	FPT	-	CSC, MNB	grassland, pasture	
Long-billed curlew (nesting)	*Numenius americanus*	-	-	CSC, MNB	grassland, pasture	
Burrowing owl	*Athene cunicularia*	-	-	CSC, MNB, BLM	grassland	
Short-eared owl	*Asio flammeus*	-	-	CSC, MNB	marsh, grassland	
Loggerhead shrike	*Lanius ludovicianus*	-	-	CSC, MNB	grassland, woodland	
Tricolored blackbird	*Agelaius tricolor*	-	-	CSC, MNB, BLM	marsh, grassland	
Mammals						
Small-footed myotis	*Myotis ciliolabrum*	-	-	BLM	various woodland/shrubland	

2002-051 SSS List

Plate BR-2 (cont.)
Potentially Occurring Special Status Species
Vineyard Creek Subdivision

Attachment D. Potentially Occurring Special-Status Species

Common Name	Scientific Name	Federal Status	State Status	Other Status	Habitat Description	Approximate Survey Period J	F	M	A	M	J	J	A	S	O	N	D
Long-eared myotis	*Myotis evotis*	-	-	BLM	deciduous or coniferous												
Fringed myotis	*Myotis thysanodes*	-	-	BLM	deciduous or coniferous												
Long-legged myotis	*Myotis volans*	-	-	CNDDB	deciduous or coniferous												
Yuma myotis	*Myotis yumanensis*	-	-	CSC, BLM	Riparian woodland												
Townsend's big-eared bat	*Corynorhinus townsendii*	-	-	CSC, FS, BLM	mines, man-made structures,												
Pallid bat	*Antrozous pallidus*	-	-	CSC, FS, BLM	mines, man-made structures,												

Status Codes

FE - Federally listed, Endangered.
FT - Federally listed, Threatened.
FPT - Formally Proposed for federal listing as Threatened.
FC - Candidate for federal listing as Threatened or Endangered.
FSC - U. S. Fish and Wildlife Service Species of Concern
MNB - U. S. Fish and Wildlife Service Migratory Nongame Birds of Management Concern
BLM - Bureau of Land Management Sensitive Species
CE - California listed, Endangered.
CT - California listed, Threatened.
CCR - California Code of Regulations Title 14 Fully Protected Species
CFP - Fish and Game Code of California Fully Protected Species (§3511-birds, §4700-mammals, §5050-reptiles/amphibians).
CSC - California Department of Fish and Game Species of Special Concern.
CDF - California Department of Forestry Sensitive Species
1B - California Native Plant Society/Rare or Endangered in California and elsewhere
2 - California Native Plant Society/Rare or Endangered in California, more common elsewhere
4 - California Native Plant Society/Plants of Limited Distribution
CNDDB - Species that is tracked by CDFG's Natural Diversity Database but does not have any of the above special-status designations otherwise.

2002-051 SSS List

Impact: Effects on Vernal Pool Species.

Construction of the proposed project will remove 1.49 acres of vernal pools, habitat for the vernal pool fairy shrimp, vernal pool tadpole shrimp, and spadefoot toad. Removal of this habitat represents a significant impact.

MITIGATION MEASURES**:**

~~BR-8.~~BR-7. The applicant shall compensate for impacts to vernal pool species through consultation with the U.S. Fish and Wildlife Service as outlined in Section 7 of the Endangered Species Act. The applicant shall implement all measures included in the Biological Opinion issued as a result of this consultation.

Impact: Effects on birds of prey.

Project construction has the potential to disturb nesting activities of listed birds of prey. In addition, the proposed project will remove ~~108~~ 104.8 acres of Swainson's Hawk foraging habitat upon completion. Impacts to Swainson's Hawk and other raptors are considered significant.

MITIGATION MEASURES**:**

~~BR-9.~~BR-8. If construction is proposed during the raptor breeding season (February – August), a focused survey for migratory bird nests shall be conducted within 30 days prior to the beginning of construction activities by a qualified biologist in order to identify active nests on the site. If active nests are found, no construction activities shall take place within 500 feet of the nest until the young have fledged. Trees containing nests that must be removed as a result of project implementation shall be removed during the non-breeding season (September – January). If no active nests are found during the focused survey, no further mitigation will be required.

~~BR-10.~~BR-9. To mitigate for the loss of ~~108~~ 104.8 acres of Swainson's hawk foraging habitat, prior to the approval of Improvement Plans or building permits, or recordation of Final Subdivision Map, whichever occurs first, the applicant shall perform one of the following:

1. The project proponent shall preserve ~~56~~ 52.4acres (0.50 acre for each acre lost) of similar habitat within a 10-mile radius of the project site. This land shall be protected through fee title or conservation easement (acceptable to the California Department of Fish and Game).

2. The project proponent shall, to the satisfaction of the California Department of Fish and Game, prepare and implement a Swainson's hawk mitigation plan that will include preservation of Swainson's hawk foraging habitat.

3. The project proponent shall submit payment of a Swainson's hawk impact mitigation fee per acre impacted to the Department of Planning and Community Development in the amount as set forth in Chapter 16.130 of the Sacramento County Code as such may be amended from time to time and to the extent that said Chapter remains in effect.

4. Should the County Board of Supervisors adopt a Swainson's hawk mitigation policy/program (which may include a mitigation fee) prior to the implementation of one of the measures above, the project proponent may be subject to that program instead.

Impacts to Tricolor Blackbird

During the April 2002 field assessment, a large tricolor blackbird colony of up to 500 pairs was nesting within the blackberry thicket along Elder Creek. Construction activities have the potential to disturb nesting activities and remove habitat. Impacts to Tricolor Blackbird are, therefore, potentially significant.

MITIGATION MEASURES**:**

~~BR-11.~~BR-10. Prior to the ~~issuance of a work authorization permit~~approval of grading plans, submit a Tricolored Blackbird Mitigation Plan to the California Department of Fish and Game (CDFG) for review and approval. The plan shall include the following:

1. Preliminary surveys to determine the presence of nesting tricolored blackbirds;

2. Avoidance of active nesting colonies present on the site to the extent possible through establishment of temporary setbacks around the colonies until a qualified biologist verifies that young birds have successfully fledged.

Impacts to Giant Garter Snake and Northwestern Pond Turtle

The portion of Elder Creek located within the project area and the portion of Gerber Creek located adjacent to the southeast corner of the project area, represent~~s~~ potential habitat for the giant garter snake and the northwestern pond turtle. Construction of creek improvements and construction near ~~the~~ Elder Creek and Gerber Creek could impact both GGS and northwestern pond turtle. Impacts to GGS and northwestern pond turtle are potentially significant.

MITIGATION MEASURES**:**

~~BR-12.~~BR-11. The project site shall be surveyed for giant garter snakes and the northwestern pond turtle by a qualified biologist within 24 hours prior to the start of construction activities (including clearing and grubbing) located within 200 feet of Elder and Gerber Creek. Survey of the area shall be repeated if a lapse in

construction activity of two weeks or greater occurs. If a giant garter snake and/or northwestern pond turtle is encountered during construction, activities shall cease until appropriate corrective measures have been completed or it has been determined that the snake and/or turtle will not be harmed. Giant garter snakes and northwestern pond turtles encountered during construction should be allowed to move away on their own. Capture and relocation of trapped or injured individuals shall only be attempted by personnel or individuals with current USFWS recovery permits. Any incidental take shall be reported to the USFWS at (916) 979-2725 and Department of Environmental Review and Assessment at (916) 874-7914 within one working day. Any giant garter snake and/or northwestern pond turtle sightings shall be reported within 24 hours to the Department of Environmental Review and Assessment at 874-7914.

NVSSP Drainage Master Plan

Waters of the U.S.

On behalf of the County of Sacramento, ECORP Consulting, Inc. conducted a wetland delineation of the North Vineyard Station Specific Plan Area (NVSSP) Drainage Master Plan Site located in Sacramento County, California.

A portion of the NVSSP wetland delineation was conducted in accordance with the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987), and several parcels have subsequently been field verified by the Corps. Waters of the U.S. mapped on-site include wetlands and other waters. Wetlands consist of seasonal wetlands, wetland swales, vernal pools, and seasonal marshes. Other waters include Elder Creek and Gerber Creek.

Waters of the U.S. within the Drainage Master Plan field verified by the Corps of Engineers within the Vineyard Creek, Vineyard Point, and Morvai properties total 2.31 acres and are comprised of 0.94 acre of vernal pool, and 1.37 acres of creek.

Waters of the U.S. mapped according to Corps of Engineers protocol but not yet verified include 0.14 acre of vernal pool, 0.84 acre of seasonal wetland, 0.03 acre of wetland swale, and 7.21 acres of creek. Waters of the U.S. mapped via aerial photograph interpretation in the absence of ground-truthing include 0.03 acre of seasonal wetland, 4.90 acres of creek, and 0.84 acre of stock pond.

Wetlands

Vernal pools have been mapped throughout the unleveled and non-irrigated grasslands. Vernal pools are topographic basins within the grassland community and typically are underlain with an impermeable or semi-permeable hardpan or duripan layer. Vernal pools are inundated up to one foot through the wet season and are dry by late spring

through the following wet season. The plant species composition within vernal pools is predominantly native annual species that include slender popcorn flower (*Plagiobothrys stipitatus*), bractless hedge hyssop (*Gratiola ebracteata*), annual hair grass (*Deschampsia danthonioides*), dwarf wooly heads (*Psilocarphus brevissimus*), and Fremont's goldfields (*Lasthenia fremontii*).

The seasonal wetlands and wetland swales on-site are ephemerally wet features where runoff accumulates from adjacent upland areas into topographic basins or swales, which is further directed into larger creeks and streams. The vegetative composition of the seasonal wetlands and wetland swales on-site is primarily comprised on non-native wetland generalist plants with scattered native annual species. These include ryegrass, Mediterranean barley, annual hairgrass (*Deschampsia danthonioides*), hyssop loosestrife (*Lythrum hyssopifolium*), and little quaking grass (*Briza minor*). Seasonal wetlands have been mapped within the unleveled and non-irrigated pastures but have also been found within the previously farmed areas that have been left fallow and not irrigated.

Other Waters

Elder Creek and Gerber Creek, which flow in a westerly direction, have been mapped as seasonal creeks according to the "Elk Grove, California" 7.5-minute quadrangle. However, they may be perennial during high water years or as irrigation runoff increases from upstream sources. In general, both creeks exhibit bed-and-bank characteristics and ~~is~~ are largely unvegetated due to ~~its~~ depth and the scouring effects of flowing water. However, some hydrophytic vegetation may be present along the upper edges, and in areas where sediment accumulations provide a substrate suitable for plant establishment and growth. Himalaya blackberry (*Rubus discolor*) thickets can be found along the banks at various reaches of the creek.

Two stock ponds have been mapped within the Drainage Master Plan area. These aquatic features were not field mapped but appear to be excavated basins adjacent to the creeks. They likely fill to overflowing during the wet season and may be artificially maintained during the dry season.

Special Status Species

Based upon vegetation communities present on the property, species' known distributive data, and the references cited above, a list of potentially occurring special-status species has been developed for the Drainage Master Plan project area. This list is presented in Plate BR -3. Species include: six plant species, three invertebrates, one amphibian, two reptiles, fifteen birds, and seven mammals.

Plants

Special status plants that may occur on-site include those that are associated with vernal pools and marshes. The vernal pool species include dwarf downingia

(*Downingia pusilla*, CNPS list 2), Boggs Lake hedge-hyssop (*Gratiola heterosepala*, California-endangered and CNPS List 1B), Ahart's dwarf rush (*Juncus leiospermus* var. ahartii, federal species of concern and CNPS list 1B), Green's legenere (*Legenere limosa*, federal species of concern and CNPS List 1B), slender Orcutt grass (*Orcuttia tenuis*, California endangered, federal threatened, and CNPS List 1B) and Sacramento Orcutt grass (*Orcuttia viscida*, California endangered, federal endangered, and CNPS List 1B), and the marsh species includes Sanford's arrowhead (*Sagittaria sanfordii*, federal species of concern and CNPS List 1B). Of these, Boggs Lake hedge-hyssop, slender Orcutt grass, and Sacramento Orcutt grass are listed and protected pursuant to the state and/or federal Endangered Species Acts. Dwarf downingia, Green's legenere, Ahart's dwarf rush, and Sanford's arrowhead are not listed and protected pursuant to either state or federal Acts.

INVERTEBRATES

The vernal pool basins on-site can provide habitat for the federally listed vernal pool fairy shrimp (*Branchinecta lynchi*, federal threatened) and vernal pool tadpole shrimp (*Lepidurus packardi*, federal endangered), and as such, are often considered by the U.S. Fish and Wildlife Service (USFWS) to represent potentially occupied habitat.

Elderberry shrubs (*Sambucus mexicanus*) are host plant to the federally threatened Valley elderberry longhorn beetle (VELB, *Desmocerus californicus dimorphus*). The U.S., Fish and Wildlife Service typically consider all elderberry shrubs in this region to represent potentially occupied habitat.

FISH

There are no immediate fish issues within Elder Creek. However, impacts to the Creek may affect down stream conditions for federally listed fish species such as Sacramento Splittail and Central Valley Evolutionarily Significant Units (ESU) anadromous salmonids, such as Central Valley steelhead, Fall-run Chinook salmon, and spring-run salmon.

AMPHIBIANS

The seasonal wetlands, drainage swales, and vernal pools and adjacent grasslands on-site represent potentially suitable habitat for the western spadefoot toad (*Spea hammondi*, CDFG species of special concern and federal species of concern). No other special-status amphibians are expected to occur on-site.

REPTILES

Two special-status reptiles may occur on-site, the giant garter snake (*Thamnophis gigas*, California and federally threatened) and northwestern pond turtle (*Clemmys marmorata marmorata*, CDFG species of special concern and California Code of Regulation Title 14 fully protected species). Giant garter snakes typically occupy

perennial ponds, marshes, slow-moving streams, and agricultural ditches containing adequate water supply during the spring and summer months. Northwestern pond turtles typically occur within perennial streams, creeks, ponds and marshes. ~~This reach of Elder Creek~~The reaches of Elder Creek and Gerber Creek within the subject property represents potentially suitable giant garter snake and northwestern pond turtle habitat.

Plate BR -3
Potentially Occurring Special Status Species
NVSSP Drainage Master Plan

Attachment A. Potentially Occurring Special-Status Species

Common Name	Scientific Name	Federal Status	State Status	Other Status	Habitat Description	Approximate Survey Period (J F M A M J J A S O N D)
Plants						
Boggs Lake hedge-hyssop	*Gratiola heterosepala*	-	CE	1B	vernal pools	
Ahart's dwarf rush	*Juncus leiospermus* var. *ahartii*	-	-	FSC, 1B	vernal pools	
Greene's legenere	*Legenere limosa*	-	-	FSC, 1B	vernal pools	
Slender orcutt grass	*Orcuttia tenuis*	FT	CE	1B	vernal pools	
Sacramento orcutt grass	*Orcuttia viscida*	FE	CE	1B	vernal pools	
Sanford's arrowhead	*Sagittaria sanfordii*	-	-	FSC, 1B	marsh, creeks, ditches	
Invertebrates						
Vernal pool fairy shrimp	*Branchinecta lynchi*	FT	-	-	vernal pools/wetlands	
Vernal pool tadpole shrimp	*Lepidurus packardi*	FE	-	-	vernal pools/wetlands	
Valley elderberry longhorn beetle	*Desmocerus californicus dimorphus*	FT	-	-	riparian, woodland	
Amphibians						
Western spadefoot toad	*Spea hammondi*	-	-	CSC, CCR, BLM	vernal pools, wetlands/adjacent grassland	
Reptiles						
Northwestern pond turtle	*Clemmys marmorata marmorata*	-	-	CSC, CCR, FS	creeks, ponds	
Giant garter snake	*Thamnophis gigas*	FT	CT	CCR	ditches, sloughs, marshes	
Birds						
White-tailed kite	*Elanus leucurus*	-	-	CFP, MNB	woodland, grassland	
Northern harrier	*Circus cyaneus*	-	-	CSC	marsh, grassland	
Sharp-shinned hawk	*Accipiter striatus*	-	-	CSC	woodland	
Cooper's hawk	*Accipiter cooperii*	-	-	CSC	woodland	
Swainson's hawk (nesting)	*Buteo swainsoni*	-	CT	-	grassland, riparian	
Ferruginous hawk	*Buteo regalis*	-	-	CSC, MNB	grassland	
Golden eagle	*Aquila chrysaetos*	-	-	CFP, CSC, CDF	grassland	
Merlin	*Falco columbarius*	-	-	CSC	woodland, grassland	
Prairie falcon	*Falco mexicanus*	-	-	CSC	grassland	
Mountain plover (wintering)	*Charadrius montanus*	FPT	-	CSC, MNB	grassland, pasture	
Long-billed curlew (nesting)	*Numenius americanus*	-	-	CSC, MNB	grassland, pasture	
Burrowing owl	*Athene cunicularia*	-	-	CSC, MNB, BLM	grassland	
Short-eared owl	*Asio flammeus*	-	-	CSC, MNB	marsh, grassland	
Loggerhead shrike	*Lanius ludovicianus*	-	-	CSC, MNB	grassland, woodland	
Tricolored blackbird	*Agelaius tricolor*	-	-	CSC, MNB, BLM	marsh, grassland	
Mammals						
Small-footed myotis	*Myotis ciliolabrum*	-	-	BLM	various woodland/shrubland	
Long-eared myotis	*Myotis evotis*	-	-	BLM	deciduous or coniferous	

2002-052 SSS List

Plate BR-3 (cont.)
Potentially Occurring Special Status Species
NVSSP Drainage Master Plan

Attachment A. Potentially Occurring Special-Status Species

Common Name	Scientific Name	Federal Status	State Status	Other Status	Habitat Description	Approximate Survey Period											
						J	F	M	A	M	J	J	A	S	O	N	D
Fringed myotis	*Myotis thysanodes*	-	-	BLM	deciduous or coniferous												
Long-legged myotis	*Myotis volans*	-	-	CNDDB	deciduous or coniferous												
Yuma myotis	*Myotis yumanensis*	-	-	CSC, BLM	Riparian woodland												
Townsend's big-eared bat	*Corynorhinus townsendii*	-	-	CSC, FS, BLM	mines, man-made structures,												
Pallid bat	*Antrozous pallidus*	-	-	CSC, FS, BLM	mines, man-made structures,												

Status Codes

FE - Federally listed, Endangered.
FT - Federally listed, Threatened.
FPT - Formally Proposed for federal listing as Threatened.
FC - Candidate for federal listing as Threatened or Endangered.
FSC - U. S. Fish and Wildlife Service Species of Concern
MNB - U. S. Fish and Wildlife Service Migratory Nongame Birds of Management Concern
BLM - Bureau of Land Management Sensitive Species
CE - California listed, Endangered.
CT - California listed, Threatened.
CCR - California Code of Regulations Title 14 Fully Protected Species
CFP - Fish and Game Code of California Fully Protected Species (§3511-birds, §4700-mammals, §5050-reptiles/amphibians).
CSC - California Department of Fish and Game Species of Special Concern.
CDF - California Department of Forestry Sensitive Species
1B - California Native Plant Society/Rare or Endangered in California and elsewhere
2 - California Native Plant Society/Rare or Endangered in California, more common elsewhere
4 - California Native Plant Society/Plants of Limited Distribution
CNDDB - Species that is tracked by CDFG's Natural Diversity Database but does not have any of the above special-status designations otherwise.

2002-052 SSS List

BIRDS

The potentially occurring special status birds on-site include nesting raptors, nesting songbirds, and wintering or migrant birds. The nesting raptors include both tree nesting and ground nesting species. The potential nesting trees are scattered throughout the Drainage Master Plan area. Tree nesting species that may nest on-site are white-tailed kite (*Elanus leucurus*, Fish and Game Code fully protected and USFWS bird of management concern), Cooper's hawk (*Accipiter cooperii*, CDFG species of special concern), and Swainson's hawk (*Buteo swainsoni*, California threatened). Potentially occurring ground-nesting birds on-site include northern harrier (*Circus cyaneus*, CDFG species of special concern) and burrowing owl (*Athene cunicularia*, CDFG species of special concern and federal species of concern).

Special status songbirds that may occur within the project site include loggerhead shrike (*Lanius ludovicianus*, CDFG species of special concern and USFWS bird of management concern) and tricolored blackbird (*Agelaius tricolor*, CDFG species of special concern and USFWS bird of management concern).

Other special status birds that may occur on-site are not known to nest in this region and/or suitable nesting habitat is not present on-site. However, grassland and pastures on the project site represent potential foraging habitat for these remaining species. These are: sharp-shinned hawk (*Accipiter striatus*, CDFG species of special concern), ferruginous hawk (*Buteo regalis*, CDFG species of special concern and USFWS Bird of Management Concern), golden eagle (*Aquila chrysaetos*, Fish and Game Code §3511 fully protected species and CDFG species of special concern), Merlin (*Falco columbarius*, CDFG species of special concern), prairie falcon (*F. mexicanus*, CDFG species of special concern), mountain plover (*Charadrius montanus*, federally proposed threatened and USFWS Bird of Management Concern), long-billed curlew (*Nemenius americanus*, CDFG species of Special concern and USFWS Bird of Management Concern), and short-eared owl (*Asio flammeus*, CDFG species of special concern).

MAMMALS

Gerber Creek, Elder Creek and the irrigated pastures on-site may provide foraging habitat for a variety of special-status bats that are known to occur in this region. These are: small-footed myotis (*Myotis ciliolabrum*), long-eared myotis (*M. evotis*), fringed myotis (*M. thysanodes*), long-legged myotis (*M. volans*), Yuma myotis (*M. yumanensis*), Townsend's big-eared bat (*Corynorhinus townsendii*), and pallid bat (*Antrozous pallidus*). Typical roosting and breeding sites for these species include appropriate cliffs, buildings, caves, mines and bridges. The homes, outbuildings, and horse barns may be potentially used as roost sites, but breeding or nursery use is highly unlikely due to the presence of human disturbances. None of these species are listed and protected pursuant to the California or federal Endangered Species Act; they are considered CDFG species of special concern, Forest Service sensitive species, and/or Bureau of Land Management sensitive species.

Impact: Impacts to Waters of the U.S.

Gerber Creek and Elder Creek will generally remain in their current locations. However, 12.99 acres of the creeks will be directly or indirectly impacted by the proposed deepening and widening. In addition, in order to widen and realign the creeks, additional wetland impacts will result in some locations. These impacts include 1.08 acres of vernal pool, 0.77 acre of seasonal wetland, 0.03 acre of seasonal wetland swale, and 0.84 acre of stock pond. The reconstructed creeks will consist of a low-flow channel, associated channel bottom wetlands, wetland/riparian benches and nesting islands.

The DMP project will emphasize enhancement and long-term preservation of the creek corridors' functions and values. The initial design of the drainage corridor focused primarily on flood-flows and water quality treatment requirements. The preliminary design has been refined to avoid wetland features where possible, to incorporate a meandering low-flow channel with adjacent wetlands, wetland and riparian benches, and nesting islands to compensate for impacts to wetlands and their functions and values. The channel was designed to require minimal maintenance and allow for the establishment of woody vegetation without compromising flood protection.

The proposed DMP design replaces and enhances the acreage, functions and values of the wetlands to be impacted during construction. The existing channelized creeks will be re-contoured, widened and deepened to accommodate anticipated storm water flood-flows and provide for public safety. The existing channel alignments will be maintained wherever practicable. In order to preserve as much of the existing riparian habitat as possible, portions of the creeks that have significant vegetation have been avoided and incorporated into the final overall channel design.

The modified drainage corridors will result in 4.85 acres of creek (low-flow channel), 17.55 acres of channel bottom/wetlands and 3.23 acres of wetland/riparian benches. Post-project wetland/riparian habitat acreages will total 25.63 acres, a net gain of nearly 11.80 acres of habitat.

This plan has been submitted to the U.S. Army Corps of Engineers as part of an application for an individual permit. Impacts associated with the implementation of the NVSSP Drainage Master Plan are considered less-than-significant.

MITIGATION MEASURES**:**

None.

Impact: Effects on Vernal Pool Species.

Construction of the proposed project will remove 1.08 acres of vernal pools, habitat for the vernal pool fairy shrimp, vernal pool tadpole shrimp, and spadefoot toad. Removal of this habitat represents a significant impact.

MITIGATION MEASURES**:**

~~BR-13.~~BR-12. The applicant shall compensate for impacts to vernal pool species through consultation with the U.S. Fish and Wildlife Service as outlined in Section 7 of the Endangered Species Act. The applicant shall implement all measures included in the Biological Opinion issued as a result of this consultation.

Impact: Effects on birds of prey.

Project construction has the potential to disturb nesting activities of listed birds of prey. Impacts to Swainson's Hawk and other raptors are considered potentially significant.

MITIGATION MEASURES**:**

~~BR-14.~~BR-13. If construction is proposed during the raptor breeding season (February – August), a focused survey for migratory bird nests shall be conducted within 30 days prior to the beginning of construction activities by a qualified biologist in order to identify active nests on the site. If active nests are found, no construction activities shall take place within 500 feet of the nest until the young have fledged. Trees containing nests that must be removed as a result of project implementation shall be removed during the non-breeding season (September – January). If no active nests are found during the focused survey, no further mitigation will be required.

Impacts to Giant Garter Snake and Northwestern Pond Turtle

The portions of Elder Creek and Gerber Creek located within the project area represent potential habitat for the giant garter snake and the northwestern pond turtle. Construction of creek improvements could impact both GGS and northwestern pond turtle. Impacts to GGS and northwestern pond turtle are potentially significant.

MITIGATION MEASURES**:**

~~BR-15.~~BR-14. The project site shall be surveyed for giant garter snakes and the northwestern pond turtle by a qualified biologist within 24 hours prior to the start of construction activities (including clearing and grubbing) located within 200 feet of Elder or Gerber Creeks. Survey of the area shall be repeated if a lapse in construction activity of two weeks or greater occurs. If a giant garter snake and/or northwestern pond turtle is encountered during construction, activities shall cease until appropriate corrective measures have been completed or it has been determined that the snake and/or turtle will not be harmed. Giant garter snakes and northwestern pond turtles encountered during construction should be allowed to move away on their own. Capture and relocation of trapped or injured individuals shall only be attempted by personnel or individuals with current USFWS recovery permits. Any incidental take shall be reported to the USFWS at (916) 979-2725 and Department of Environmental Review and

Assessment at (916) 874-7914 within one working day. Any giant garter snake and/or northwestern pond turtle sightings shall be reported within 24 hours to the Department of Environmental Review and Assessment at 874-7914.

NVSSP WATER TREATMENT FACILITY

A portion of the NVSSP Water Treatment Facility is located in the northwest corner of the Vineyard Point subdivision Plate ~~XX~~BR-4. The remainder of the property lies immediately to the west, between Vineyard Point and the CCTR tracks.

The area, which is not located within the subdivision boundaries, contains a vernal pool complex as detailed by Plate BR -5. Impacts to the site are similar to impacts of the Vineyard Point subdivision.

Impact: Impacts to wetlands.

The proposed project has the potential to impact Waters of the United States including vernal pools. The proposed mitigation will ensure that this impact is less-than-significant.

MITIGATION MEASURES:

~~BR-16.~~BR-15. To compensate for the loss of wetlands and waters of the U.S., one of the following measures shall be implemented:

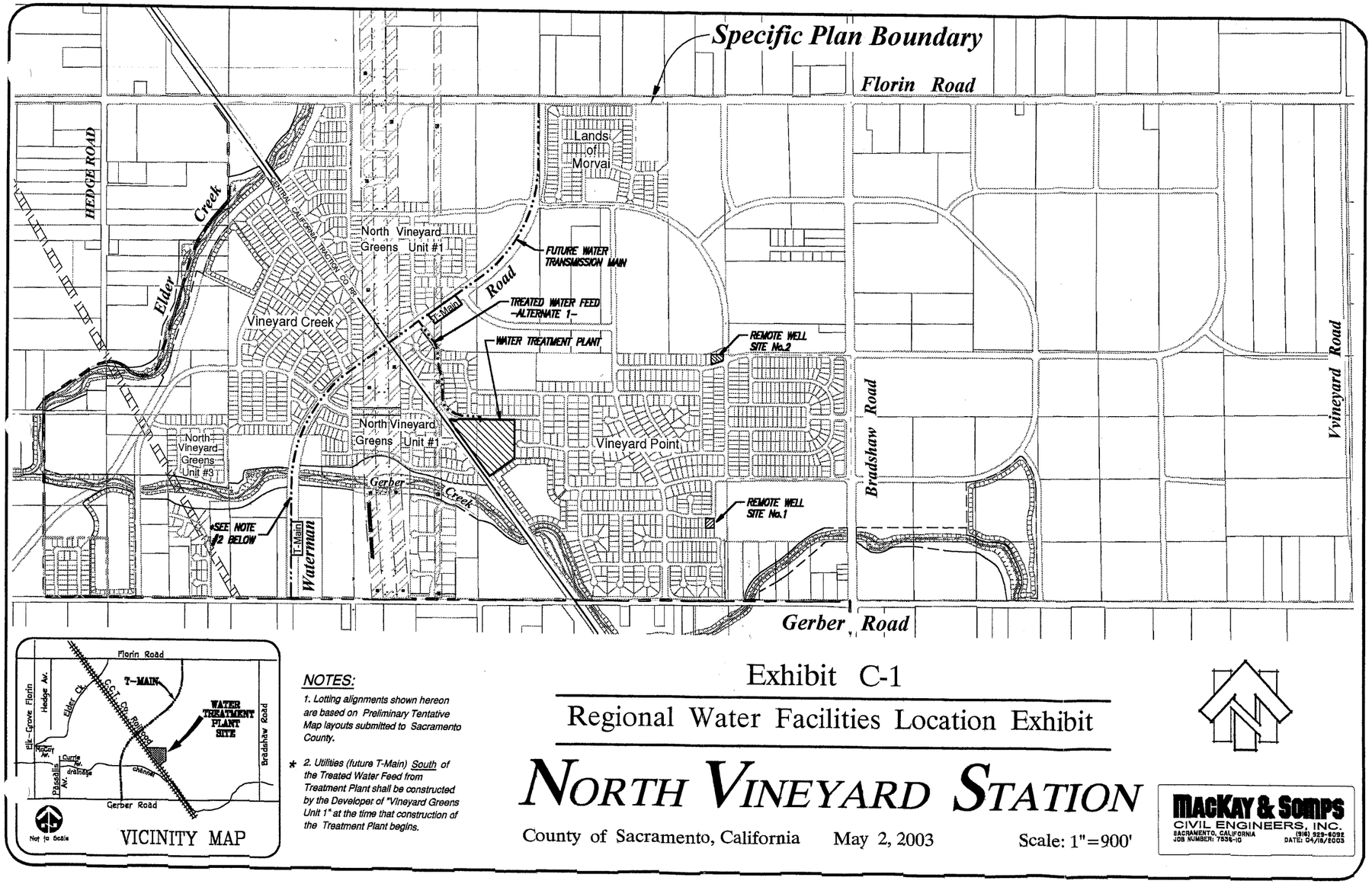
1. Preserve or create wetlands sufficient to result in no net loss of wetland acreage, and protect their required watersheds as is necessary for the continued function of wetlands on the project site. The appropriate hearing body shall determine that project design, configuration, and wetland management plan, provides reasonable assurances that the wetlands will be protected and their long-term ecological health maintained.

2. Where a Section 404 Permit has been issued by the Corps of Engineers, or an application has been made to obtain a Section 404 Permit, the Mitigation and Management Plan required by that permit or proposed to satisfy the requirements of the Corps for granting a permit may be submitted for purposes of satisfying paragraph 1, provided a no net loss of wetlands is achieved. ~~and, provided, further, that such mitigation and management plan shall be subject to the independent, discretionary approval of the Board of Supervisors.~~

3. Pay to the County of Sacramento an amount based on a rate of $35,000 per acre for the unmitigated/uncompensated wetlands, which shall constitute mitigation for purposes of implementing adopted no net loss policies and CEQA required mitigation. The payment shall be collected by the Department of Planning and Community Development at the time of Improvement Plan or

Building Permit approval, whichever occurs earlier, and deposited into the Wetlands Restoration Trust Fund.

Plate BR -4
NVSSP Water Treatment Facility Location



NOTES:

1. Lotting alignments shown hereon are based on Preliminary Tentative Map layouts submitted to Sacramento County.

* 2. Utilities (future T-Main) South of the Treated Water Feed from Treatment Plant shall be constructed by the Developer of "Vineyard Greens Unit 1" at the time that construction of the Treatment Plant begins.

Exhibit C-1

Regional Water Facilities Location Exhibit

NORTH VINEYARD STATION

County of Sacramento, California May 2, 2003 Scale: 1"=900'

MACKAY & SOMPS
CIVIL ENGINEERS, INC.
SACRAMENTO, CALIFORNIA (916) 325-6032
JOB NUMBER: 7536-10 DATE: 04/15/2003

Impact: Effects on Vernal Pool Species.

Construction of the proposed project has the potential to impact vernal pools, habitat for the vernal pool fairy shrimp, vernal pool tadpole shrimp, and spadefoot toad. Removal of this habitat represents a significant impact.

MITIGATION MEASURES**:**

~~BR-17.~~BR-16. The applicant shall compensate for impacts to vernal pool species through consultation with the U.S. Fish and Wildlife Service as outlined in Section 7 of the Endangered Species Act. The applicant shall implement all measures included in the Biological Opinion issued as a result of this consultation.

Impact: Effects on birds of prey.

Project construction has the potential to disturb nesting activities of listed birds of prey. Impacts to Swainson's Hawk and other raptor are considered potentially significant.

MITIGATION MEASURES**:**

~~BR-18.~~BR-17. If construction is proposed during the raptor breeding season (February – August), a focused survey for migratory bird nests shall be conducted within 30 days prior to the beginning of construction activities by a qualified biologist in order to identify active nests on the site. If active nests are found, no construction activities shall take place within 500 feet of the nest until the young have fledged. Trees containing nests that must be removed as a result of project implementation shall be removed during the non-breeding season (September – January). If no active nests are found during the focused survey, no further mitigation will be required.

~~BR-19.~~BR-18. To mitigate for the loss of Swainson's hawk foraging habitat, prior to the approval of Improvement Plans, the applicant shall perform one of the following:

1. The project proponent shall preserve acreage at a rate of 0.50 acre for each acre lost of similar habitat within a 10-mile radius of the project site. This land shall be protected through fee title or conservation easement (acceptable to the California Department of Fish and Game).

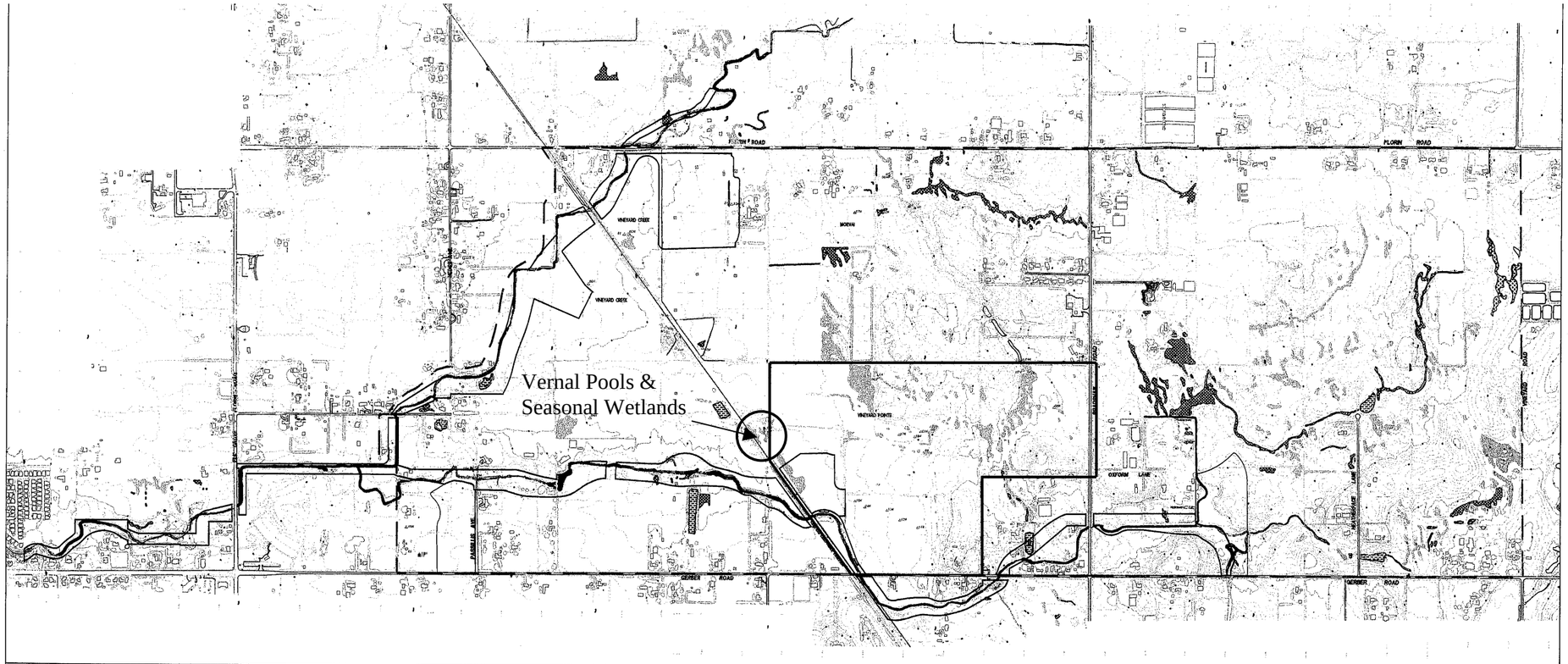
2. The project proponent shall, to the satisfaction of the California Department of Fish and Game, prepare and implement a Swainson's hawk mitigation plan that will include preservation of Swainson's hawk foraging habitat.

3. The project proponent shall submit payment of a Swainson's hawk impact mitigation fee per acre impacted to the Department of Planning and Community Development in the amount as set forth in Chapter 16.130 of

the Sacramento County Code as such may be amended from time to time and to the extent that said Chapter remains in effect.

4. Should the County Board of Supervisors adopt a Swainson's hawk mitigation policy/program (which may include a mitigation fee) prior to the implementation of one of the measures above, the project proponent may be subject to that program instead.

Plate BR -5
Wetlands on Treatment Plant Site



N

SCALE IN FEET
0 600 1200
SCALE: 1" = 1 200'

CLASSIFICATION	WATERS OF THE U.S. ACREAGE	TOTAL NVSSP ACREAGE	DMP ACREAGE
Vernal Pool		27.96	1.08
Seasonal Wetland		19.13	0.87
Seasonal Wetland Swale		1.52	0.03
Seasonal Marsh		3.92	--
Creek		13.48	13.48
Stock Pond		4.24	0.84
Fresh Water Marsh		1.97	--
TOTAL		72.22	16.30

Drainage Master Plan Boundary

NOTE:
Portions of the project have been field delineated and verified by the CORPS of Engineers. Other portions have been field delineated, but have not yet been verified by the CORPS. Those areas where permission to access the property have been delineated by aerial photograph interpretation (See Attachment) identifies the level of delineations conducted for parcels affected by the propsed project.

FILENAME: -DWGS\2002-052\NVS-WINCREST.DWG 12/6/02

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

FIGURE 9. North Vineyard Station Specific Plan Wetlands

2002-052 Vineyard Station

11 CULTURAL RESOURCES

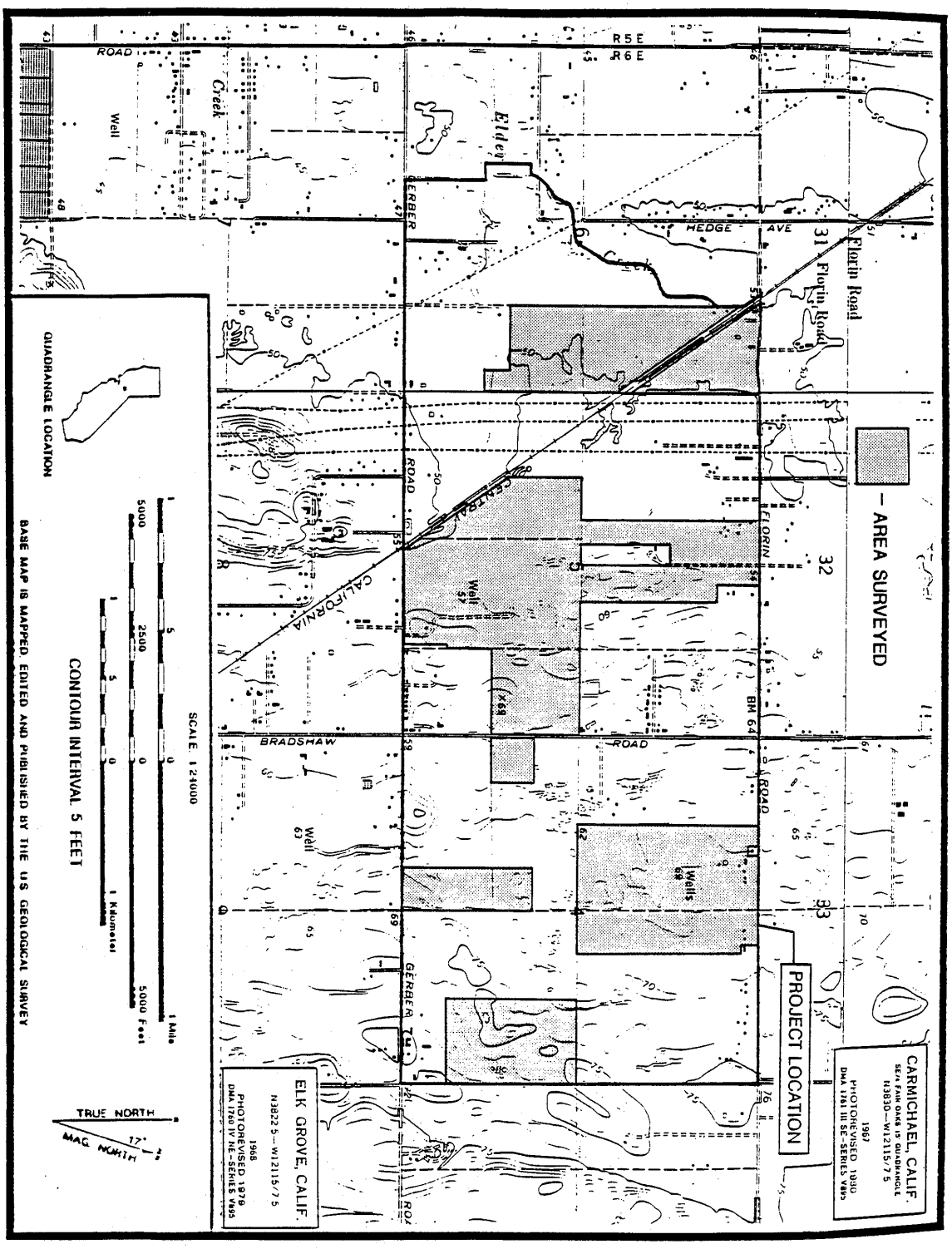
BACKGROUND

For the prior EIR, a total of 556 acres of the Specific Plan Area, known as the Survey Area (Plate CR -1), was given a complete pedestrian walk-over by a team of archeologists. This acreage includes the areas encompassed by the Vineyard Creek Subdivision and the Vineyard Point Subdivision. The remaining 1,024 acres of the Specific Plan Area were inspected for the presence or absence of historic period structures via public roadways.

No prehistoric artifacts or evidence of prehistoric use of the Survey Area was found. One historic period archeological site was discovered near the Central California Traction Railroad in the northwest portion of the Plan Area. This site consists of a small scatter of 1930s/40s era refuse that was primarily domestic in nature. Broken condiment bottles, fragments of a child's decorated ceramic tea set, sardine cans, red bricks, a sewer pipe fragment, and a bent iron pipe were all discovered protruding from the ground surface. No existing structures, or structures shown on historic period maps or other documentary sources, were located anywhere near this refuse deposit. The closest feature is the Central California Traction Railroad, which is located to the west and south of the site area. Given the types of historic period artifacts present at the site, it is unlikely that this refuse was once associated with the railroad. It would appear that this small refuse pile probably represents a single episode dumping of material that was once associated with a residence. The existing structure on this parcel is located approximately 2,000 feet to the north, northwest. This home was constructed in 1910, however, and it is possible that the refuse deposited at the site originated from this residence. According to the prior EIR, this deposit does not qualify as an important archeological resource, and no additional mitigation is required.

Twelve historic period (greater than 45 years old) structures were identified during the pedestrian and vehicular inspection of the Specific Plan Area. Three of these structures are located within the Survey Area, while the remaining nine were found within the remaining Specific Plan Area. One of these structures is located within the Vineyard Creek Subdivision area. The prior EIR concluded the following regarding the historic period structures:

Plate CR -1
Survey Area



> None of the surviving structures within the Survey Area represent the early years of pioneer settlement in this area. The earliest structures date to about the turn of the century. There are a number of structures in the Specific Plan Area dating within the 1900-1920 era representing small rural residence types and agricultural utility buildings common for this period. The types of residences within the Plan Area varied. The two most common styles were the Craftsman and bungalow, which was popular throughout rural America from about 1905 to 1920, and the Minimal Traditional, a style that became popular in the late 1930s and remained the dominant style during the post-war 1940s and 1950s. Examples in the Plan Area range from well preserved to poorly maintained to remodeled beyond recognition. None of the extant buildings are associated with important individuals or events, and therefore, do not constitute "important" resources under CEQA criteria in this area.

However, four historic structures were identified as potentially important due to their architectural integrity and as representative examples of identifiable architectural styles. One of these structures is located within the Vineyard Creek Subdivision area. The remaining three structures are located within the remaining Specific Plan planning area. At the time of publication of the prior EIR, these four properties were considered potentially significant historical resources, but were not evaluated for eligibility to the National Register of Historic Places.

The prior EIR concluded that the project could result in future disturbance of known and unknown prehistoric and/or historic resources. These impacts are considered potentially significant. The County of Sacramento has an environmental review process for projects involving discretionary permits that requires cultural resource reports to be prepared in situations where development is proposed in areas known to be sensitive for cultural (archaeological and historic) resources. Since future development within the Plan area will require additional entitlements such development will also be subject to further discretionary review. Potential construction-related impacts to cultural resources will be addressed at that time. However, to ensure impacts to cultural resources are minimized and addressed at the earliest stages of proposed development, mitigation measures were incorporated into the North Vineyard Specific Plan. These measures remain applicable to the current project.

VINEYARD CREEK

Peak & Associates prepared a Cultural Resource Inventory and Evaluation for the Vineyard Creek subdivision. This report further evaluated the potentially significant historic resources on the Vineyard Creek property using National Register criteria.

ARCHEOLOGICAL RESOURCES

Three prehistoric isolates were identified during surveys. These include:

- Isolate #1 is two basalt secondary flakes
- Isolate #2 is a single, small, black chert, tertiary flake
- Isolate #3 is a possible mano made on a gneiss stream cobble, and a possible hammerstone, made on a granitic stream cobble

All isolates were mapped and documented, and left in place. Isolates are *a priori*, considered not significant, and are ineligible for inclusion on the National Register of Historic Places, thus requiring no protective measures.

HISTORIC PERIOD SITES

FRAMEWORK FOR EVALUATION

Decisions regarding management of cultural resources hinge on their determination of significance (36 CFR 60.2). As part of this decision-making process, the National Park Service has identified components which must be considered in the evaluation process, including:

- Criteria for significance;
- Historic context; and
- Integrity

CRITERIA FOR SIGNIFICANCE

Significance of cultural resources is measured against the National Register criteria for evaluation:

> The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and,
>
> a) That are associated with events that have made a significant contribution to the broad patterns of our history; or
>
> b) That are associated with the lives of persons significant in our past; or
>
> c) That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

d) That have yielded, or may be likely to yield, information important in prehistory or history (36 CFR 60.4).

HISTORIC CONTEXT

The historic context is a narrative statement "that groups information about a series of historic properties based on a shared theme, specific time period, and geographical area" To evaluate resources in accordance with federal guidelines, these sites must be examined to determine whether they are examples of a defined "property type". The property type is a "grouping of individual properties based on shared physical or associative characteristics". Through this evaluation, each site is viewed as a representative of a class of similar properties rather than as a unique phenomenon.

A well developed historical context helps determine the association between property types and broad patterns of American history. Once this linkage is established, each resource's potential to address specific research issues can be explicated.

INTEGRITY

For a property to be eligible for listing in the National Register it must meet one of the criteria for significance (36 CFR 60.4 [a, b, c, d]) and retain integrity. Integrity is defined as "the authenticity of a property's historic identity, evidenced by the survival of physical characteristics that existed during the property's historic or prehistoric period".

The following discussion is derived from National Register Bulletin 15 ("How to Apply the National Register Criteria for Evaluation").

Within the concept of integrity, there are seven aspects or qualities that define integrity in various combinations. The seven aspects are: location, design, setting, materials, workmanship, feeling, and association. To retain historic integrity, a property will possess several or usually most of these aspects. The retention of specific aspects is necessary for a property to convey this significance. Determining which of the seven aspects are important involves knowing why, where and when the property is significant.

The prescribed steps in assessing integrity are as follows:

- Define the essential physical features that must be present for a property to represent its significance;
- Determine whether the essential physical features are visible enough to convey their significance;
- Determine whether the property needs to be compared with similar properties; and,

- Determine, based on the significance and essential physical features, which aspects of integrity are particularly vital to the property being nominated and if they are present.

Ultimately, the question of integrity is answered by whether or not the property retains the identity for which it is significant. All properties change over time. It is not necessary for a property to retain all its historic physical features or characteristics. However, the property must retain the essential physical features that enable it to convey its historic identity. The essential physical features are those features that define why a property is significant.

A property's historic significance depends on certain aspects of integrity. Determining which of the aspects is most important to a particular property requires an understanding of the property's significance and its essential physical features. For example, a property's historic significance can be related to its association with an important event, historical pattern or person. A property that is significant for its historic association is eligible for listing if it retains the essential physical features that made up its character or appearance during the period of its association with the important event, historical pattern, or person.

A property important for association with an event, historical pattern, or person ideally might retain some features of all seven aspects of integrity. Integrity of design and workmanship, however, might not be as important to the significance, and would not be relevant if the property were an archeological site. A basic integrity test for a property associated with an important event or person is whether a historical contemporary would recognize the property as it exists today. For archeological sites that are eligible under Criteria a and b, the seven aspects of integrity can be applied in much the same way as they are to buildings, structures, or objects.

In sum, the assessment of a resource's National Register eligibility hinges on meeting two conditions:

1. the site must possess the potential to be eligible for listing in the National Register under one of the evaluation criteria either individually or as a contributing element of a district based on the historic context that is established; and

2. The site must possess sufficient integrity, i.e. it must retain the qualities that make it eligible for the National Register.

For the National Register, "a district possesses a significant concentration, linkage, or continuity of … objects united historically or aesthetically by plan or physical development." The identity of a district derives from the relationship of its resources, which can be an arrangement of functionally related properties.

RESEARCH

PREVIOUS RESEARCH

Two cultural resource studies have been conducted on the subject property. The first of those studies resulted in the recordation of one of the resources –CA-SAC-715H (PAR 1995). The second study involved the recordation of a segment of a previously recorded linear resource—CA-SAC-506H, and an evaluation of both of the resources (Jones & Stokes 2001). The 2001 evaluation concluded that neither of the resources were eligible for the National Register or for the California Register of Historical Resources.

CURRENT RESEARCH

To confirm the conclusions reached by previous researchers, a minor amount of archival research has been conducted to supplement the previous research effort. Research was conducted at the California Room of the California State Library, and at the Sacramento Archives and Museums Collections Center. Documents used include County Tax Assessment Map Books, County Tax Assessment Rolls, Probate Records, County histories, and the Sacramento Bee-Union Index.

HISTORIC CONTEXT

HISTORIC LAND USE AND OCCUPANCY

The lands of this portion of Sacramento County are primarily dry plains, cut be occasional drainages. Elder Creek crosses the project area. The lands along the major drainages were the first to be occupied with settlement occurring in the dry plains and on the lesser drainages such as Elder Creek in the 1850s and early 1860s.

The lands of this portion of Sacramento County were used for dry land farming for crops such as grain and hay. With a permanent water source, some of the lands could be used for grapes and orchards, or for dairies.

The 1855 General Land Office for the Township shows no houses within three miles of the project area. Elder Creek is shown as an “arroyo” suggesting that it was a fairly minor drainage. The only agricultural improvements are “fields”, again suggesting dry-land cultivation of grain or hay.

As early as 1900, Robert Larson had acquired the east half of the northeast quarter of section 6,a total of 79 acres. The land was valued at $1,420, with improvements valued at $250 (County Tax Assessment Roll 1900). The 1903 County map indicates this ownership.

In 1912, Robert Larson land had increased in value to $2,240, and improvements had increased in value to $1,000. Larson also owned land to the north of Florin Road in section 31, Township 8 North Range 6 East.

The first detailed topographic map of the region is the 1909 Elk Grove 1:31,680 topographic map, based on a 1907 survey. There were two houses in the project vicinity. One of these locations appears to be the location of CA-SAC-715H. The other is further east, on the south side of Elder Creek.

The County Building Record gave an approximate date of construction for the residence as 1910 (Jones & Stokes 2001). It is likely that the actual date of construction preceded this by a few years, with a building at this location by 1907. The increase in improvement values between 1900 and 1912 further supports this. The second building shown on the 1909 topographic map may have been Larson's first house on the land, or the house first built by a previous owner.

By 1919, the land ownership had changed from Robert Larson to Robert and Anna Larson (County Tax Assessment Roll 1919). The Larsons owned the land together until at least 1934. In that year, the 74 acres were valued at $2,660, and improvements at $1,400. They paid a total tax of $6.88 for the year. They also had $1,800 in personal property, for which they paid an additional $3.85 in taxes (County Tax Assessment Roll 1934). The Larsons apparently raised grain and grapes.

Anna Larson died in 1934 or 1935. Her husband prepared a new will on Jan. 21, 1936, leaving all his estate to his daughter Mary Barton of Hagginwood. Nothing was left to the other two children, Minnie Lewis and Newton Larson, both of Florin, as they had been "otherwise provided for" (Probate Case File 19666).

By 1939, the land and house were owned by Minnie Lewis (County Tax Assessment Roll 1939). Lewis was the daughter of Robert and Anna Larson. This suggests that the house was turned over to Minnie right after the death of her mother, and other lands or property transferred to Newton Larson.

Robert Larson re-married after he prepared his 1936 will. He died October 3, 1939. His widow had to petition the court for $10 a month as she was left without any means of support. Ultimately, she received a portion of the estate, even though she was not named in the will (Probate Case File 19666).

The 1941 Franklin quadrangle (1:62,500 scale) produced by the U.S. Army showed two buildings on the property. The 1952 Elk Grove USGS 7.5' topographic quadrangle indicates that the creek had moved considerably southward, with the building on the south side of the creek no longer present. There was also an outbuilding to the southwest of the residence. South and east of the creek is a vineyard totaling about 10 acres.

THE RAILROAD

The early years of the twentieth century were an era of rapid development of a large number of interurban electrified railways. Technological advances related to the production and long-distance transmission of hydroelectric generated power in the late nineteenth century made this a popular form of transportation for passenger service and

freight service throughout the virtually flat terrain of the Central Valley. One of the systems to be organized and built in this era was the Central California Traction Railroad (CCT). The corporation was organized in 1905 with three goals in mind: to compete with the Southern Pacific and Western Pacific railroads for transporting agricultural products from farms on the east side of the San Joaquin and Sacramento valleys; to develop farmland along the railroad right-of-way; and to provide a major customer for the power company owned by several of the corporate directors.

The 53-mile CCT main line connected Sacramento with Stockton, with a branch from the main line to Lodi. The section from Sheldon to Sacramento including the section under review was completed in 1910. Almost from the beginning, the railroad built up a substantial freight business, and was a financial success. In the 1920s, Southern Pacific, Santa Fe and Western Pacific purchased the railway jointly. Eventually, the increasing use of personal automobiles and bus lines brought a reduction in the number of passengers for the CCT, and passenger service was eliminated in 1933. In 1946, the use of electricity was discontinued in favor of diesel service (Hilton and Due 1960: 401; Fickewirth 1992:27).

Site Descriptions

CA-SAC-715H is a two-story, square Craftsman-style house. The roof is flared and hipped, with beaded tongue and groove boxed eaves and knee braces. A large brick chimney is located along the exterior center of the eastern façade. Dormers are set in the roof on both the front and back of the residence. The house is sited on a 3-foot high concrete foundation. The top row of the concrete has wheat sheath designs impressed in the concrete. The residence is covered with 3-in-1 board siding. The west side of the residence has a bay window, and the east has an oriel window with brackets. The front porch extends across the full width of the residence, and has a hipped roof. This roof is supported by four tapered columns on concrete piers. In 1959, a second story, sympathetic to the original style, was added to the house (Jones & Stokes 2001:11-12).

CA-SAC-506H is a 400-foot segment of the Central California Traction Railroad and an associated trestle. The railroad is a single-track standard gauge line on a berm continuing onto a trestle spanning Elder Creek. The trestle is six feet in height, and is supported by five concrete and wood supports (Jones & Stokes 2001:11).

Evaluation of the Sites

CA-SAC-715H

The residence is not associated with events important in our past (Criterion A), nor with individuals important in our past (Criterion B). Robert Larson did not even have a biography in the County histories published during his prime years on the property (Willis 1913; Reed 1923).

Evaluated under Criterion C, it can be concluded that the building represents a fairly common style in Sacramento County. It is not a particularly good example of the style. The addition of the second story in 1959 destroyed the integrity of the building's original design and appearance. As such, it can be concluded that the building is not eligible for the National Register.

CA-SAC-506H

The relatively short electric interurban line is one of many electric railways built in the early years of the twentieth century. It is not associated with events or individuals important in our past (Criteria A and B). The line was constructed on the Central Valley floor, involving relatively simple construction and few engineering challenges. The conversion to diesel in 1946 involved the removal of many design elements and materials of the original system, impacting the overall integrity of the resource. The resource is not eligible for the National Register under Criterion C.

CONCLUSIONS

Neither the building nor the section of the railroad are eligible for inclusion in the National Register. No prehistoric, archaeological sites were encountered during the field investigation of the Survey Area. However, the lack of surface evidence does not preclude the existence of important, subsurface cultural materials. There is a potential to unearth buried cultural remains during future project construction activities. Caution should, therefore, be exercised during future development activities. Any accidental encountered of previously unidentified cultural materials will require notification of the Department of Environmental Review and Assessment. If skeletal remains are encountered, both the Department of Environmental Review and Assessment and the County Coroner must be immediately notified. With the implementation of the mitigation proposed in the prior EIR, however, these potential impacts to cultural resources in the Vineyard Creek subdivision are considered less than significant.

VINEYARD POINT

The Vineyard Point subdivision was also a part of the original Survey Area. No potentially significant archeological or architectural resources were discovered during the surveys. However, this does not preclude the existence of important, subsurface cultural materials. With the implementation of the mitigation proposed in the prior EIR, however, these potential impacts to cultural resources in the Vineyard Point subdivision are considered less than significant.

12 WATER SUPPLY

INTRODUCTION

An updated Master Water Supply and Water Distribution System Report (July 9, 2003) was prepared for the NVSSP by MacKay and Somps civil engineers. The purpose of this study is to identify facilities necessary to meet the water supply needs of developing the Plan area. This study updates the Master Water Supply and Water Distribution System Report for the Plan dated December 1997 also prepared by MacKay & Somps, which was incorporated into the Board certified Final EIR for the project dated February 1998.

The NVSSP comprises 1,595 acres of the 5,596-acre Northern Study Area identified in the 1998 Zone 40 Adjacent Areas Study. Approximately 1,285 acres of the NVSSP area will contribute to water demands per the approved land use designations. The NVSSP area will ultimately be served by a combination of groundwater and surface water. Water demands and associated infrastructure needs for the various land uses have been identified and hydraulic analyses, including fire flow, for all major phases of development within the NVSSP area have been prepared and are included in this report.

REGULATORY SETTING

GENERAL PLAN (GP)

The Sacramento County General Plan includes Policies CO-20 and CO-21, which state the following:

> CO-20 – In new development areas, as identified in Figure III-1 of the Land Use Element, entitlements for urban development shall not be granted until a Master Plan for water supply has been adopted by the Board of Supervisors and all agreements and financing for supplemental water supplies are in place. The land use planning process may proceed, and specific plans and rezoning may be approved.
>
> CO-21 – The Master Water Plan shall include three planning objectives which direct the plan to consider alternate conservation measures, achieve safe yield of ground water supply in conjunction with development in new urban growth areas, and formulate a five year monitoring program to review water plan progress.

The intent of these policies is to assist the County in meeting its objective of having a regionally safe ground water yield.

SACRAMENTO COUNTY WATER AGENCY (SCWA) ZONE 40

The Sacramento County Water Agency (SCWA) will provide major water facilities such as transmission pipelines, storage reservoirs, pump stations, wells and treatment facilities for the Specific Plan Area. The SCWA is governed by the Sacramento County Board of Supervisors acting as the Agency's Board of Directors. It may contract with the Federal Government and others with respect to the purchase, sale, and acquisition of surface water.

PROPOSED WATER SUPPLY MASTER PLAN

WATER DEMAND

The NVSSP currently proposes six phases of development with project buildout taking place over a 15-year period. The timelines provided are used for infrastructure planning purposes and could be somewhat different in actuality.

PHASE A-1 (YEAR EST. 2004-2005)

Phase A-1 is bounded on the north by 9 Street, on the south by Gerber Road, on the east by 4 Street, and on the west by the CCTC Railroad tracks. This initial phase is primarily comprised of single-family residential zoning of 3 to 7 units per acre. The water demands of this phase are based on current planning for the development of 114 acres, which includes construction of up to 601 residential units.

PHASE A-2 (YEARS EST. 2005-2009)

Phase A-2 is comprised of four separate areas in the western portion of the NVSSP. It consists of 166 acres of proposed development and is generally comprised of single-family residential zoning of 3 to 7 units per acre for a total of 947 residential units, including approximately 16 acres of parkland.

PHASE B (YEARS EST. 2006-2011)

Phase B is located in the north and central portion of the NVSSP. This phase is roughly bounded on the north by Florin Road, on the south by 9 Street, on the east by Bradshaw Road, and on the west by the overhead electrical transmission easement. Phase B consists of 256 acres of proposed development and is comprised of single and multi-family residential, commercial, school, parkland, and public services zoning, with a total of 1,262 residential dwelling units.

PHASE C (YEARS EST. 2008-2014)

Phase C is located in the eastern portion of the NVSSP. This phase is bounded on the north by Florin Road, on the south by Gerber Road, on the east by the Vineyard Road extension and on the west by Bradshaw Road. Phase C consists of 350 acres of proposed development and is comprised of single-family residential, school, and parkland zoning, including 1,259 residential dwelling units.

PHASE D

Phase D includes four separate areas in the NVSSP. This phase adds 240 acres of proposed development including single-family residential, commercial and school zoning, with a total number of 920 residential dwelling units.

PHASE E (BUILDOUT)

Phase E represents the final build-out condition for the NVSSP. It is comprised of the remaining 156 acres of proposed development including single and multi-family residential, commercial and parkland zoning, with a total number of 730 residential dwelling units.

Water demand for the transmission pipeline and storage facilities were derived using equivalent development unit (EDU) demands for each development phase of the Plan. Proposed unit development and land uses are converted to EDUs, which are then converted to average daily demand (ADD) by applying a single conversion factor (1 EDU + 0.41 gallons per minute (gpm) ADD x 1.07). A 7% transmission loss is accounted for in this conversion. Water supply modeling (WaterCAD) was generated for each major development phase through buildout of the Plan area. Maximum-Day and Peak-Hour demand scenarios were created for each water supply. The results are tabulated in the Master Water Supply and Water Distribution System Report Appendices. The EDU conversion factor utilized in the Land Use and Water Demand Tabulations are as follows:

Table 12-1
Equivalent Development Unit/Water Demand Conversion Factors

Zoned Land Use	EDU Conversion Factor	AVG. Daily Demand (gpm/EDU)	Max Day Demand (gpm/EDU)
Residential (1 – 3 units/acre)	1 EDU / Unit	0.41	0.82
Residential (3 – 5 units/acre)	1 EDU / Unit	0.41	0.82
Residential (5 – 7 units/acre)	1 EDU / Unit	0.41	0.82
Residential (7 – 14 units/acre)	1 EDU / Unit	0.41	0.82
Multi-Family	0.366 EDUs / Unit	0.41	0.82
Commercial/Industrial	3.34 EDUs / Acre	0.41	0.82
Schools/Institutional	6.47 EDUs / Acre	0.41	0.82
Park/Recreational Land	6.47 EDUs / Acre	0.41	0.82
Public Services Facilities	1.94 EDUs / Acre	0.41	0.82

WATER SUPPLY SOURCE

The 1997 preferred water supply alternative consisted of a combination of groundwater and surface water supplies. Groundwater was to be supplied by on-site wells and surface water was to be delivered by the City of Sacramento through a pipeline along Florin Road. The source of the surface water was through the City of Sacramento's Fairbairn Water Treatment Plant. This water could only be used within the portion of the NVSSP area that is within the City's American River Place of Use (ARPOU).

The updated preferred water supply alternative will ultimately meet demands in the western portion of the NVSSP area (west of Bradshaw Road) with surface water, and the eastern portion with groundwater. All facilities will be sized to meet maximum Day Demand. Peak demands will be met by pumping from storage met by groundwater. Maximum-Day demands are estimated to be 2,220 gpm groundwater and 2,900 gpm surface water.

Reliance on local groundwater and existing conjunctive Zone 40 sources within the NVSSP is anticipated through the occupancy of 2,530 equivalent dwelling units (EDU's) towards the end of Phase B development. No more than a cumulative total of 2,530 EDU's in tentative subdivision map lots may be approved within the NVSSP area until either surface water supply consistent with the approved NVS Water Supply Master Plan has been secured, or the SCWA Board of Directors finds that an acceptable alternative supply has been secured.

The following infrastructure components are included in the revised preferred alternative:

- Water Treatment plant site area: 6.0 acres
- Number of Storage Tanks: 2[1]
- Volume of each storage tank : 2.0 mg (4.0 mg total)
- Booster pump capacity: 10,678 gpm peak hour
- Total number of wells: 3

GROUNDWATER COMPONENT

Based on an equivalent daily production of 1,500 gpm per well, three wells will be required to supply the demands in the portion of the NVSSP Area outside the City's ARPOU. Allowing for one well to be taken out of service, the remaining two wells will be designed to produce 2,220 gpm. A single treatment facility will be centrally located with three wells providing water to it. The treated groundwater will be discharged to storage reservoirs located on-site. A booster pump station will then deliver the stored water to the distribution system.

AVAILABLE WATER SUPPLY

Initial water supply may be supplied by an extension of the Elk Grove-Florin Road T-main from existing SCWA facilities. The boundary pressure conditions modeled for Phase A-1 at the proposed initial connection to existing Zone 40 infrastructure are 45 psi as prescribed by SCWA.

The availability of water from the existing system is based on an estimate provided by SCWA. This estimate is subject to change, reflecting ongoing development and increasing water demands outside the NVSSP area. SCWA will re-evaluate available capacity prior to approval of infrastructure improvement plans. Development within the NVSSP area beyond existing water supply will be dependent on timely completion of proposed on-site groundwater treatment plant and associated supply, storage, and pumping facilities.

As Phase A-1 will depend on the construction of a single feed transmission main extending off the existing Zone 40 transmission network, the construction of a fire well within the Phase A-1 development is necessary to supplement emergency water supplies. In accordance with applicable fire code and SCWA requirements, this fire well will need to be operational prior to the storage and/or construction of any combustible materials on-site. When the on-site groundwater treatment facility is completed, this fire well will be converted to a standard municipal production well and connected to the treatment facility.

[1] NVS minimum storage requirements = 1.73 mg. Second future storage tank of 2 mg capacity included as directed by WRD.

Groundwater will be an integral component of the buildout system serving the area. However, groundwater production is limited to 2,220 gpm (sufficient 2,530 EDU's). Surface water will need to be made available for development to exceed 2,530 EDU's.

Groundwater will be extracted from the deep aquifer and then delivered to a treatment facility for removal of iron and manganese. Treatment, storage, and pumping capacities are modeled in this study to accommodate each development phase in accordance with SCWA design standards.

The groundwater treatment facility is to be constructed near the intersections of the CCTC Railroad and Waterman Road, at the west edge of Phase A-1 development (submitted Tentative Map for Vineyard Point) prior to development of Phase A-2.

The 1998 EIR for the NVSSP identified a second groundwater treatment facility with associated wells to be constructed with Phase D, southwest of the intersection of Florin Road and the Vineyard Road extension. This water treatment plant, if needed, would be constructed by SCWA.

SURFACE WATER COMPONENT

The Draft 2002 Zone 40 Water Supply Master Plan dated December 2002 is intended to update previous Zone 40 water supply plans and incorporates terms and conditions for SCWA's water supply through the year 2030 from the recently adopted Water Forum Agreement. The Water Forum Agreement includes a provision for surface water to be obtained from the City of Sacramento for that portion of Zone 40 that lies within the City's ARPOU. This provision is for up to 9,300 acre-feet per year. The NVSSP portion of this supply is approximately 25%. Transmission and treatment of this water will most likely be through the Freeport Regional Water Project. This project consists of a diversion structure on the Sacramento River near the community of Freeport and a raw water conveyance pipeline to the central portion of Zone 40. An 85-MGD (ultimate capacity) surface water treatment facility and treated water conveyance pipeline will be constructed in phases by SCWA in the vicinity of Bradshaw and Florin Roads to supply surface water throughout Zone 40.

As an alternative, SCWA could negotiate the purchase of City of Sacramento ARPOU water and deliver it through the City's Fairbairn or Sacramento River water treatment plants. This system involves purchasing treatment capacity and constructing conveyance facilities from the current City delivery point near Florin Road and Power Inn Road to the location to the location where the surface water would be introduced into the SCWA system. To deliver this water, a transmission main would need to be constructed in Florin Road, from Power Inn Road to Waterman Road. Booster pump capacity as well as additional storage would also be required.

Surface water supply facilities to meet the Specific Plan Area demands within the City's ARPOU will need to ultimately provide 2,900 gpm.

WATER TREATMENT AND STORAGE

GROUND WATER TREATMENT PLANT

Ground water treatment plants within Zone 40 are comprised of water processing facilities combined with both storage and pumping capabilities. Strategic placement of water treatment plants throughout the zone is intended to provide reliable operational pressure and flow in the system. Water is received via raw water pipelines linked to well sites in relatively close proximity to each plant. Construction of facilities within the North Vineyard Station water treatment plant, including storage tanks, pumps, processing systems, etc., may be phased in accordance with the following development-demand thresholds:

Table 12-2
Development/Demand Thresholds

Phase	Cumulative EDUs	Minimum Treatment Capacity (mgd)	Peak-Hour Distribution Capacity (gpm)	Operational Pressure (psi)
A-1	***	N/A	N/A	45*
A-2	1,666	0.98	2,924	50 – 55
B**	2,834	1.67	4,973	50 – 55
C**	4,268	2.52	7,490	50 – 55
D**	5,289	3.12	9,281	50 – 55
E**	6,085	3.59	10,678	50 – 55

* Assumed initial connection to main at Elk Grove-Florin Road T-main.
** Combination of ground and surface water sources.
*** To be determined prior to approval of infrastructure improvement plans.

Construction of groundwater treatment facilities and well sites is an integral part of development within Zone 40. The acquisition of real property in additional to planning and construction of facilities may require substantial time for completion. Real property shall be reserved per the guidelines contained in Chapter 22.50 of the Sacramento County Code and Government Title 7, Division 2, Article 4 (1/03). A site for the proposed NVS groundwater treatment plant, storage tanks, booster pump and other appurtenances has been designated on the Vineyard Point Tentative Subdivision Map on file with the County Planning Department. Phase A-1 development consists entirely of the Vineyard Point Subdivision.

To allow for proper environmental impact evaluation of the proposed water treatment plant and its operation by the County, the NVSSP proponents have had their consultant prepare a "Narrative Description with Preliminary Operation and Construction Mitigation Measures."

GROUNDWATER WELL PLACEMENT CRITERIA

Approximately 85% of water for domestic distribution in the County of Sacramento Zone 40 is supplied by groundwater sources within the district. Well sites are to be situated evenly throughout the district within development projects, as they occur, in accordance with the requirements of SCWA and the Department of Health Services (DHS). Minimum well site setbacks per DHS are as follows:

A. 50 foot separation – Primary drinking water source protection, no sanitary, industrial, storm water main, or leader lines and no house foundations without approved special provisions.

B. 100 foot separation – Secondary drinking water source protection; no sanitary sewer or storm gravity mains, septic tanks, or leach lines without approved special provisions.

C. 200 foot separation – from sanitary or storm sewer force main and/or approved special provisions.

Wells are typically designed with pumping capacities of 1,500 gpm and are considered to operate 18 hours per day. This provides an effective flow of 1,000 gpm over a 24-hour period. Based on these operational parameters, a minimum of three wells will be required to meet groundwater demands. Additional well sites may be required, if deemed necessary by SCWA, to insure long-term system reliability. Well sites and raw water mains are not included in the water distribution modeling. Well capacities and production, per phase, are proposed as follows:

Table 12-3
Well Sites

Phase	Wells Added	Cumulative Wells	Cumulative Well Production Capacity (gpm)	Daily Pumping Capability (mgd)	Average Daily Demand (mgd)
A-1	1*	1	1,500	1.44	0.56
A-2	2	3	3,000**	4.32	1.13

* Fire well upgraded to supply well in Phase A-2

** Two well sites providing 1,500 gpm continuous production with remaining well site for reduncancy to produce an ultimate 3,000 gpm

STORAGE TANK SIZING

Storage tank sizes are calculated as the aggregate total of 4 hours of peak-hour demand minus max-day demand, three hours of fire flow at 3,000 gpm, plus an emergency storage volume equal to 1/3 of the average day demand. Peak-hour demand for sizing storage facilities is the max-day demand multiplied by a peaking factor of 1.8.

Table 12-4
Minimum Storage Volume

Phase	Max-Day Demand (gpm)	Peak-Hour Demand for Storage** (gpm)	1	2		Minimum Storage Volume (mg)
			PHD – MDD x 4 hours (mg)	3,000 gpm FF x 3 hours	1/3 ADD x 3 hours	
A-1*	***	965	0.102	0.540	0.016	0.658
A-2	1,462	2,632	0.281	0.540	0.044	0.865
B	2,487	4,477	0.478	0.540	0.075	1.09
C	3,744	6,739	0.719	0.540	0.112	1.37
D	4,640	8,352	0.891	0.540	0.139	1.57
E	5,339	9,610	1.025	0.540	0.160	1.73

* Assumes initial connection to main at Elk Grove-Florin Road T-main.
** Peak-hour demand for storage is 1.8 times max-day demand.
*** To be determined prior to approval of infrastructure improvement plans.

As identified in the current WMP update (July 9, 2003) the North Vineyard Station requires a minimum storage of 1.73 million gallons. This is an update of the 1997 study that identified a needed volume of 2.3 MG. This reduced volume is based on updated modeling conditions (supply and distribution). The 4 million gallons of storage identified in the current study includes a second future 2 MG storage tank that was included as directed by WRD.

WATER DISTRIBUTION

RAW WATER MAINS

Raw water mains currently being installed in Zone 40 are generally 12 – 18 inches in diameter PVC pipe similar to potable water mains. Raw water mains, per phase, are proposed as follows:

Table 12-5
Raw Water Mains

Phase	Size (in.)	Material	Quantity
A-1	N/A	N/A	N/A
A-2	12	PVC	3,700
B	12	**PVC**	0
C	12	**PVC**	0
D	12	**PVC**	0
E	12	**PVC**	0
Totals			**3,700**

TRANSMISSION MAINS

Transmission mains (T-mains) will be installed incrementally as development progresses within the NVSSP. Transmission main sizes were determined by Zone-40 based on regional system modeling. Approximate T-main pipe lengths and size for each proposed development phase are quantified as follows:

Table 12-6
Transmission Mains

Phase	Quantity (LF)					
	12”	**16”**	**18”**	**24”**	**36”**	**48”**
A-1			2,764	7,986		
A-2			5,391	7,737		
B		657	1,981			
C		7,969	3,344	1,363		
D		4,037				
E	N/A	N/A	N/A	N/A	N/A	N/A
Totals	**N/A**	**12,663**	**13,480**	**17,086**	**N/A**	**N/A**

MAX-DAY DEMAND ANALYSIS

MAX-DAY ASSUMPTIONS/CRITERIA

Max-Day demand for the North Vineyard Specific Plan is based on the anticipated land use and respective average annual demands per EDU both outside and within the ARPOU. ~~The Max-Day values are obtained by multiplying the Average Daily demand by a factor of 2 per Sacramento County Improvement Standards Manual. Max-Day demands are individually entered at respective demand nodes in the WaterCAD® model.~~

~~The Hazen-Williams formula is used in the hydraulic study of the system, using a C-value of 125 for PVC pipe as required by the Sacramento County Improvement Standards Manual. This C-Value is generally considered conservative as it is intended to take into account various minor losses in the system.~~

Table WS-7
Summary of Results for Max-Day Demand

Phase	**Max-Day Demand* (gpm)**
A-1	536.10
A-2	1,461.87
B	2,486.55
C	3,744.90
D	4,640.61
E	5,338.99

CONCLUSIONS

The prior EIR concluded that implementation of the North Vineyard Station Specific Plan Water Master Plan would result in less than significant water supply impacts. However, the implementation of the NVSSP Water Master Plan was contingent on the implementation of the Water Master Plan for Areas Adjacent to the Zone 40 Water Supply Master Plan Update's Study Area, as well as fulfillment of the City of Sacramento American River Place of Use. Until all agreements are in place to wheel "firm" surface water supplies to the Specific Plan area, the project will contribute to the incremental decline in ground water levels. This incremental decline and the dewatering of private wells is a regional issue, beyond the scope of the proposed project. However,

the project would add to the significant adverse cumulative impacts that regional development has on ground water supplies. Compliance with the requirements of the SCWA and the Water Forum Agreement will ensure that impacts are less than significant.

REQUIREMENTS OF THE SACRAMENTO COUNTY WATER AGENCY:

The SCWA requires the following conditions of approval be placed on all tentative maps and vesting tentative maps within the North Vineyard Station Specific Plan Area:

1. That Simple Title ownership or sale agreements for the WTP lands are completed prior to any Tentative Map approvals within the North Vineyard Station Specific Plan area. WTP lands shall be reserved per the guidelines contained in Chapter 22.50 of the Sacramento County Code and Government Title 7, Division 2, Article 4.(1/03).

2. That well sites be identified prior to Tentative map approvals for subdivisions within the North Vineyard Station Specific Plan area and reserved per the guidelines contained in Chapter 22.50 of the Sacramento County Code and Government Title 7, Division 2, Article 4.(1/03).

3. That well sites be reserved on the Final Subdivision Maps of subdivisions within the North Vineyard Station Specific Plan area.

4. That no more than a cumulative total of 2,530 equivalent dwelling units (EDUs) in Tentative Subdivision Map lots may be approved within the North Vineyard Station Specific Plan area until either surface water supply consistent with the approved NVS Water Supply Master Plan has been secured, or the SCWA Board of Directors finds that an acceptable alternative supply consistent with the Zone 40 Water Supply Master Plan has been secured.

Comments were also provided in regards to the Vineyard Creek Tentative Subdivision Map:

1. Destroy all abandoned wells on the proposed project site in accordance with the requirements of the Sacramento County Environmental Health Division. Clearly show all abandoned/destroyed wells on the improvement plans for the project. Prior to abandoning any existing agricultural wells, applicant shall use water from agricultural wells for grading and construction.

2. Prior to tentative subdivision map approval, prepare a Water Supply Master Plan, to the satisfaction of the Sacramento County Water Agency.

3. Prior to tentative subdivision map approval, the Sacramento County Water Agency requires either fee simple title or sale agreements or reservation agreements for a water treatment plant site as identified in the most current approved North Vineyard Station Specific Plan Water Supply Master Plan. In

addition, prior to final map recordation, the affected property owner, future successors or interests shall enter into an agreement with SCWA consistent with Chapter 22.50 of the Sacramento County Code and Government Code Title 7, Division 2, Article 4.

4. The Sacramento County Water Agency (SCWA) will not issue water connection permits or sign improvement plans until adequate water supplies have been secured. In addition, the final map shall not be recorded until the SCWA has secured fee simple title to the North Vineyard Station WTP.

5. Prior to the issuance of any building permits for the project, the project developer/owner shall pay Zone 40 development fees applicable at the time of building permit issuance in accordance with Sacramento County Water Agency Ordinance No. 18.

6. Prior to the issuance of any building permits for the project, the project shall conform to the specific provisions of the Sacramento County Landscape Water Conservation Ordinance (Chapter 14.10 of the Sacramento County Code) to the satisfaction of the County Landscape/Oak Tree Coordinator.

MITIGATION MEASURES:

None required.

13 SEWER SERVICE

INTRODUCTION

McKay and Somps prepared a Revised Sewer Study (July 1, 2002) in conjunction with the Water Quality Division of the Sacramento County Department of Public Works. It is a part of the Phased CIP Financing Plan for the North Vineyard Station Specific Plan (NVSSP).

The sewer study provides background information and refines the master plan for sanitary sewer facilities, providing greater detail along with updated land use and flow data. The study has been revised to facilitate development of the sanitary sewer portion of the Capital Improvement Program for the Specific Plan and provide updated construction cost estimates. Land development in the contributing shed areas will dictate how construction of the trunk system will be phased. Market and economic forces dictate the development phasing.

EXISTING CONDITIONS

Currently, there are no public sewer facilities within the North Vineyard Station Specific Plan area. Existing development within the project site is served by private septic systems. Public sewer service will be required to serve the proposed urban land uses. The NVSSP area lies within the Spheres of Influence of the Sacramento Regional County Sanitation District (SRCSD) and County Sanitation District No. 1 (CSD-1), which provide public sewer service within Sacramento County. CSD-1 provides local sewage collection and transport from its facilities to the regional sewage transmission, treatment and disposal facilities operated by SRCSD. Treated effluent from the Sacramento urban area is ultimately discharged to the Sacramento River at SRCSD's Regional Wastewater Treatment Plant, located approximately six miles southwest of the Specific Plan area near Freeport. SRCSD and CSD-1 are administered by the Water Quality Division of the Sacramento County Public Works Agency, which provides engineering and planning services to these sewer districts and operates and maintains district facilities. In order to receive public sewer service, the NVSSP area must be annexed to SRCSD and CSD-1.

CSD-1 and SRCSD classify sewer pipelines carrying 10 million gallons per day (mgd) or more as "interceptors". Sewer pipes carrying between 1 mgd and 10 mgd are known as "trunks". Sewer pipes carrying less than 1 mgd are referred to as "laterals". The cost of interceptor and trunk facilities are reimbursable or creditable against sewer fees.

There is an existing 108-inch sewer interceptor located in Elk Grove-Florin Road, approximately ½ mile west of the Specific Plan area. However, this interceptor is

nearing capacity. A countywide Sewer System Master Plan, entitled the "Sewerage Facilities Expansion Master Plan" (the SFEMP) is currently being considered for adoption by CSD-1 and SRCSD. The Final Draft was accepted by the Board of Supervisors in November of 2001 and is currently in the final stages of environmental review. The SFEMP uses updated land use information and projections, as well as updated design criteria to analyze capacities of existing facilities and to identify necessary expansions to the sewerage system throughout the Sacramento County Urban Services Area. The flow estimation criteria developed in the SFEMP are used throughout the NVSSP sewer study.

The SRCSD Interceptor System Master Plan calls for a new 108-inch pipeline (Bradshaw/Folsom Interceptor 6A) to be constructed generally along Elder Creek through the Plan Area. This interceptor is needed to relieve the Elk Grove-Florin Interceptor described above. It is also planned to serve future growth in the northeast portion of Sacramento County's Urban Service Area, including the City of Folsom.

Construction of the new Bradshaw 6A Interceptor is expected to extend through the western portion of the Specific Plan in 2004/2005 and will serve the entire Specific Plan area as well as surrounding lands. The Sewer System Shed Map (Plate SE -1) defines all sub-areas contributing flow to the trunk system serving the NVSSP.

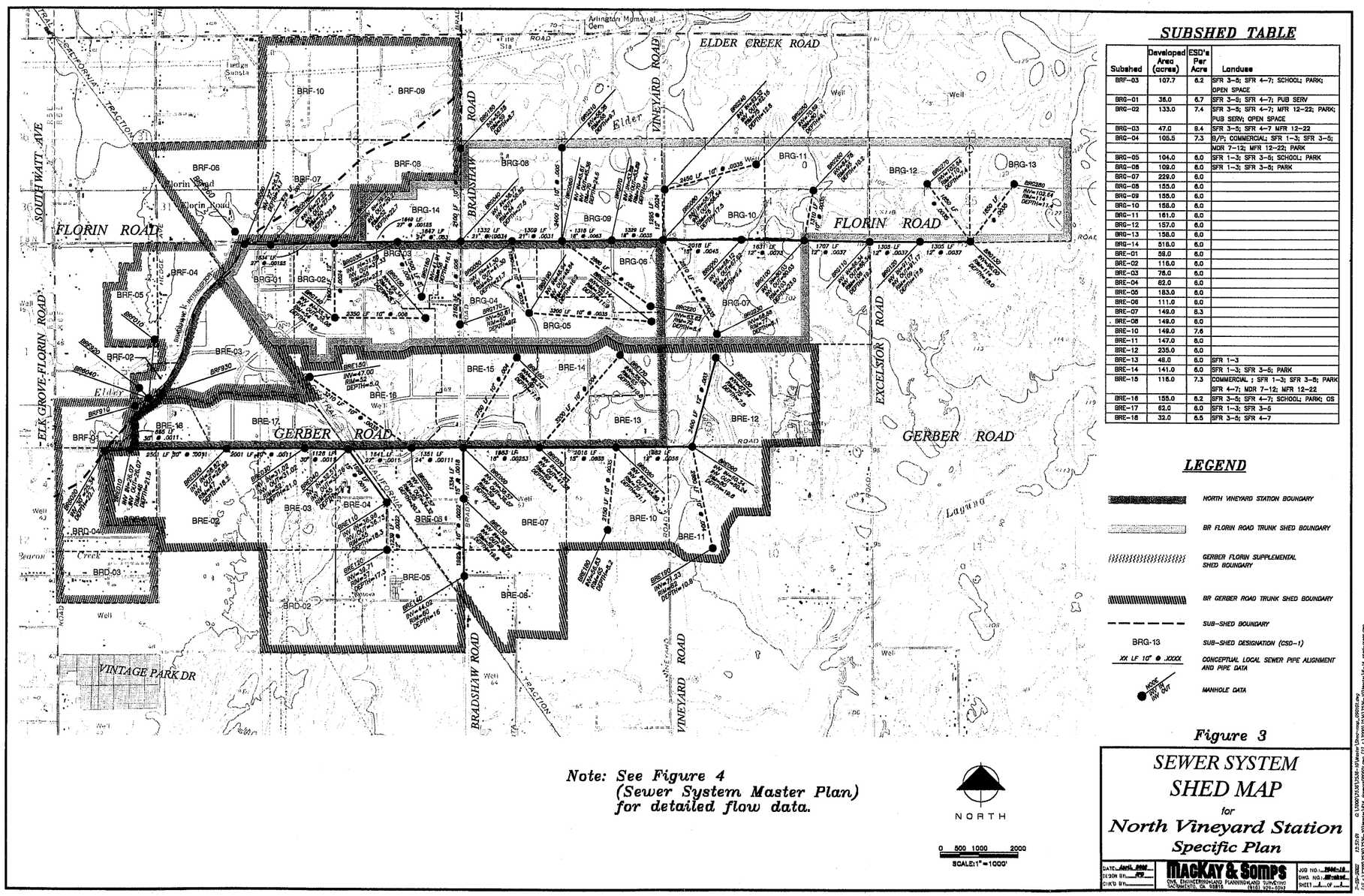
Gravity trunk systems (BR Gerber Road and BR Florin Road) will convey sewage to the new interceptor and have been identified in the Sewer System Shed Map and Master Plan (Plate SE -1 and Plate SE -2). The Sewer System Shed Map also identifies schematic extensions of laterals to the limits of individual sub-areas. The laterals have been included to verify the ability to serve future development by gravity.

PROPOSED SEWER SYSTEM

INTERIM SERVICE

Current development phasing projections predict Phase 1A-1 to begin construction prior to completion of the Bradshaw/Folsom Interceptor extension that will ultimately serve the Specific Plan area. In order to provide interim service to residences built, a sewer line will need to be designed and constructed from the downstream end of the Gerber Road trunk sewer to the existing Central Interceptor located in Elk Grove-Florin Road. All design and construction costs for the interim facilities are to be borne by the developer(s) and are to be considered non-reimbursable.

Plate SE -1
Sewer System Shed Map



SUBSHED TABLE

Subshed	Developed Area (acres)	ESD's Per Acre	Landuse
BRF-03	107.7	6.2	SFR 3–5; SFR 4–7; SCHOOL; PARK; OPEN SPACE
BRF-01	35.0	6.7	SFR 3–5; SFR 4–7; PUB SERV
BRG-02	133.0	7.4	SFR 3–5; SFR 4–7; MFR 12–22; PARK; PUB SERV; OPEN SPACE
BRG-03	47.0	9.4	SFR 3–5; SFR 4–7 MFR 12–22
BRG-04	105.5	7.3	B/P; COMMERCIAL; SFR 1–3; SFR 3–5; MDR 7–12; MFR 12–22; PARK
BRG-05	104.0	6.0	SFR 1–3; SFR 3–5; SCHOOL; PARK
BRG-06	109.0	6.0	SFR 1–3; SFR 3–5; PARK
BRG-07	229.0	6.0	
BRG-08	155.0	6.0	
BRG-09	155.0	6.0	
BRG-10	158.0	6.0	
BRG-11	161.0	6.0	
BRG-12	157.0	6.0	
BRG-13	158.0	6.0	
BRG-14	516.0	6.0	
BRE-01	58.0	6.0	
BRE-02	116.0	6.0	
BRE-03	78.0	6.0	
BRE-04	82.0	6.0	
BRE-05	183.0	6.0	
BRE-06	111.0	6.0	
BRE-07	149.0	8.3	
BRE-08	149.0	6.0	
BRE-10	149.0	7.6	
BRE-11	147.0	6.0	
BRE-12	235.0	6.0	
BRE-13	48.0	6.0	SFR 1–3
BRE-14	141.0	6.0	SFR 1–3; SFR 3–5; PARK
BRE-15	116.0	7.3	COMMERCIAL ; SFR 1–3; SFR 3–5; PARK SFR 4–7; MDR 7–12; MFR 12–22
BRE-16	155.0	6.2	SFR 3–5; SFR 4–7; SCHOOL; PARK; OS
BRE-17	62.0	6.0	SFR 1–3; SFR 3–5
BRE-18	32.0	6.5	SFR 3–5; SFR 4–7

LEGEND

- NORTH VINEYARD STATION BOUNDARY
- BR FLORIN ROAD TRUNK SHED BOUNDARY
- GERBER FLORIN SUPPLEMENTAL SHED BOUNDARY
- BR GERBER ROAD TRUNK SHED BOUNDARY
- SUB–SHED BOUNDARY
- BRG-13 — SUB–SHED DESIGNATION (CSD–1)
- XX LF 10" @ .XXXX — CONCEPTUAL LOCAL SEWER PIPE ALIGNMENT AND PIPE DATA
- XXXX INV IN INV OUT — MANHOLE DATA

Figure 3

Note: See Figure 4 (Sewer System Master Plan) for detailed flow data.

SEWER SYSTEM
SHED MAP
for
North Vineyard Station
Specific Plan

DATE: April 2002
DESIGN BY: RPP
CHK'D BY:

MACKAY & SOMPS
CIVIL ENGINEERING/LAND PLANNING/LAND SURVEYING
SACRAMENTO, CA 95815 (916) 924-5092

JOB NO.: 2944-18
DWG. NO.: RP-sewer
SHEET 1 OF 1

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Plate SE -2
Sewer System Master Plan

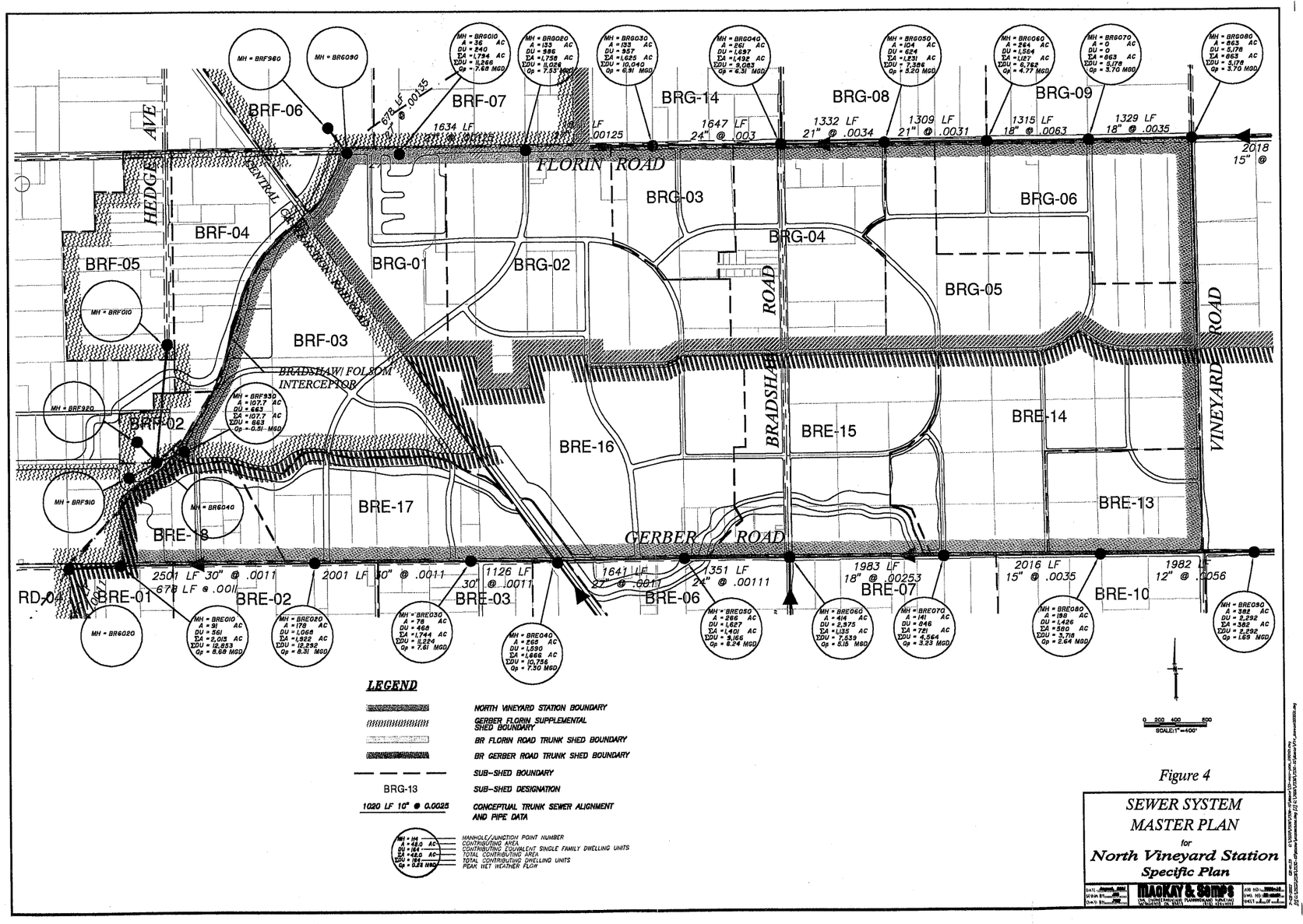


Figure 4

SEWER SYSTEM MASTER PLAN
for
North Vineyard Station Specific Plan

SERVICE AREA LIMITS

The area to be served by the sewer facilities analyzed in the NVSSP Sewer Study extends to areas surrounding the NVSSP. The study area has been divided into three major service sheds: (1) BR Gerber Road Shed, (2) BR Florin Road Shed, and (3) Gerber-Florin Supplemental Shed which are shown on Plate SE -1 and Plate SE -2. Shed designations 1 and 2 correspond to those used by CSD-1. The areas labeled shed 3 do no contribute flow to either the Gerber Road or Florin Road trunks and was separated and renamed for clarity. The overall boundary of the three major sheds corresponds to the area originally established by the Water Quality Division formerly for sheds 1 and 2 and is based on the previous SSES, analysis of topography, and the ability to sewer by gravity.

The direction to accommodate off-site is consistent with the County's General Plan Policy PF-9, which states:

> *"Design trunk and interceptor systems to accommodate flows generated by full urban development at urban densities within the ultimate service area. This could include phased construction where deferred capital costs are appropriate."*

The NVSSP and lands to the south are within the County's Urban Policy boundary, which defines the expected areas of urbanization during the planned twenty-year buildout of the General Plan. Areas to the north and east of the Specific Plan are not within the Urban Policy boundary. However, the General Plan acknowledges that development in Sacramento County will ultimately extend beyond its Urban Policy boundary. This acknowledgment is made in part through inclusion of an Urban Services boundary. This line establishes the area for which infrastructure improvements are to be sized. The Urban Services boundary in this portion of Sacramento County is along the west side of the Deer Creek/Cosumnes River floodplain, roughly six miles east of the NVSSP. Therefore, oversizing to accommodate future development of the service area is consistent with the General Plan.

ANALYSIS PROCEDURES

The development of the revised Sewer Master Plan is a refinement of the original Sewer Master Plan developed for the NVSSP Environmental Impact Report. Preparation for the updated Plan included the following steps

1. Shed maps and technical data from the SESS for the BR Gerber Road and BR Florin Road sheds were obtained from the Water Quality Division of the Sacramento County Department of Public Works, and the requirements for this study were discussed with staff.

2. The SESS data was reviewed and compared with the original sewer report.

3. The schematic backbone collection system was refined using the updated data.

4. Sub-sheds were compared to the updated data, then the areas and laterals refined as required.

5. To estimate sewage flows, land use boundaries were overlaid on the sub-sheds creating sub-areas of single land use within each sub-shed. The acreages of these sub-areas were determined and multiplied by the average number of Equivalent Single-Family Dwellings (ESD's) per acre for their particular land use in order to determine the total number of ESD's entering each pipe system. The criteria and methodology used to estimate flows are described in more detail in the Design Criteria sub-section below.

6. Pipes were sized and inverts calculated using an iterative process. The starting invert elevations of the trunks in Gerber and Florin Roads were set to match the crown elevations of the Bradshaw/Folsom Interceptor. Other lateral pipelines were typically designed to be approximately ten feet deep at the upstream end. At the time this report was prepared, information was not available about the layouts of subdivisions internal to the NVSSP. Therefore, the depth of ten feet at the upstream end was chosen conservatively to allow for the potential of longer routes to the extremities of the system.

ESTIMATION OF SEWAGE GENERATION

The methodology used to estimate sewage flows in trunk and interceptor systems is defined in the Sacramento Sewerage Expansion Study (SSES), and design criteria follow standard Sacramento County guidelines:

- ESD is defined as the flow equivalent for the average wastewater contribution from a single-family dwelling (1 ESD). A multi-family dwelling unit is assumed equivalent to 0.75 ESD. See Table 14-1 for EDS values.

- DWF is Dry Weather Flow; and

- PDWF is Peak Dry Weather Flow; and

- FWWF is Peak Wet Weather Flow; and

- I&I are Infiltration and Inflow.

Table 14-2 shows the Design Flow Criteria and Peaking Factor formula taken from the SSES methodology and used in the flow calculations.

PDWF has been computed based on 310 gpd per ESD entering each trunk pipe system. ESD values used in this analysis are as follows:

Table 13-1
ESD Values

Land Use	ESD Value
Business/Professional	6 Per Acre
Commercial	6 Per Acre
Single-Family Residential	1 Per Dwelling Unit (Minimum 6 Per Acre)
Medium Density Residential 7 – 12	10 Per Acre
Multi-Family Residential 12 - 22	0.75 Per Dwelling Unit (16.5 Per Acre)
School	6 Per Acre
Parks	6 Per Acre
Public Service	6 Per Acre
Open Space/Non-Constrained Areas (including golf courses)	6 Per Acre
Open Space/Constrained Areas (Detention, drainage channels, and powerline corridor)	0
Off-Site/Non-Constrained Areas	Per SESS (Minimum 6 Per Acre)

Table 13-2
Design Criteria

Item	Value
ESD Flow Factor	310 gpd/ESD
Dry Weather Peaking Factor	Curve[a]
I/I (Rainfall-Dependent ~ 10 year storm)	1,000 gpd/acre
Groundwater Infiltration	200 gpd/acre

[a] For average flow greater than or equal to 0.1 mgd, the peaking factor is expressed by the following equation which defines the peaking factor curve:

$$PF = 3.5 – 1.8Q^{0.05}$$

Where

PF = dry weather peaking factor (minum = 1.2)
Q = average flow (mgd)

At the direction of the Water Quality Division, the analysis assumes that areas within the Specific Plan which are planned for less than five dwelling units to the acre may eventually be rezoned to a higher density (six dwelling units per acre on the average). This assumption is consistent with standard Sacramento County sewer infrastructure planning procedures.

PIPE SLOPES

Schematic alignment slopes were generally used within the Specific Plan Area as collector roadway systems are still subject to change at this time. Schematic alignment slopes were typically used outside the boundaries of the Specific Plan, as accurate planning data is not available for these areas. The purpose of using steeper pipe grades in this study for "unplanned" areas is to allow for the potential that pipe lengths may turn out to be longer than anticipated at this time.

Table 13-3
Minimum Pipe Slopes

Pipe Diameter (in.)	Fixed	Schematic	Pipe Diameter (in.)	Fixed	Schematic
8	0.0035	0.00600	21	0.00110	N/A
10	0.0025	0.00350	24	0.00100	N/A
12	0.0020	0.00240	27	0.00100	N/A
15	0.0015	0.00180	30	0.00100	N/A
18	0.0012	0.00140	33+	0.00100	N/A

SYSTEM LAYOUT

The pipelines in Gerber Road and Florin Road are estimated to carry in excess of 1 million gallons per day (mgd) each, and therefore are classified as "trunk" facilities subject to CSD-1 policies for reimbursement of construction costs. Portions of other parts of the system may also reach trunk classification.

IMPACTS AND ANALYSIS

Impact:

The revised sewer study does not include the proposed water treatment facility, which has the potential to contribute a significant amount of effluent into the sewer system. In addition, the proposed increased development densities anticipated from the density bonus program will also result in incremental increases in effluent generation from the

Plan area. The County Sanitation District-1 (CSD-1) staff has indicated the increased flows will necessitate revised sewer studies and the planned sizing of the Gerber Road Trunk would have to be increased. Since the Gerber Road Trunk sewer line has yet to be constructed, these necessary adjustments can be made and the impact of the increased flows is expected to be less than significant. The Gerber Trunk will tie into the Bradshaw 6A and 6B Interceptors, and the Central Interceptor further downstream, where there will be adequate capacity in to handle the increased flows from the water treatment facility and expected small to moderate increases in dwelling units through the density bonus program.

CSD-1 indicated that the revised sewer study need not be included in this Draft EIR, but would be required prior to installation of the Gerber Road Trunk (pers. comm., Matt Morgan, CSD-1, June 15, 2004). Because potential impacts from the water treatment facility on the Gerber Road Trunk will be evaluated prior to installation of the trunk line and sized appropriately, lack of sewer capacity should not be an impediment to future development. Therefore impacts associated with sewer service are considered less-than-significant.

RECOMMENDATIONS/REQUIREMENTS OF CSD-1:

Provide a revised sewer study, to the satisfaction of the County Sanitation District-1 staff, to address the increased sizing needs for the Gerber Road Trunk Sewer in order to adequately accommodate anticipated effluent flows from the proposed water treatment facility and potential increases in dwelling units through the density bonus program.

VINEYARD CREEK

1. Connection to the public sewer system shall be required to the satisfaction of CSD-1. Sacramento County Improvement Standards apply to any on and off-site sewer construction.

2. CSD-1 shall require an approved sewer study prior to the submittal of improvement plans for plan check to CSD-1. Portions of the subject project shall flow into the BR Florin Road Trunk Shed and other portions shall flow into the BR Gerber Road Trunk Shed in accordance with the Sanitary Sewer Study for the North Vineyard Station Specific Plan and the Sewage Facilities Expansion Master Plan.

3. Each lot shall have a separate connection to the public sewer system.

4. In order to obtain sewer service, construction of on and off-site public sewer will be required to the satisfaction of CSD-1.

5. Construction of off-site public trunk sewer will be required in conformance with approved sewer studies and to the satisfaction of CSD-1. In accordance with the

Connection Fee Ordinance, it will be necessary to schedule a meeting to discuss reimbursement requirements with appropriate CSD-1 staff prior to any trunk design.

6. Design of all public sewers shall be coordinated with and approved by CSD-1. Sewer easements may be required. All sewer easements shall be dedicated to CSD-1, in a form approved by the District Engineer. All sewer easements shall be 20 feet in width and ensure continuous access for maintenance.

7. The trunk and collector sewer system for the project will not be accepted for maintenance and building occupancy will not be granted until the downstream sewer system serving the project is also accepted for maintenance.

8. Prior to the recordation of the Final Map the applicant will enter into and record an agreement, in a form approved by the District Engineer and District Counsel of Sacramento Regional County Sanitation District (SRCSD), to require the property owner(s) to reserve lands for acquisition by the District to install District pipelines and facilities for public health purposes and in conformance with the District Master plan. The District shall exercise the agreement and acquire the reserved lands within two years of the completion and acceptance of required public improvements. The area of land will be 75 feet wide, or as determined by SRCSD. The applicant shall coordinate the area required with SRCSD and clearly show the area by meets and bounds on the Final Maps.

9. A Temporary Construction Easement (TCE) will be required along both sides of the future interceptor. The required TCE shall be 42.5 feet wide on each side of the permanent 75-foot wide interceptor easement. The Final Maps shall clearly show the TCE.

10. Construction of any and all improvements, including but not limited to grading, streets, utilities, houses and other structures, within the TCE shall be prohibited until such time the TCE is released by SRCSD unless approved by the District Engineer.

MITIGATION MEASURES:

None required.

14 DRAINAGE AND HYDROLOGY

BACKGROUND

As part of the NVSSP planning process, MacKay & Somps Civil Engineers, Inc. (MacKay & Somps), prepared a Drainage Master Plan (DMP), dated January 30, 1998. A preferred Drainage Plan was identified in the NVSSP DMP. A Capital Improvement Program (CIP) and Financing Strategy were also developed as part of the NVSSP. The CIP and Financing Strategy identified cost estimates for the infrastructure and potential funding sources to serve the NVSSP area. Costs associated with drainage were based upon the Preferred Drainage Plan formulated by MacKay & Somps.

The Sacramento County Department of Water Resources (SCDWR) provided guidance on the scope for an NVSSP Drainage Phasing Study. Subsequently, Borcalli & Associates, Inc. (B&A), on behalf of Lennar Communities, Inc., and U.S. Home Corporation, evaluated drainage facilities required to accommodate development of Phase 1A of the NVSSP consistent with the original objectives of the DMP and the SCDWR's criteria. The results of B&A's evaluation are presented in a report entitled, "Technical Memorandum No. 1, North Vineyard Specific Plan, Drainage Phasing Study." dated April 19, 2000. From the results of B&A's evaluation, it was determined by Lennar Communities and U.S. Home Corporation, in consultation with the SCDWR, that constructing features of the Preferred Drainage Plan to accommodate development of Phase 1A, was not financially feasible.

In the interest of developing a financially feasible plan for phasing development within the NVSSP area, B&A, on behalf of Lennar Communities and U.S. Home Corporation, evaluated phasing alternatives. The results of B&A's work are presented in the report entitled, "North Vineyard Station Specific Plan, Drainage Master Plan, Phasing Concept," dated April 10, 2001. The phasing concept developed by B&A, which included pumping from newly constructed detention basins into unimproved channels on an interim basis, appeared to offer a feasible means of phasing development that would be financially feasible and provide the level of flood protection and mitigation of impacts consistent with Sacramento County's objectives, policies, and standards. The phasing concept outlined in the above-referenced report, would allow deferring the construction of improved drainage channels until sufficient development occurred to generate revenues required to fund the drainage facilities. Since interim pumping of storm drainage was not a component of the Preferred Drainage Plan for the NVSSP area, the concept of interim pumping of storm drainage to phase development was presented to the Sacramento County Board of Supervisors for consideration.

In July 2001, the Board of Supervisors advised SCDWR that interim pumping could be considered in phasing development within the NVSSP area, however, more detailed information was needed before a decision could be made to acceopt the proposed concept.

Although not a part of the original NVSSP DMP document, the policy prohibiting storm drainage pumping within the NVSSP area was introduced by the Sacramento County Board of Supervisors upon adoption of the NVSSP. It was for this provision that B&A prepared the Phasing Concept Report. Upon review of the concept by the SCDWR, and expressed willingness of the Sacramento County Board of Supervisors to consider pumping of storm drainage on an interim basis, B&A was requested to update the DMP and developing drainage plan to support phasing development within the NVSSP area. Accordingly, the purpose of this update is to develop the information necessary for the Board of Supervisors to make a decision on phasing the construction of storm drainage facilities to accommodate development within the NVSSP area. In developing a phasing plan for storm drainage facilities, it was essential to complete construction of the Preferred Drainage Plan facilities as early as possible.

SYNOPSIS OF THE NVSSP DMP

PLAN FORMULATION GUIDELINES

Various policies, standards, and criteria were used as guidelines in formulating the NVSSP DMP. These are as follows:

SACRAMENTO COUNTY POLICIES AND STANDARDS

The Conservation Element of the Sacramento County General Plan presents policies aimed at preserving and protecting the values of natural streams. The policies apply to specific urban stream corridors designated in the General Plan, which include Elder Creek.

Sacramento County's floodplain policies and improvement standards and specifications require that development will not adversely impact flooding and drainage conditions on other properties and must meet the stated master planning objectives of the County's Drainage Master Plan Program and General Plan

SACRAMENTO COUNTY DRAINAGE MASTER PLAN PROGRAM

The Sacramento County Drainage Master Plan Program addresses the long-term drainage and flood control needs of the County, The intent of drainage master planning is to implement cost-effective drainage and flood control systems which:

- Accommodate development
- Provide the objective levels of drainage service and flood control
- Minimize continuing maintenance and operation costs
- Minimize and mitigate flooding, habitat loss, and water quality impacts.

NVSSP DMP

The NVSSP Preferred Drainage Plan meets the objectives, policies, and standards stated below. In no case shall adverse flooding and drainage impacts occur on other properties or the property being developed.

PURPOSE

The stated purpose of the NVSSP DMP is to:

- Identify existing drainage facilities and predicted flooding patterns.
- Analyze alternatives and recommend preferred flood control and conveyance facilities and to mitigate for potential impacts due to development
- Recommend storm water quality management facilities consistent with Sacramento County's Development Management Program.

OBJECTIVES

The stated objectives of the NVSSP DMP are to:

- Provide 10-year gravity drainage service to developing area within the NVSSP area.
- Provide 100-year flood protection to the NVSSP area consistent with Sacramento County's Standards.
- Provide a plan which meets the hydrologic and hydraulic criteria of:
    - No increase in the peak 100-year flow at the City and County limit line downstream of the NVSSP area.
    - No significant out of bank 100-year flows in the existing improved channel downstream of the NVSSP area.
- Provide storm water quality management facilities in accordance with the County's Development Management Program.

HYDROLOGIC AND HYDRAULIC ANALYSES

SCDWR requested an evaluation of the need for Basin E20. B&A's analysis of Basin E20 concluded that Basin E20 was not needed to mitigate downstream impacts from development of the NVSSP area. Basin E20, therefore, is not included in the models developed by B&A for updating the Drainage Master Plan and developing a plan for phasing the drainage facilities.

HYDROLOGIC AND HYDRAULIC CRITERIA

The basis for B&A's modeling and analyses is the result of the hydrologic and hydraulic analyses performed by Mr. Doug Hamilton for Sacramento County, cited in the Background section, and as refined by MacKay & Somps Civil Engineers, Inc., in formulating the Preferred Drainage Plan.

B&A's analyses are consistent with hydrologic criteria established in the report entitled, "Volume 2: Hydrology Standards," of the "Drainage Manual," prepared by Sacramento City/County, dated December 1996. The analysis of all hydraulic structures is based upon the Sacramento County Improvement standards, 1999, as modified by Board Resolution 2001-0265 (March 13, 2001), which provides that storm drains be designed based upon a 10-year hydraulic grade line (HGL) in downstream receiving waters.

SUPPORTING DOCUMENTATION

As development progresses through the NVSSP area, Letters of Map Revision (LOMRs) will be submitted to the Federal Emergency Management Agency (FEMA) to request modifying the existing floodplain, as delineated on current Flood Insurance Rate Maps (FIRMs). FEMA reviews the accuracy of all hydrologic and hydraulic analyses used to determine such changes. With respect to the submittals to FEMA, B&A was informed by SCDWR that all necessary supporting analyses and documentation regarding drainage and flooding related to the NVSSP will be based upon the HEC-1 and UNET modeling performed and accepted by SCDWR.

SCDWR'S MODELS FOR NVSSP AREA

SCDWR developed models for the NVSSP area for three conditions: Existing, Ultimate, and Stand-Alone. For the Elder Creek and Gerber Creek system, the short duration storm was determined to result in the worst-case flooding. Accordingly, the design storms have a 12-hour duration. The three conditions are described below.

EXISTING CONDITIONS

The Existing Conditions models represent conditions in 1997. SCDWR's UNET models for 10-year and 100-year storm events for the Existing Conditions show a broad floodplain within the NVSSP area. During the 100-year event, runoff in Laguna Creek basins upstream of the Central California Traction Rialroad (CCTR) and spills 1,050 cfs into the Gerber Creek Basin east of the CCTR. Immediately west of the CCTR, approximately 400 cfs spills from Gerber Creek over Gerber Road and into the Unionhouse Creek Basin. In the 10-year event, a peak flow of approximately 90 cfs enters Gerber Creek from Laguna Creek, however, no flow enters Unionhouse Creek from Gerber Creek. Presented on Plate DR -1 is the Existing Conditions Subbasin Map.

ULTIMATE CONDITIONS

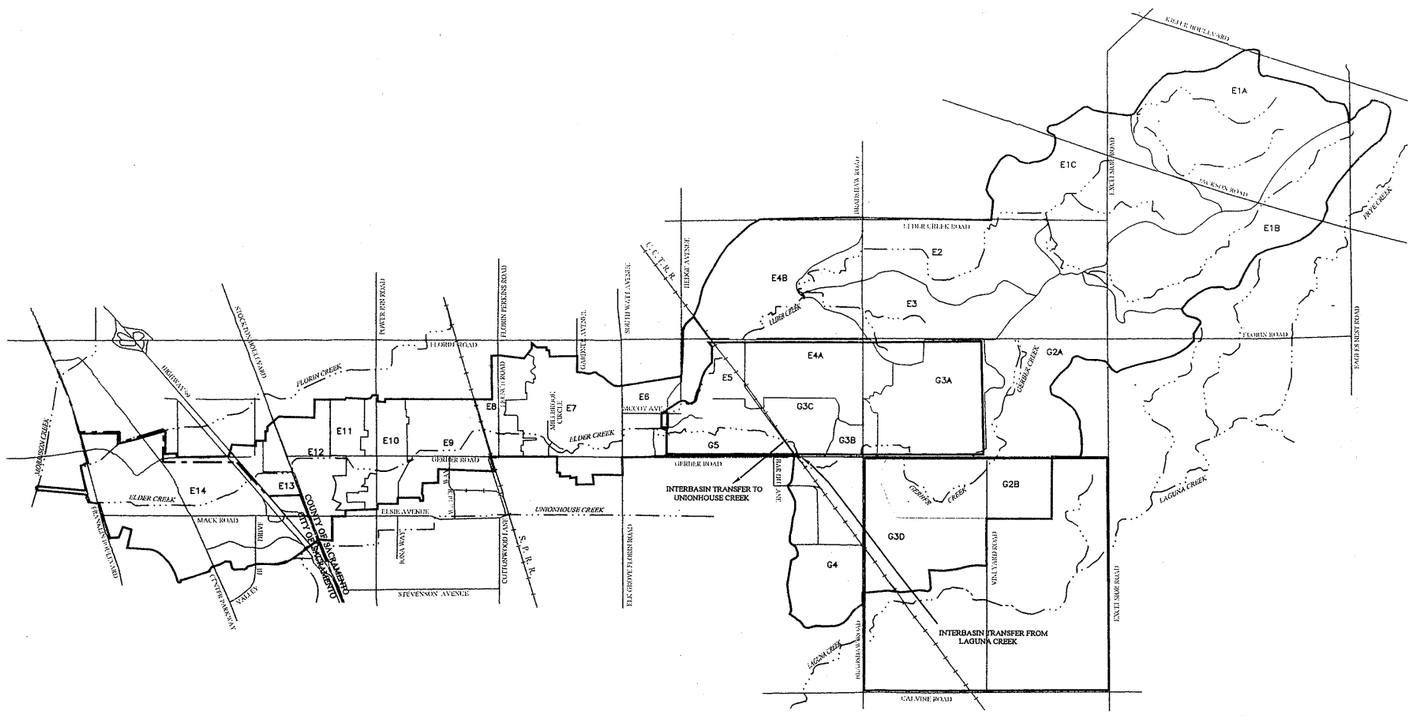
SCDWR's UNET models of the 10-year and 100-year storm events for the Ultimate Conditions represent full build out of the Elder Creek Basin, which includes all of the Gerber Creek Basin. Under the Ultimate conditions, the interbasin spill from Laguna Creek to Gerber Creek does not occur. The time before facilities will be in place to eliminate this spill from Laguna Creek is likely 10 to 15 years.

Presented on Plate DR -2 is the Ultimate Land Use Plan for the NVSSP area. Presented on Plate DR -3 is the Preferred Drainage Plan. The Preferred Drainage Plan includes Basin E20 along Elder Creek downstream of the NVSSP area. The results of B&A's evaluation indicate that Basin E20 is not required for the Ultimate Conditions or Stand-Alone Conditions. B&A modified the Ultimate Conditions model to include available flood storage within Storm Water Detention Basin E24B. Also, the size of the box culverts were increased at Gerber Road Crossing No. 4. The increase in size of the box culverts is required to eliminate increases to peak stages in the creeks for the Stand-Alone conditions. Upon review of the Gerber Road Crossing No. 4 improvements identified in the NVSSP DMP and CIP, it appears the model and documents are now consistent.

STAND-ALONE CONDITIONS

In the Stand-Alone Conditions, the spill from Laguna Creek to Gerber Creek is the same as in the Existing Conditions Model. SCDWR's UNET model for the 100-year storm event for the Stand-Alone Conditions represents Existing Conditions within the Elder Creek and Laguna Creek basins with full build out of the NVSSP area.

Plate DR -1
Elder and Gerber Creeks
Subbasin Map



LEGEND

- NVSSP Boundary
- Vineyard Springs CPA Boundary
- Basin Boundary
- Subbasin Boundary
- E4B Subbasin Name
- Creek
- City/County Limits
- Major Road
- Railroad

SOURCE

Based upon the Sacramento County Department of Public Works, Water Resources Division, "Elder and Gerber Creeks Technical Appendix: UNET Analysis," dated January 1997.

DRAFT

NORTH VINEYARD STATION SPECIFIC PLAN
DRAINAGE MASTER PLAN
UPDATE AND PHASING

ELDER AND GERBER CREEKS
SUBBASIN MAP
EXISTING CONDITIONS

BORCALLI & ASSOCIATES, INC.
SACRAMENTO, CALIFORNIA

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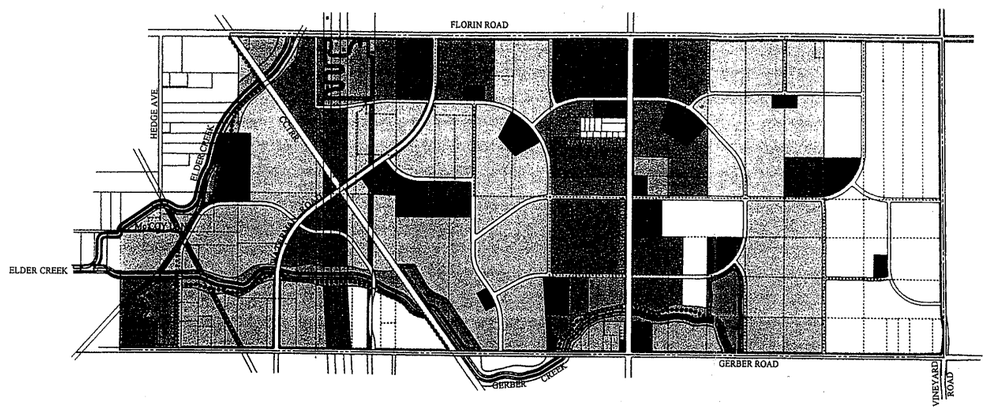
Plate DR -2
Ultimate Land Use



LEGEND

- Business/Professional
- Commercial
- Single Family Residential (1-3)
- Single Family Residential (3-5)
- Single Family Residential (4-7)
- Medium Density Residential (7-12)
- Multi-Family Residential (12-22)
- Landscape Corridor
- Drainage Parkway
- Parkway
- Storm Water Detention Basin
- Open Space
- Public Services
- Schools
- Parks
- Creek
- NVSSP Boundary
- Roads, Railroad
- Property Line, Easement
- Sewer Interceptor
- Trail

NOTE

An eight-acre park facility or two smaller park facilities shall be constructed within the area generally bounded by Passallis Lane (Loop) and Gerber Road. The actual size, configuration, and location of park site(s) will be determined at a later date following the submission and review of tentative maps and development proposal within the general area. Consideration should be given to locating the park site adjacent to Gerber Creek in conjunction with the open space area associated with Gerber Creek. Developing property owners shall contact the Southgate Park and Recreation District to determine the size, configuration, and location of the park site(s).

SOURCE

Based on the "North Vineyard Station Specific Plan," dated Fall 1998

LAND USE SUMMARY

RESIDENTIAL SUMMARY

LAND USE	DENSITY RANGE	DENSITY FIXED COUNT	AREA NET/GROSS		UNITS
Multi-Family Res.	12 to 22	18 (net)	37.8	39.7	680
Medium Density Res.	7 to 12	10 (net)	18.7	19.4	187
Single Family Res.	4 to 7	6 (gross)		204.6	1,227
Single Family Res.	3 to 5	5 (gross)		611.7	3,058
Single Family Res.	1 to 3	2 (gross)		283.4	567
Existing Residential				5.8	13
SUBTOTAL			1,164.6		5,732

NON-RESIDENTIAL SUMMARY

LAND USE	AREA NET/GROSS	
Golf Course	19.8	20.1
Commercial	29.9	30.5
Business/Professional	7.1	7.9
Schools	20.0	21.6
Parks	63.5	68.2
Parkways	---	2.5
Drainage Parkway	---	75.5
Open Space/Storm Water Detention	---	104.7
Landscape Corridors	---	23.2
Public Services	5.3	5.5
Major Streets	---	57.6
Railroad	---	14.6
SUBTOTAL		431.9
TOTAL		1,596.5

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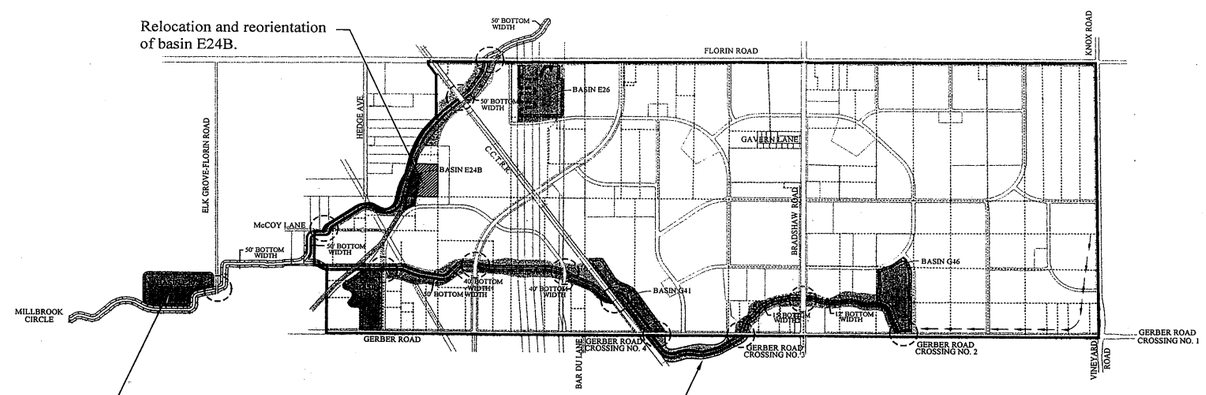
SCALE IN FEET

NORTH VINEYARD STATION SPECIFIC PLAN
DRAINAGE MASTER PLAN
UPDATE AND PHASING

ULTIMATE LAND USE

BORCALLI & ASSOCIATES, INC.
SACRAMENTO, CALIFORNIA

Plate DR -3
Preferred Drainage Plan



NOTE:
Basin E20 was reevaluated under the current phasing study and determined not necessary to mitigate peak stages and flows in the Stand-Alone and Ultimate Conditions. Final determination to be made by Sacramento County.

NOTE:
Spill from Laguna Creek will, in Ultimate Conditions, be eliminated by drainage improvements within the Laguna Creek drainage system and not from facilities implemental as part of the Preferred Drainage Plan.

LEGEND

- Drainage Corridor
- Storm Water Detention Basin
- Channel and Detention Basin Improvements
- NVSSP Boundary
- Road
- Railroad
- Power Line Corridor
- Property Line, Easement
- Proposed Land Use Boundary
- Sewer Interceptor
- Drainage Crossing
- Interim Overflow Path
- Trail

NOTE

The interim overflow path will be required until Gerber Creek is improved upstream of Gerber Road Crossing #1, or another plan is implemented to eliminate the existing spill through the NVSSP area during large storm events.

SOURCE

"Drainage Master Plan for the North Vineyard Station Specific Plan," dated January 30, 1998.

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SCALE IN FEET

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NORTH VINEYARD STATION SPECIFIC PLAN
DRAINAGE MASTER PLAN
UPDATE AND PHASING

PREFERRED DRAINAGE PLAN

BORCALLI & ASSOCIATES, INC.
SACRAMENTO, CALIFORNIA

DRAFT 1/18/02

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FIGURE 4

In the Stand-Alone Condition presented in the report entitled, “Elder and Gerber Creeks Technical Appendix: UNET Analysis,” the weir elevations for the basins are at the elevations included in the Ultimate Conditions model. With the weirs at these elevations, the basins fill in advance of the peak flow, occurring from the Laguna Creek spill. A minimum of one foot of freeboard for the creeks is not achieved for this Stand-Alone Condition. SCDWR did not develop a Stand-Alone Conditions model for the 10-year storm event.

As part of the NVSSP DMP, the Stand-Alone Conditions model was modified to include higher weir elevations to allow the basins to function more effectively with the higher flow that occurs in the Stand-Alone Conditions model. The weir crests would need to be lowered under Ultimate Conditions.

APPROACH

GENERAL

B&A’s approach to formulating and evaluating drainage facilities required to provide adequate drainage and flood protection for new development without adversely affecting existing flooding is discussed in this section. The facilities defined in the Preferred Drainage Plan and the associated hydrologic and hydraulic models provide the basis for B&A’s work.

HYDROLOGY

The hydrologic modeling accepted by SCDWR for drainage within the NVSSP area utilizes runoff hydrographs generated with the HEC-1 modeling program to simulate rainfall and runoff in the Elder Creek Basin. The HEC-1 models developed by Mr. Hamilton, to establish Existing Conditions runoff, were used by B&A to simulate runoff in areas of the basin where no change in land use occurs.

The NVSSP area was essentially “cut out” of the basin model and isolated in separate HEC-1 models to update the runoff within the NVSSP area consistent with changed land use, while leaving the Existing Conditions model outside the NVSSP area unmodified.

The development phases, as defined for the NVSSP area, were used to update the hydrologic subbasins within the NVSSP area. The increased runoff due to each phase of development was incrementally reflected in the hydrologic paramenters for each subbasin for each phase and the SACPRE and HEC-1 programs were utilized to update each subbasin storm runoff. Each runoff hydrograph was imported into the respective UNET model to combine the effects of phased development within the NVSSP area with the surrounding Existing Conditions subbasins.

The NVSSP DMP hydrologic analysis for the Elder Creek Basin includes an input parameter that reflects an overall drainage shed area of 143.6 square miles. This area is not consistent with the area of the actual drainage shed. B&A requested clarification from SCDWR as to whether to use the value currently in the models or to use a revised value. B&A was advised to utilize the actual area contributing upstream of the confluence of Elder Creek and Florin Creek, which is located downstream of the NVSSP area. B&A did a comparative analysis and determined the change in this specific imput parameter resulted in a minimal impact to peak flow and volumes for the same storm. Accordingly, for consistency and expediency, B&A used the existing hydrologic models as created previously.

The original NVSSP DMP included on-line and off-line detention basins. At the locations of the off-line basins, storm runoff discharges directly to the creeks, with a diversion of the flow from the creeks into the nearest downstream water quality/detention basin. This method was problematic for phasing when faced with the hydraulic constraints of draining into unimproved channels with high water surface elevations. B&A's approach differs in that the on-site Basin G41 and Basin G46 are on-line basins with respect to the pipe drainage system in that the pipes discharge directly into the detention basins, allowing all flow from frequent storm events, for which water quality treatment is most critical, to drain through the basins before entering the creeks. To preserve as much flood control volume in the basins as possible, runoff in excess of the capacity of the storm drain pipe system was routed to discharge directly into the creeks. Grading for development will need to be designed accordingly, to ensure that overland conveyance drains directly to the creeks.

Modeling (100-year) to account for the runoff routed through the pipe system and the overland flow concurrent with external runoff in the creeks is complex because flow into the basin through the pipe system is not only limited by the hydraulic capacity of the pipe system (designed for a 10-year event), but may be limited by the downstream water surface, thus volume of water in the basin as well. The water in the basin is affected by the flow out (gravity or pump), as well as the flow in from the creek over the weir. The hydraulic analysis required to accurately evaluate such a complex flow system was beyond the scope of this analyses. For purposes of this analysis, B&A's approach was to use a worst-case scenario to conservatively determine the size of the storage facilities.

Worst-Case Scenario for Creeks

The 10-year developed conditions and 100-year developed conditions hydrographs were modeled utilizing HEC-1. During a 100-year design event, the maximum overland flow and volume assumed to reach the creek directly was estimated by subtracting the 10-year runoff hydrograph from the 100-year runoff hydrograph for each time-step of the hydrograph simulation. This assumes flow only reaches the pond through the pipe system and over the weir from the creek. The flow actually reaching the creeks should by less since the storm drains are designed to carry the 10-year peak flow when the basin contains the entire 10-year storm volume. The local 100-year runoff is generally conveyed within the

channels while the basins are being filled through the pipe system, with only minor flow entering over the weirs from the creeks.

Worst-Case Scenario for Basins

The reciprocal approach was used to estimate the worst-case volumes reaching the basins during the 100-year event. The hydraulic capacity of the pipe system was flow control into the basins. The 100-year subbasin runoff hydrograph was used to direct flow up to the pipe capacity into its respective detention basin. This again is conservative since the basins are also receiving water from the creeks at the same time.

Consequently, both of these worst-case scenarios were input into the UNET model at the same time (i.e., worst-case residual runoff to creeks and worst-case basin volume to basins). This results in a double counting of the same volume in the model. This approach results in slightly oversizing the basins, but has little effect on the peak flow in the creeks since the spill from Laguna Creek, which governs, occurs after the local storm peak has passed and creates the worst-case peak flow conditions in Gerber Creek and in Elder Creek downstream of the confluence.

As noted above, the runoff to the basin and to the creeks was divided only for Basin G41 and Basin G46, along Gerber Creek. Basin E24A functions as an off-line basin until Phase 2, and does not require the application of the above-mentioned methodology. Basin E24B and Basin E26 are designed as on-line basins that receive the entire 100-year storm runoff (i.e., pipe flow and overland flow) from the adjacent NVSSP subbasins in all phases and did not require the application of the methodology described above.

Hydraulics

Storm Drain Pipe System

B&A utilized the *Nolte Method* and Nolte charts in “Volume 2: Hydrology Standards,” of the “Drainage Manual” prepared by the Sacramento City/County to calculate the peak 10-year design flow to size the storm drain pipes.

Manning’s equation was used to calculate the HGL. In accordance with Sacramento County Standards, the HGL is a minimum of 0.5 feet below the proposed drain inlet.

All the storm drain trunks sized by B&A drain into water quality/detention basins. The starting water surface at each detention basin was assumed to be for the volume associated with storing the runoff volume from a 10-year, 24-hour storm. The maximum 10-year basin stage is based upon the flood control pumps being off to reflect a worst-case condition for the fully developed condition. When the pumps are working, the basin elevations will be lower. B&A developed UNET models to determine if any other flow enters the basins from the creeks under the 10-year, 12-hour (maximum peak flow)

phased conditions. Under each of the phases, the channels convey the 10-year creek flow with pumps running, without flow spilling over the weirs into the basins. Thus the detention basins and the creeks are essentially hydraulically disconnected under the 10-year event, except for the pumps or flap-gated gravity outlet pipes.

Detention Basins

To phase development using interim pumping, detention basins will likely require storage volumes greater than identified in the NVSSP DMP. With this understanding, B&A's approach was to keep the creek or channel improvements the same as those identified in the NVSSP DMP, and to increase the detention basin capacity, as necessary, to provide the desired flood control protection and mitigation.

Pumping from the detention basins is at the rate of 10 cfs. In B&A's work in developing the Phasing Concept (April 10, 2001) it was determined that, in the case of a 100-year, 12-hour storm event followed by a local 10-year, 12-hour storm within a day, the available detention basin storage would not be exceeded. This pumping capacity of 10 cfs was, therefore, kept as the criteria in B&A's approach for sizing the detention basins during the phasing of development.

Channel Improvements

By virtue of B&A's approach, as noted above, all the creek channel improvements are the same as defined for the Preferred Drainage Plan. These channels, or portions thereof, were incorporated into the UNET models where improved conveyance was required to mitigate impacts of phased development.

Water Quality Treatment

B&A's approach to water quality treatment of urban runoff differs from the original NVSSP DMP approach. Due to hydraulic limitations relating to the storm drain design discussed above, it was not feasible to divert water from the creek into the basins for water quality treatment in advance of the creeks being excavated to the size and elevation established for the Preferred Drainage Plan.

Therefore, B&A's approach was to direct runoff from developed areas within the NVSSP area through the storm drain pipe system directly to the basins for water quality treatment. Areas within the NVSSP area that are isolated by physical features (I.e., creeks and topography) from larger water quality/detention basins, are assumed to require individual water quality treatment basins of one acre or less. These smaller water quality treatment facilities could be placed at the downstream ends of smaller storm drains, and have overflow weirs that would spill directly into improved channels. These smaller water quality basins are considered "on-site" infrastructure rather than master plan facilities, thus the design is not included as part of this report. Evaluating the hydraulics for each of these isolated areas will have to be addressed as they plan

for development. The aggregate of the land in this category amounts to 142 acres, which represents approximately nine percent of the NVSSP area.

Within the major part of the NVSSP area, the initial runoff is directed to five primary water quality/detention basins that were identified as part of the Preferred Drainage Plan (Plate DR -3). To maximize the available flood control volumes in these basins, while minimizing the footprints of these basins, B&A sized the water quality features as wet water quality basins with the top of the water quality pool at the invert of the adjacent channels when constructed to the ultimate channel section. The wet water quality pond concept has been, and is currently being, implemented within the Sacramento Region including Sacramento County for development similar to that proposed for the NVSSP area. During the interim drainage scenarios, the evacuation pumps will be operated to pump storm water from the basins into the existing channels at higher elevations to maintain the flood control storage volume for the respective basin. When designed, the basins are to be configured to ensure that “short circuiting” of the flow does not occur from the storm drain outlets to the basin outlets.

Currently, Sacramento County has no standard for sizing wet water quality basins, however, after consulting with SCDWR, B&A was advised to size the wet water quality basins utilizing the City of Sacramento Department of Utilities’ “North Natomas Drainage Design and Procedures Manual,” dated July 1998. The City’s standards have been accepted, unofficially, by SCDWR for sizing wet water quality treatment facilities. B&A used the Wet Basin Option “b,” as shown on Figure 6-5, of the “North Natomas Drainage Design and Procedures Manual,” as the basis for sizing and draining water quality volumes. This option allows for the efficient evacuation of water quality volumes and flood control volumes with a submerged outlet pipe (with flap-gate) configuration. Whenever the downstream outlet water surface elevation is lower than the basin elevation, the excess volume will drain effectively.

DRAINAGE FACILITIES PHASING ANALYSIS

DEVELOPMENT PHASING

Development within the NVSSP area is planned to occur in five phases: Phase 1A, Phase 1B, Phase 1C, Phase 2, and Phase 3. The geographic area and location of the respective phases are shown on Plate DR -4. Development within Phase 1A was further refined by the development community into two areas identified as Phase 1A-1 and Phase 1A-2.

These development phases provide the basis for analyzing the phasing drainage infrastructure while meeting Sacramento County’s objectives, policies, and standards.

PHASE 1A

The area of development within the NVSSP area for the initial phase is identified as Phase 1A-1 and Phase 1A-2 on Plate DR -4. For the Phase 1A analysis, these areas were reflected as developed with all remaining areas with the NVSSP area remaining defined as existing land use conditions. The subbasins affected by this phase of development were revised and runoff hydrographs were developed to reflect the increases in runoff associated with this development.

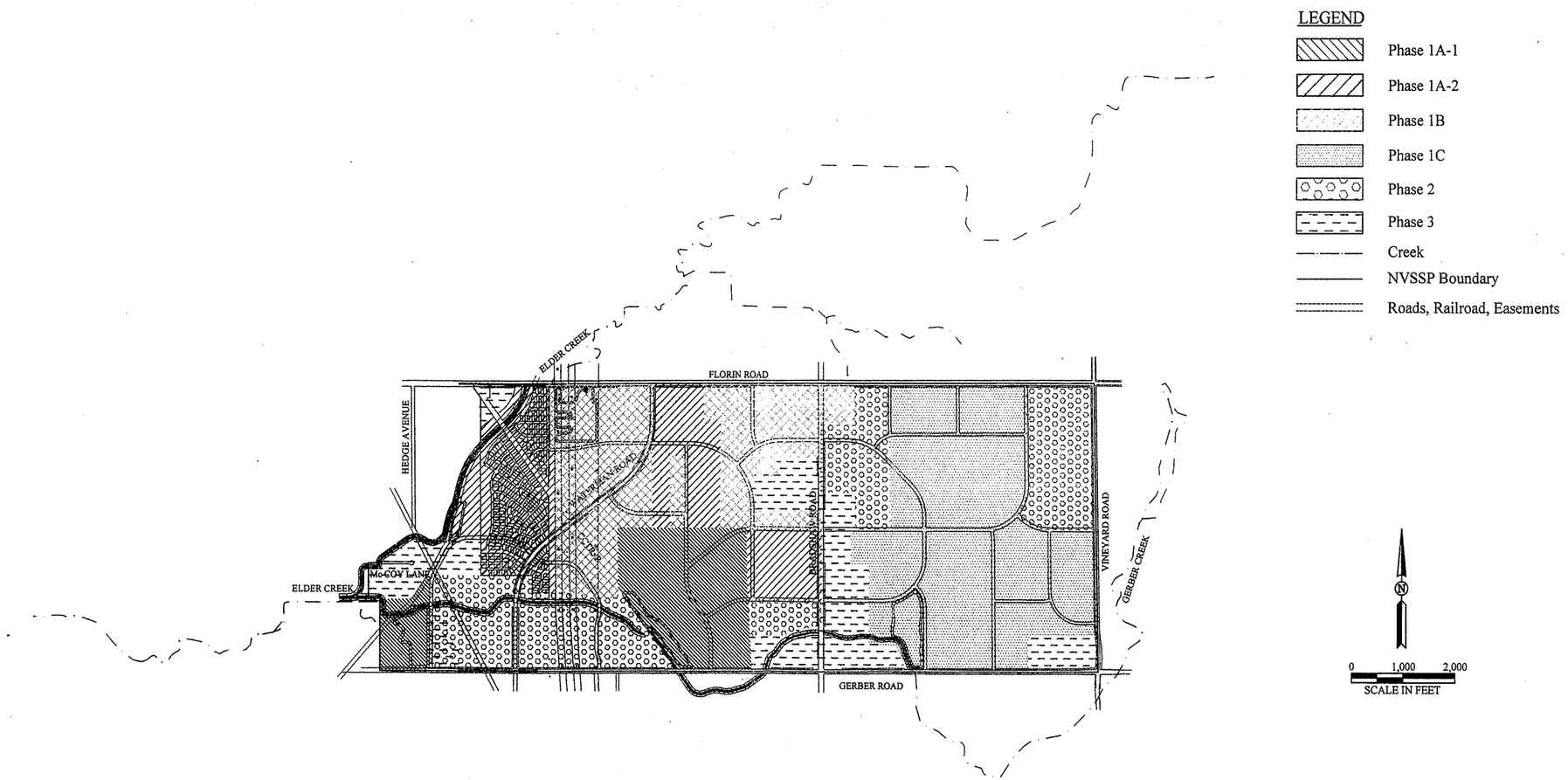
Illustrated on Plate DR -5 is the typical cross section of the detention basins reflecting storage for water quality and flood control.

The drainage facilities required to mitigate flooding impacts (i.e., no increases in peak creek stages or flow) in Elder Creek and Gerber Creek, resulting from development of Phase 1A-1, are identified below.

- Water Quality/Detention Basin G41 with connecting weir structure to Gerber Creek and 10 cfs pump station.
- Water Quality/Detention Basin E24A with connecting weir structure to Gerber Creek and 10 cfs pump station.
- Drainage channel improvements consistent with the Preferred Drainage Plan on Gerber Creek from the CCTR crossing upstream to Gerber Road, adjacent to Basin G41.
- Improved crossing on Gerber Creek at Gerber Road just upstream of Basin G41.

For development of Phase 1A-2, the drainage facilities identified below are required to mitigate impacts in Elder Creek and Gerber Creek.

Plate DR -4
Development Phasing



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NORTH VINEYARD STATION SPECIFIC PLAN
DRAINAGE MASTER PLAN
UPDATE AND PHASING

DEVELOPMENT PHASING

Plate DR -5
Detention Basin Cross Section

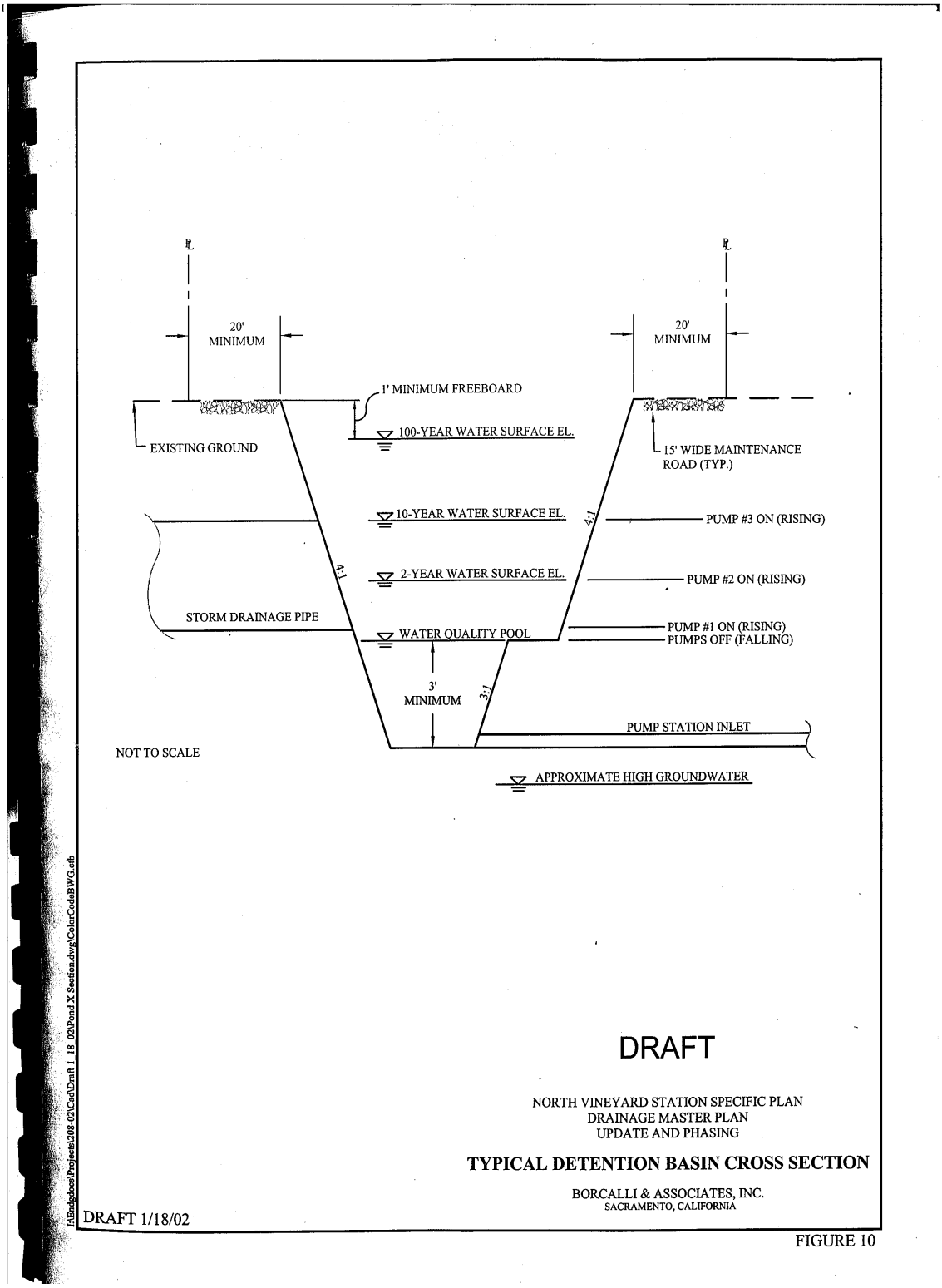


FIGURE 10

- Water Quality/Detention Basin E24B with connecting weir structure to Elder Creek and 10 cfs pump station.
- Detention Basin E26 with 10 cfs pump station and connecting outlet pipe.
- Drainage channel improvements consistent with the Preferred Drainage Plan on Elder Creek from Florin Road downstream to Basin E24B.
- Drainage channel improvements consistent with the Preferred Drainage Plan on Gerber Creek from Waterman Road downstream to Basin E24A.
- Improved crossing on Elder Creek at CCTR.

It is important to point out that the facilities listed above offer mitigation for the development of lands within the Phase 1A areas only. The flood control storage in Basin E24A is utilized to mitigate the impacts of development within Phase 1A along Gerber Creek upstream of the CCTR crossing. The volume created with Basin E24A cannot be used to mitigate the impact of development on other lands without the construction of additional drainage facilities.

It is also important to note that the Waterman Road crossing in the Phase 1A plan is proposed at the size shown to convey flow under Ultimate Conditions. After consultation with Sacramento County staff, this crossing was evaluated for conveyance of the 10-year event without overtopping. Channel improvements are required downstream of the crossing to mitigate the impact of spilling more water over Gerber Road to Unionhouse Creek. The crossing, however, does not convey the interim 100-year flow, which includes the spill flow from the Laguna Creek Basin. In the interim, the Waterman Road crossing will be overtopped from a storm event between a 10-year and 100-year event. Under Ultimate Conditions, Waterman Road is not overtopped.

In Phase 1A, the majority of the proposed drainage facilities are consistent with the Preferred Drainage Plan facilities. The drainage facilities required during the interim that are not part of the Preferred Plan are the pump stations for Basin G41 and Basin E24A, which are required for Phase 1A-1 and the pump stations for Basin E24B and Basin E26, which are required for Phase 1A-2. The overflow weir structures connecting the channels to the basins are constructed at interim elevations that are higher than necessary for Stand-Alone and Ultimate Conditions. Under Stand-Alone and Ultimate Conditions, the weirs will need to be lowered.

Presented on Plate DR -6 and Plate DR -7, respectively are the residual 100-year floodplains from implementing the respective phased drainage facilities to accommodate the planned development. Presented on Plate DR -8 and Plate DR -9 are the maximum water surface profiles along Elder Creek with the development and associated drainage facilities for the respective phases completed.

PHASE 1B

Phase 1B is defined as the areas within the NVSSP area that are designated for development following development of Phase 1A. The Phase 1B area is shown on Plate DR -4. All hydrologic and hydraulic evaluation of drainage requirements for Phase 1B presupposes all lands within Phase 1A are already developed.

No drainage facilities are required in addition to those identified for Phase 1A to mitigate the flooding impact in Elder Creek and Gerber Creek as a result of development within the Phase 1B area.

Presented on Plate DR -10 is the residual floodplain following development of Phase 1B, and construction of the Phase 1B drainage facilities. Presented on Plate DR -11 is the maximum water surface profile along Elder Creek with the Phase 1B development and associated drainage facilities completed.

PHASE 1C

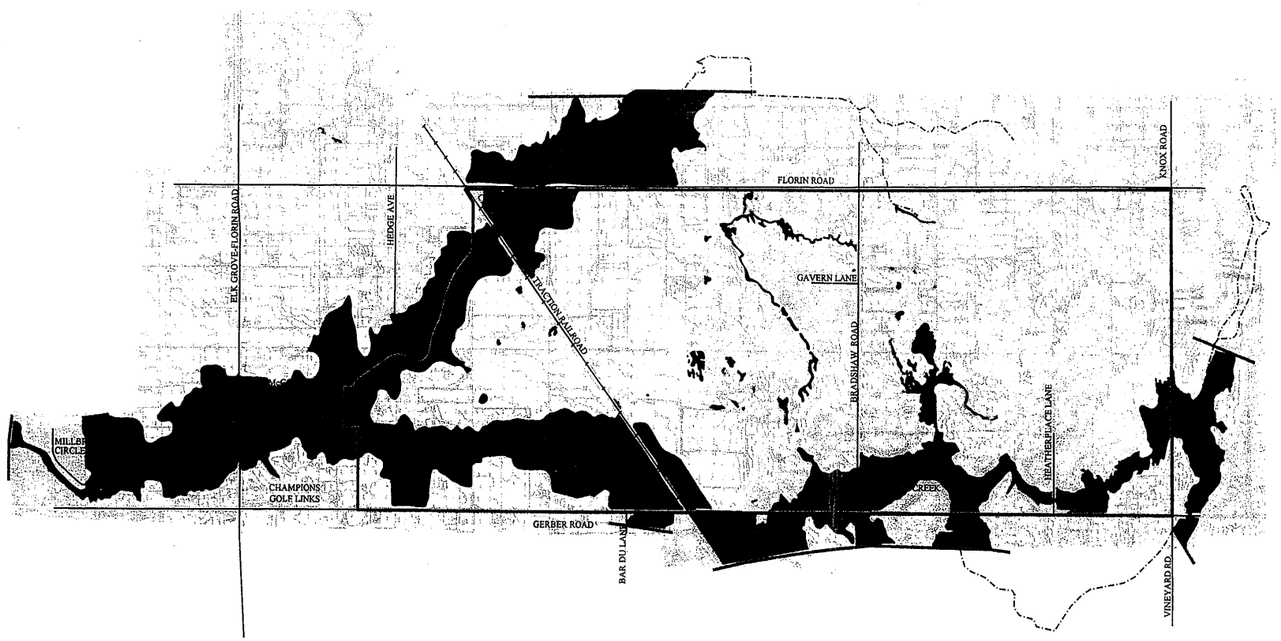
The area identified for development as Phase 1C is presented on Plate DR -4. The majority of the land identified as Phase 1C is tributary to Basin G46. All hydrologic and hydraulic analyses performed to mitigate flooding impacts for Phase 1C, presuppose all development identified for previous phases has occurred.

The drainage facilities required in addition to those previously listed under Phase 1A and Phase 1B to mitigate the flooding impact in Elder Creek and Gerber Creek, resulting from development within the Phase 1C area, are identified below.

- Detention Basin G46 with connecting weir structure to Gerber Creek and 10 cfs pump station.

Presented on Plate DR -12 is the residual floodplain following development of Phase 1C, and construction of the Phase 1C drainage facilities. The pump station at Basin G46 is an interim facility that is not part of the Preferred Drainage Plan. The overflow weir connecting Basin G46 with Gerber Creek is constructed at an interim elevation and will need to be lowered under Ultimate Conditions. Presented on Plate DR -13 is the maximum water surface profile along Elder Creek with the Phase 1C development and associated drainage facilities completed.

Plate DR -6
Phase 1A-1 Residual 100-Year Floodplain



LEGEND

- 100-Year Floodplain (UNET Model)
- Vernal Pool
- Seasonal Wetland
- Stock Pond
- NVSSP Boundary
- Creek
- Major Road
- Railroad
- Limit of Floodplain Mapping

NOTE

The 100-year floodplain is based upon Stand-Alone Conditions.

SOURCE

The wetland delineation is based upon the "North Vineyard Station Specific Plan Technical Appendix: Biotic Resources," prepared by Sugnet and Associates Environmental Consultants, dated May 3, 1996.

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SCALE IN FEET

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NORTH VINEYARD STATION SPECIFIC PLAN
DRAINAGE MASTER PLAN
UPDATE AND PHASING

PHASE 1A-1
RESIDUAL 100-YEAR FLOODPLAIN

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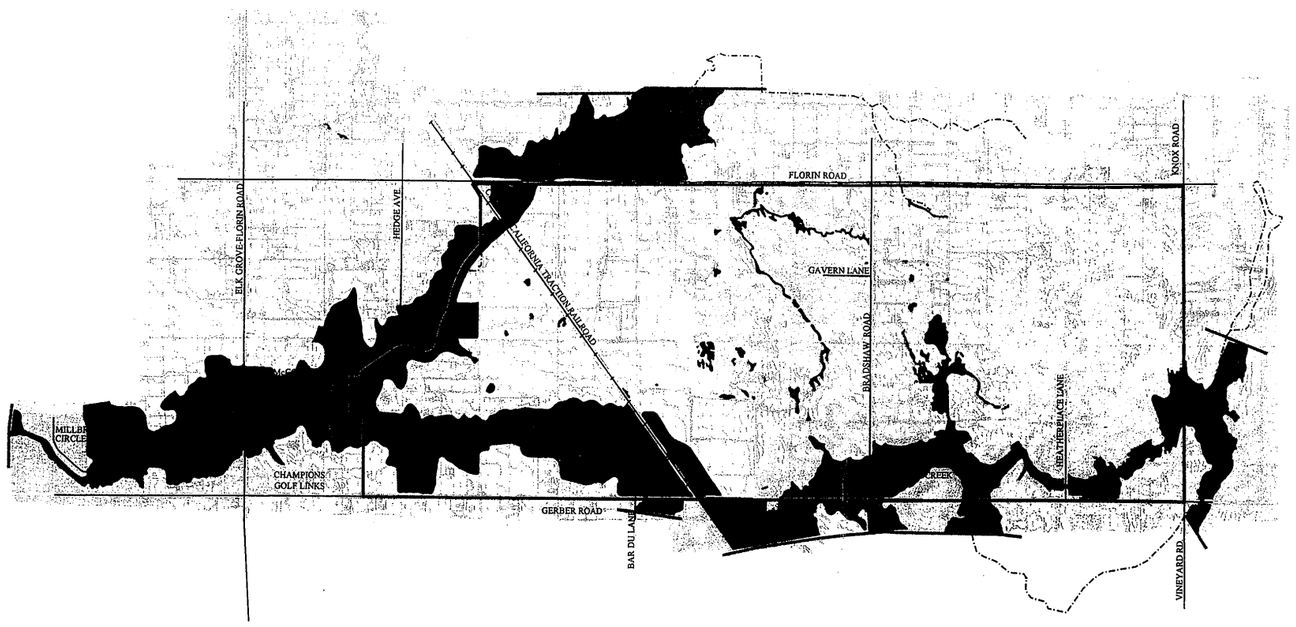
Plate DR -7
Phase 1A-2 Residual 100-Year Floodplain



LEGEND

- 100-Year Floodplain (UNET Model)
- Vernal Pool
- Seasonal Wetland
- Stock Pond
- NVSSP Boundary
- Creek
- Major Road
- Railroad
- Limit of Floodplain Mapping

NOTE

The 100-year floodplain is based upon Stand-Alone Conditions.

SOURCE

The wetland delineation is based upon the "North Vineyard Station Specific Plan Technical Appendix: Biotic Resources," prepared by Sugnet and Associates Environmental Consultants, dated May 3, 1996.

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SCALE IN FEET

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NORTH VINEYARD STATION SPECIFIC PLAN
DRAINAGE MASTER PLAN
UPDATE AND PHASING

PHASE 1A-2
RESIDUAL 100-YEAR FLOODPLAIN

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Plate DR -8
Elder Creek Maximum Water Surface Water Profile
Phase 1A-1

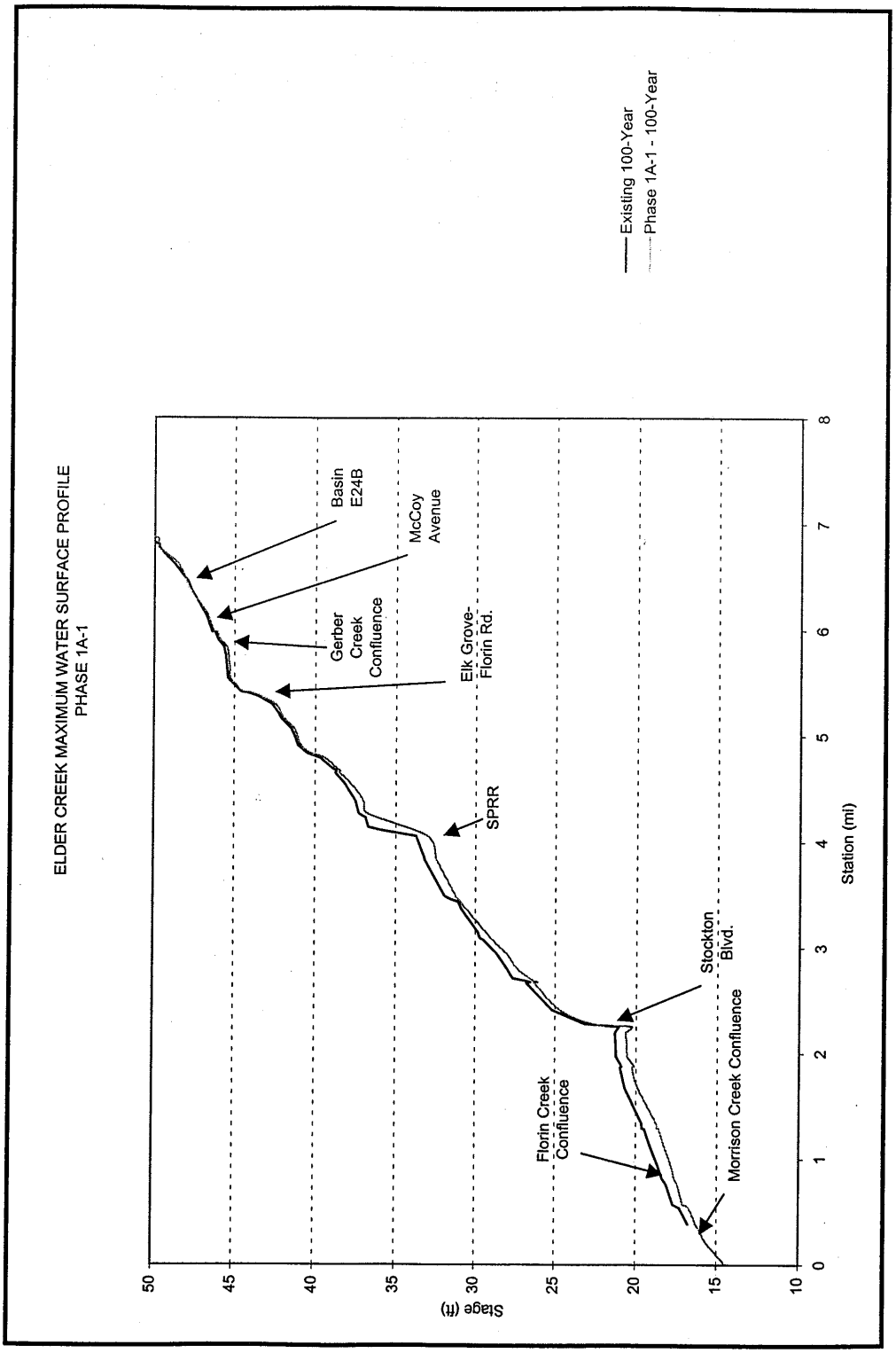


Plate DR -9
Elder Creek Maximum Water Surface Water Profile
Phase 1A-2

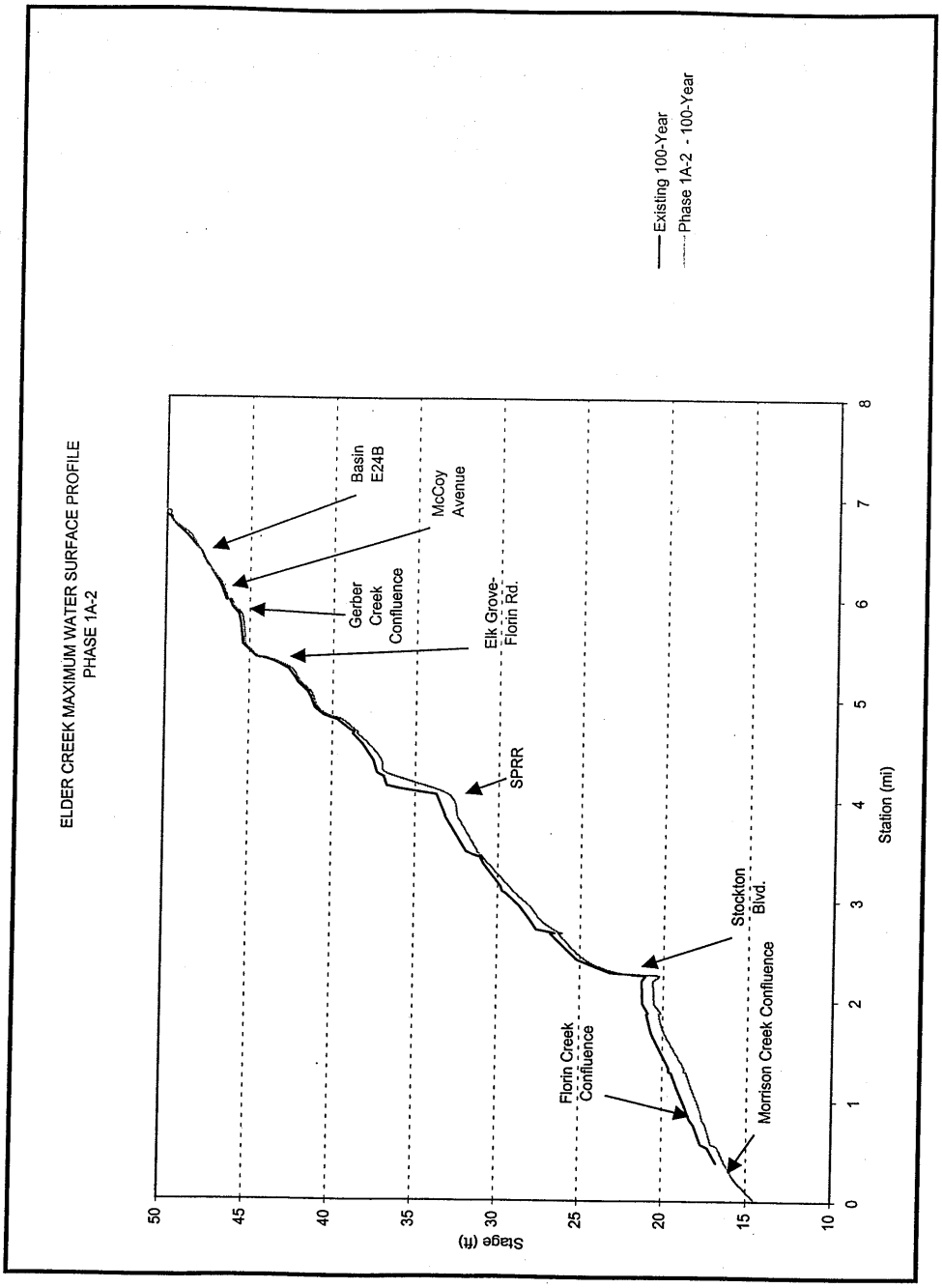
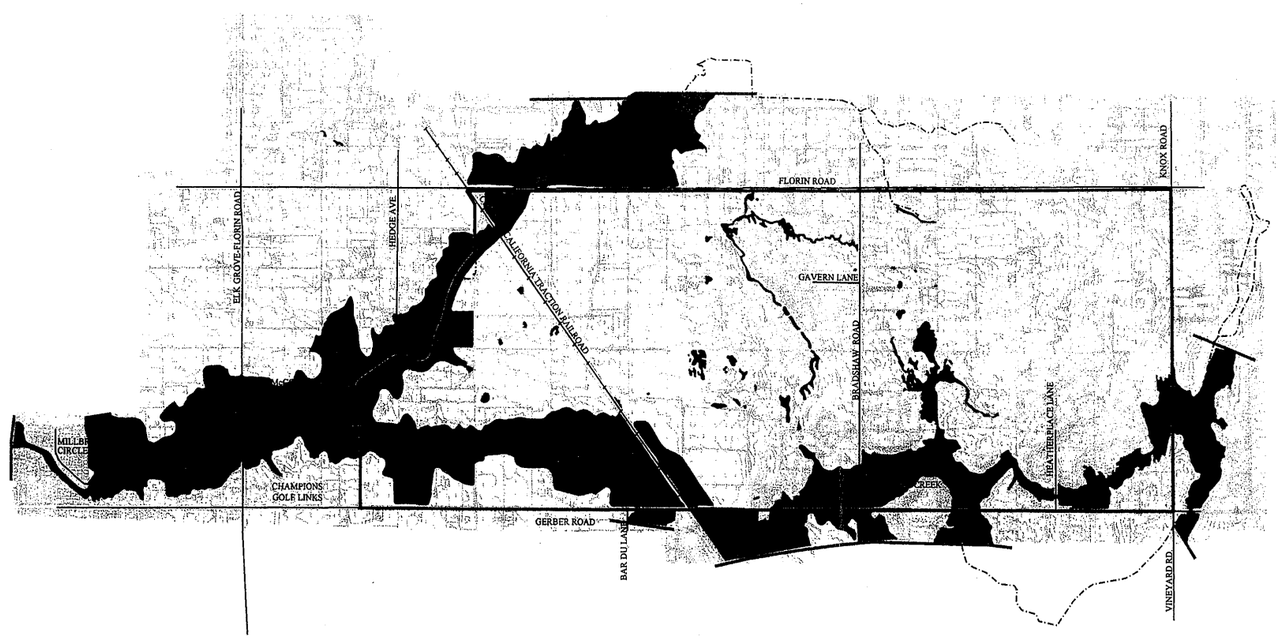


Plate DR -10
Phase 1B Residual 100-Year Floodplain



LEGEND

- 100-Year Floodplain (UNET Model)
- Vernal Pool
- Seasonal Wetland
- Stock Pond
- NVSSP Boundary
- Creek
- Major Road
- Railroad
- Limit of Floodplain Mapping

NOTE

The 100-year floodplain is based upon Stand-Alone Conditions.

SOURCE

The wetland delineation is based upon the "North Vineyard Station Specific Plan Technical Appendix: Biotic Resources," prepared by Sugnet and Associates Environmental Consultants, dated May 3, 1996.

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SCALE IN FEET

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NORTH VINEYARD STATION SPECIFIC PLAN
DRAINAGE MASTER PLAN
UPDATE AND PHASING

PHASE 1B
RESIDUAL 100-YEAR FLOODPLAIN

BORCALLI & ASSOCIATES, INC.

Plate DR -11
Elder Creek Maximum Water Surface Profile
Phase 1B

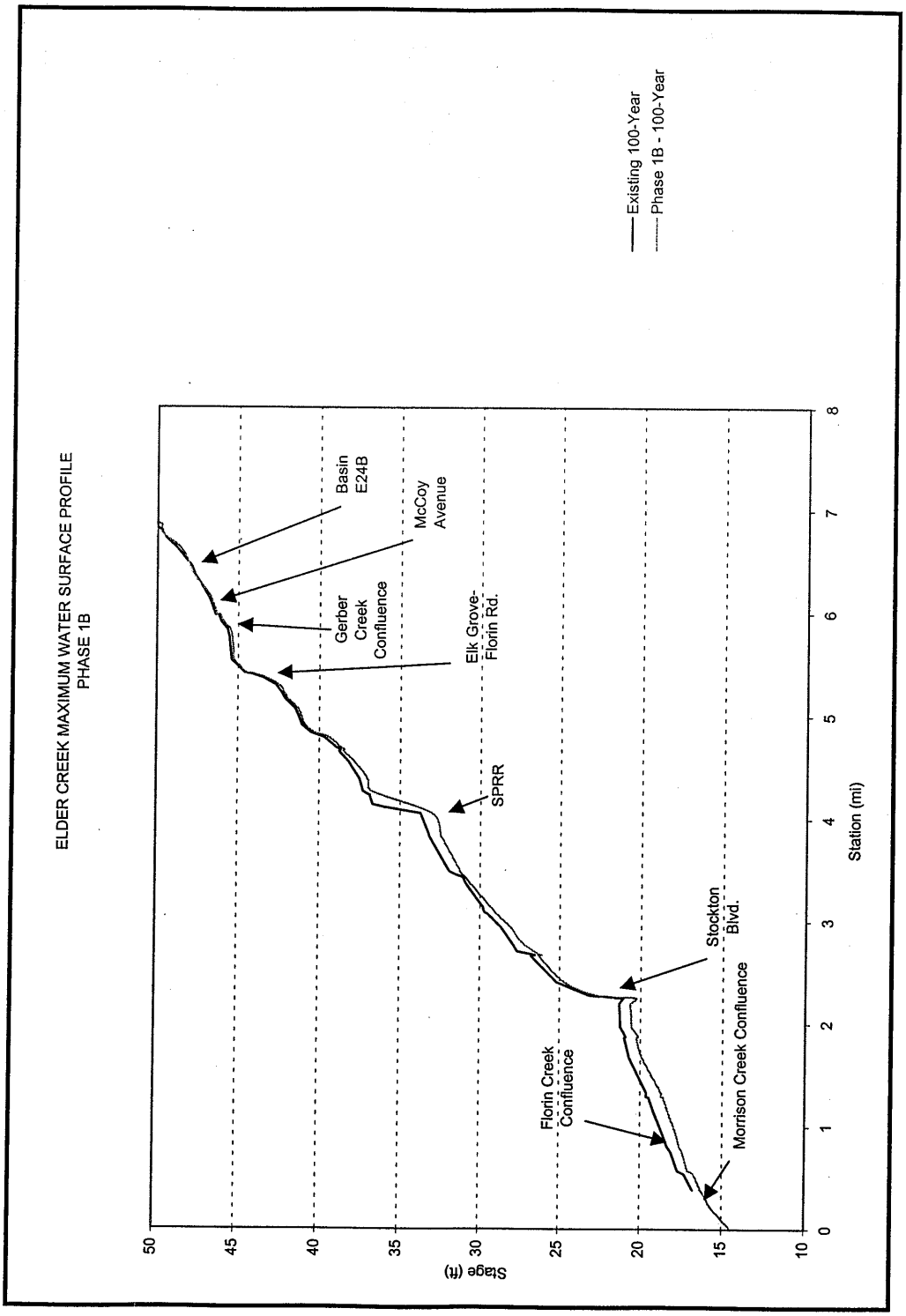
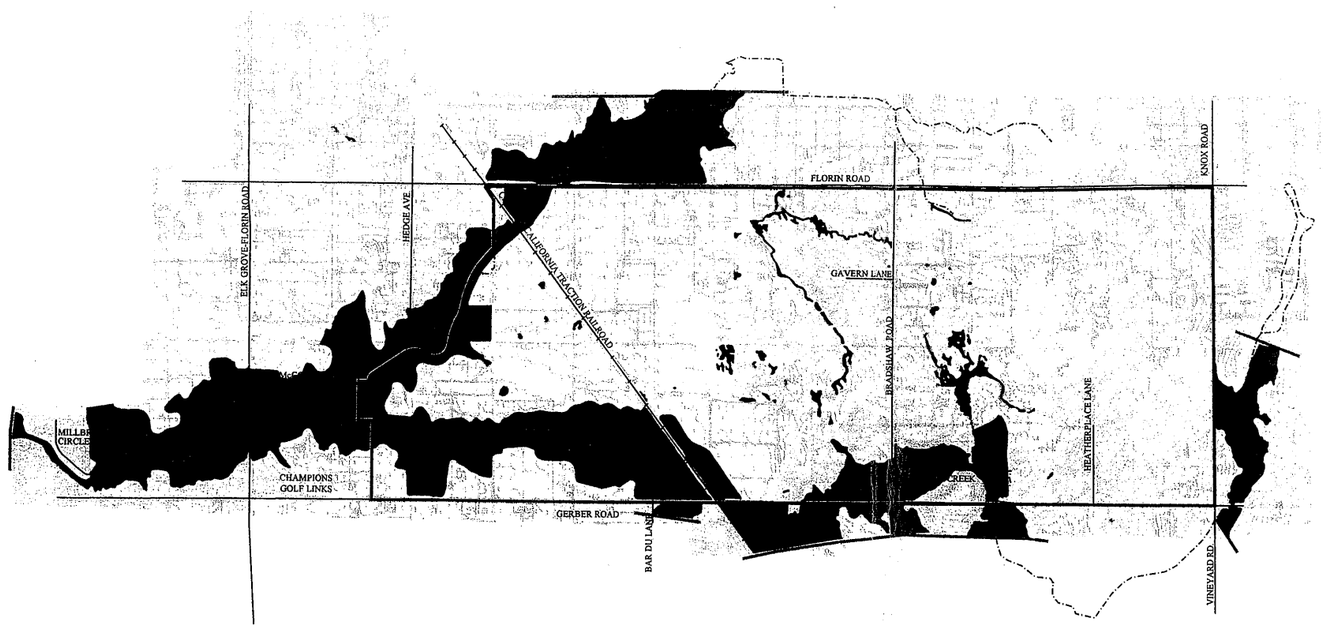


Plate DR -12
Phase 1C Residual 100-Year Floodplain



LEGEND

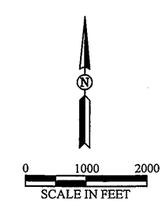
- 100-Year Floodplain (UNET Model)
- Vernal Pool
- Seasonal Wetland
- Stock Pond
- NVSSP Boundary
- Creek
- Major Road
- Railroad
- Limit of Floodplain Mapping

NOTE

The 100-year floodplain is based upon Stand-Alone Conditions.

SOURCE

The wetland delineation is based upon the "North Vineyard Station Specific Plan Technical Appendix: Biotic Resources," prepared by Sugnet and Associates Environmental Consultants, dated May 3, 1996.



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NORTH VINEYARD STATION SPECIFIC PLAN
DRAINAGE MASTER PLAN
UPDATE AND PHASING

PHASE 1C
RESIDUAL 100-YEAR FLOODPLAIN

Plate DR -13
Elder Creek Maximum Water Surface Profile
Phase 1C

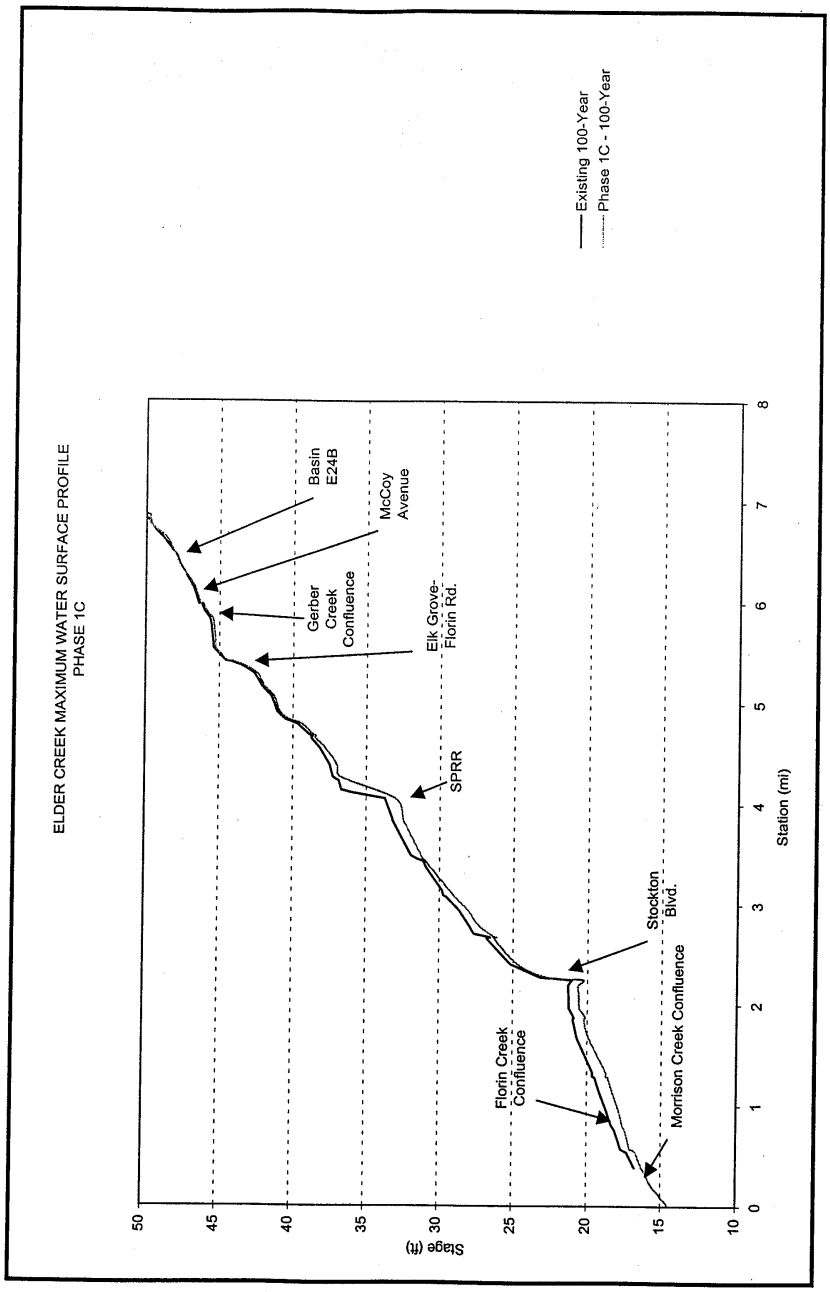


FIGURE 18
1/18/02

PHASE 2

The area identified for development as Phase 2 is presented on Plate DR -4. The majority of land included in Phase 2 is tributary to Basin E24A and Basin G46, which would be constructed in Phase 1A and Phase 1C, respectively. All hydrologic and hydraulic analyses performed to mitigate flooding impacts for Phase 2, presuppose all development within previous phases has already occurred.

It is important to note here that Phase 2 development and drainage impacts resulting therfrom, could be mitigated using the phasing concept using detention and interim pumping, as proposed for Phase 1A, Phase 1B, and Phase 1C. It is anticipated, however, that development occurring in the earlier phases, together with development of Phase 2, will generate funds sufficient to commence construction of facilities outlined in the Preferred Drainage Plan. Accordingly, in keeping with the commitment to Sacramento County to construct the Preferred Drainage Plan facilities as early as possible, the analysis for Phase 2 is aimed at identifying features of the Preferred Drainage Plan that result in mitigation commensurate with the impacts resulting from Phase 2 development.

Following the above noted approach, the drainage facilities required, in addition to those previously listed under Phase 1A, Phase 1B, and Phase 1C, to mitigate the flooding impact in Elder Creek and Gerber Creek, as a result of development within the Phase 2 area, are identified below.

- Drainage channel improvements consistent with the Preferred Drainage Plan on Elder Creek from Basin E24B, downstream to Millbrook Circle.
- Drainage channel improvements consistent with the Preferred Drainage Plan on Gerber Creek from Waterman Road upstream to CCTR, and downstream of Basin E24A to the confluence with Elder Creek.
- Removing the 10 cfs pump station at Basin E24A from flood control service.
- Improved crossing on Elder Creek at Elk Grove-Florin Road.
- New crossing on Gerber Creek for Passalis Lane East.
- New crossing on Gerber Creek or Passalis Lane West.

All Phase 2 drainage facilities are permanent.

Presented on Plate DR -14 is the residual floodplain from implementing the respective drainage facilities to accommodate the planned development. Presented on Plate DR -15 is the maximum water surface profile along Elder Creek with the Phase 2 development and associated drainage facilities completed.

PHASE 3

The area identified for development as Phase 3, the final phase of the NVSSP area, is presented on Plate DR -4.

At this point in development of the NVSSP area, it is assumed that funding is sufficient to construct the remaining elements of the Preferred Drainage Plan. Concurrently, the interim facilities constructed in Phase 1A, Phase 1B, and Phase 1C, namely pump stations, would be physically removed or designated to a function only for maintenance f the water quality basin.

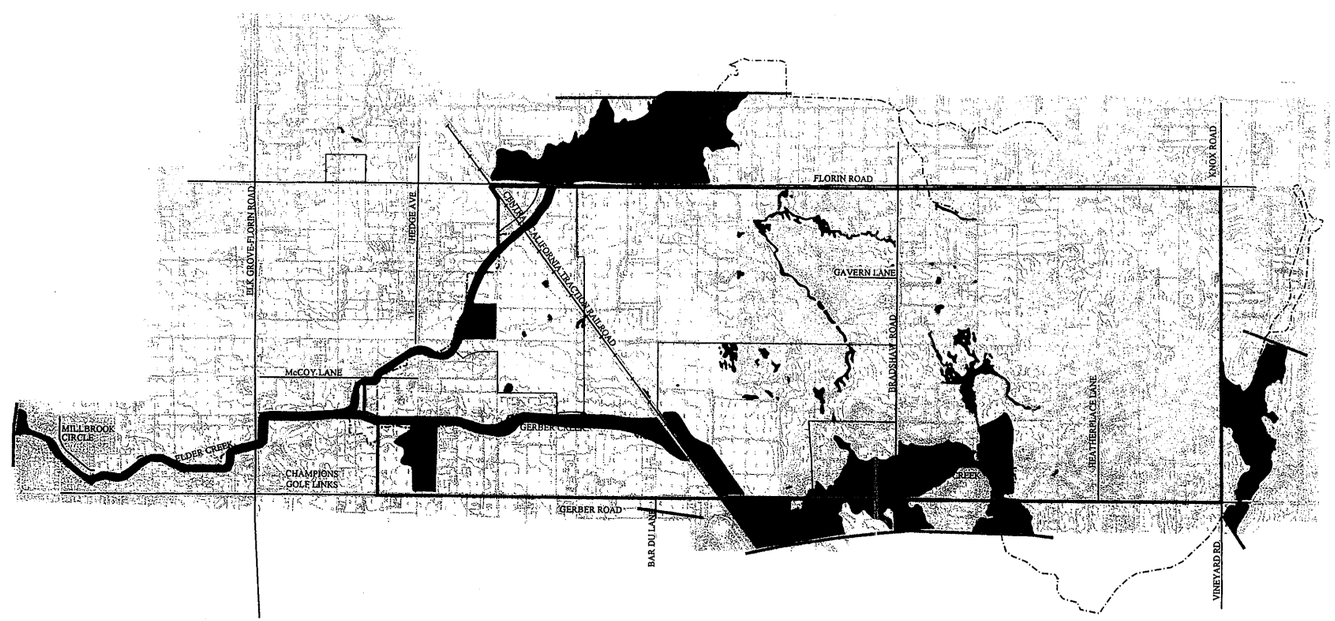
The Preferred Drainage Plan will be fully implemented at this phase of development. The residual floodplain, at this point, will be confined to the creek channels adjacent to and downstream of the NVSSP area for both Ultimate Conditions and Stand-Alone Conditions.

Presented on Plate DR -16 is the residual floodplain from implementing the respective drainage facilities to accommodate the balance of the planned development. Presented on Plate DR -17 is the corresponding maximum water surface profile along Elder Creek with the Phase 3 development and associated drainage facilities completed.

Presented on Table 14-1 is a summary of the detention basin parameters at Phase 3, under the Stand-Alone Conditions. At the point in time when Ultimate Conditions exist, the detention basin parameters will be modified slightly, primarily with respect to weir elevations. The detention basin parameters for the Ultimate Conditions are presented in Table 14-2.

The spill from Laguna Creek will not be eliminated by virtue of constructing the Preferred Drainage Plan facilities.

Plate DR -14
Phase 2 Residual 100-Year Floodplain



LEGEND

- 100-Year Floodplain (UNET Model)
- Vernal Pool
- Seasonal Wetland
- Stock Pond
- NVSSP Boundary
- Creek
- Major Road
- Railroad
- Limit of Floodplain Mapping

NOTE

The 100-year floodplain is based upon Stand-Alone Conditions.

SOURCE

The wetland delineation is based upon the "North Vineyard Station Specific Plan Technical Appendix: Biotic Resources," prepared by Sugnet and Associates Environmental Consultants, dated May 3, 1996.

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SCALE IN FEET

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NORTH VINEYARD STATION SPECIFIC PLAN
DRAINAGE MASTER PLAN
UPDATE AND PHASING

PHASE 2
RESIDUAL 100-YEAR FLOODPLAIN

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Plate DR -15
Elder Creek Maximum Water Surface Profile
Phase 2

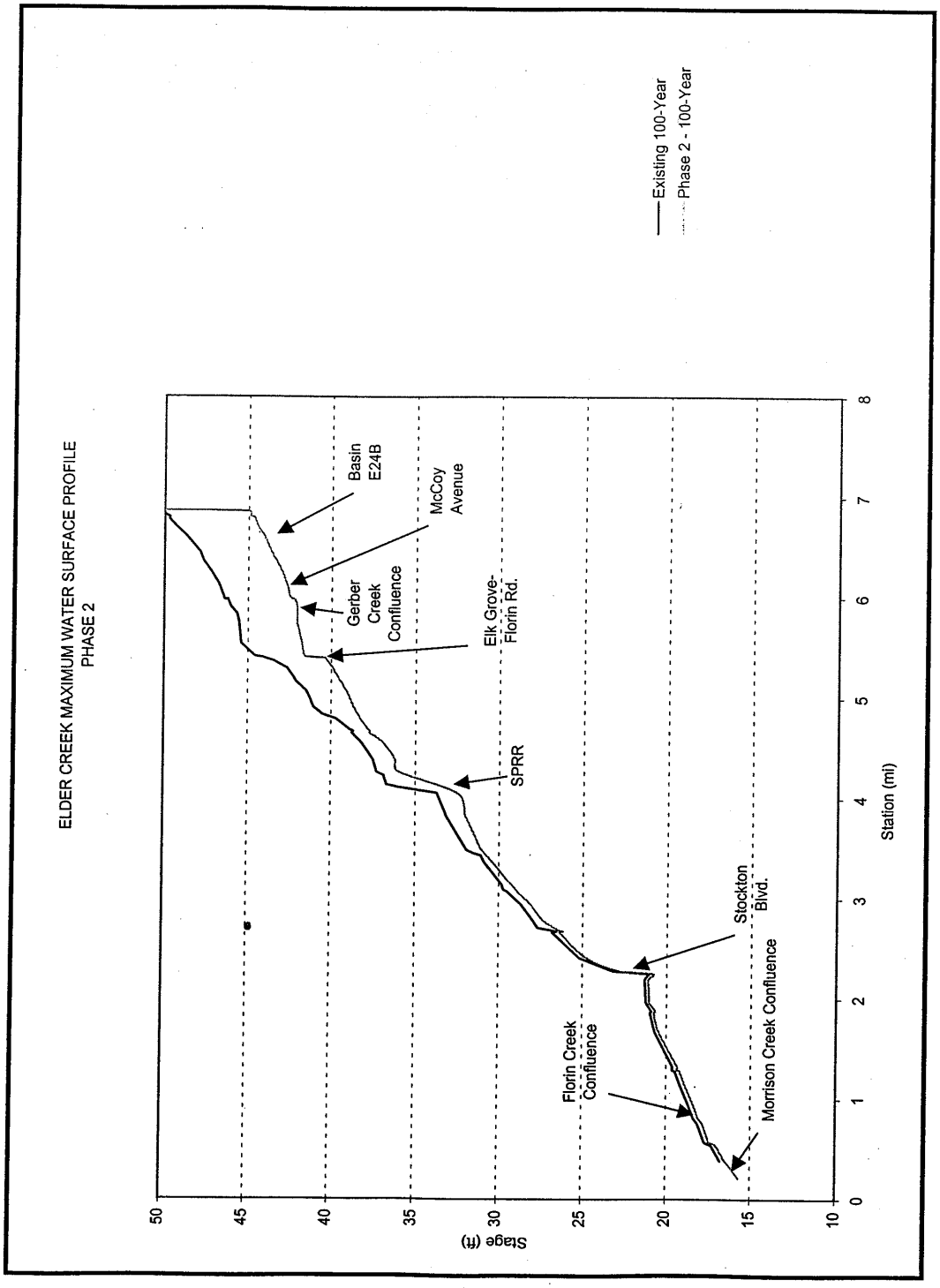
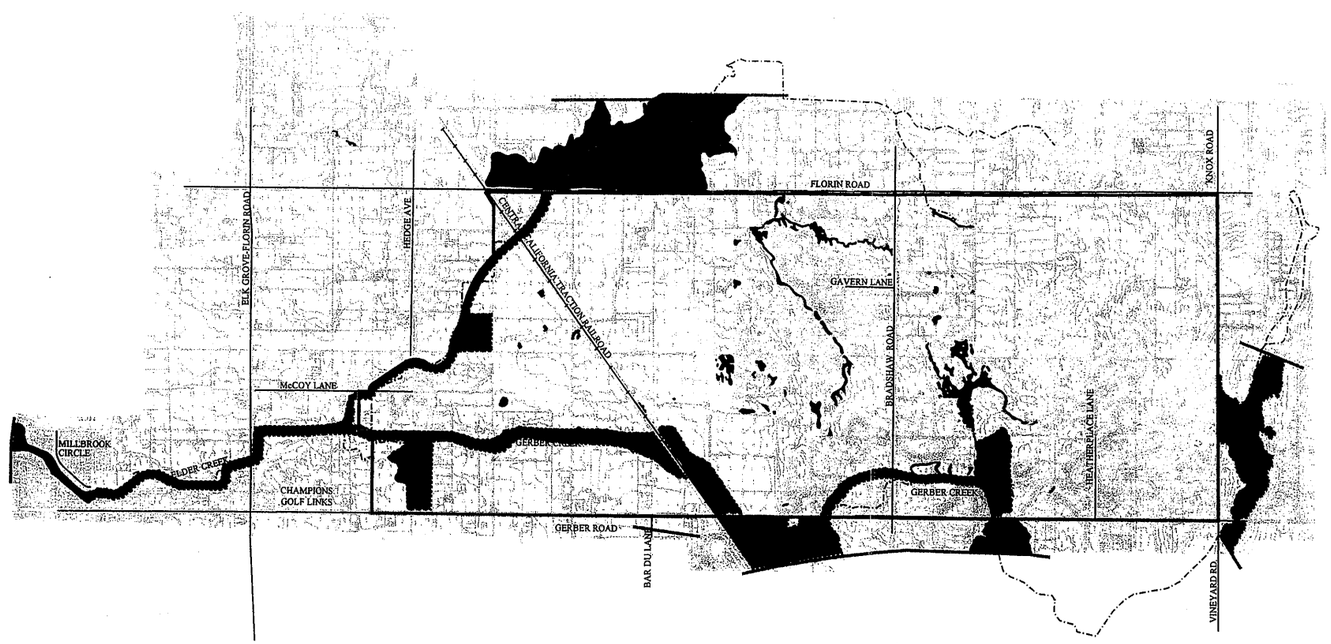


Plate DR -16
Phase 3 Residual 100-Year Floodplain



LEGEND

- 100-Year Floodplain (UNET Model)
- Vernal Pool
- Seasonal Wetland
- Stock Pond
- NVSSP Boundary
- Creek
- Major Road
- Railroad
- Limit of Floodplain Mapping

NOTE

The 100-year floodplain is based upon Stand-Alone Conditions.

SOURCE

The wetland delineation is based upon the "North Vineyard Station Specific Plan Technical Appendix: Biotic Resources," prepared by Sugnet and Associates Environmental Consultants, dated May 3, 1996.

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SCALE IN FEET

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NORTH VINEYARD STATION SPECIFIC PLAN
DRAINAGE MASTER PLAN
UPDATE AND PHASING

PHASE 3
RESIDUAL 100-YEAR FLOODPLAIN

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Plate DR -17
Elder Creek Maximum Water Surface Profile
Phase3

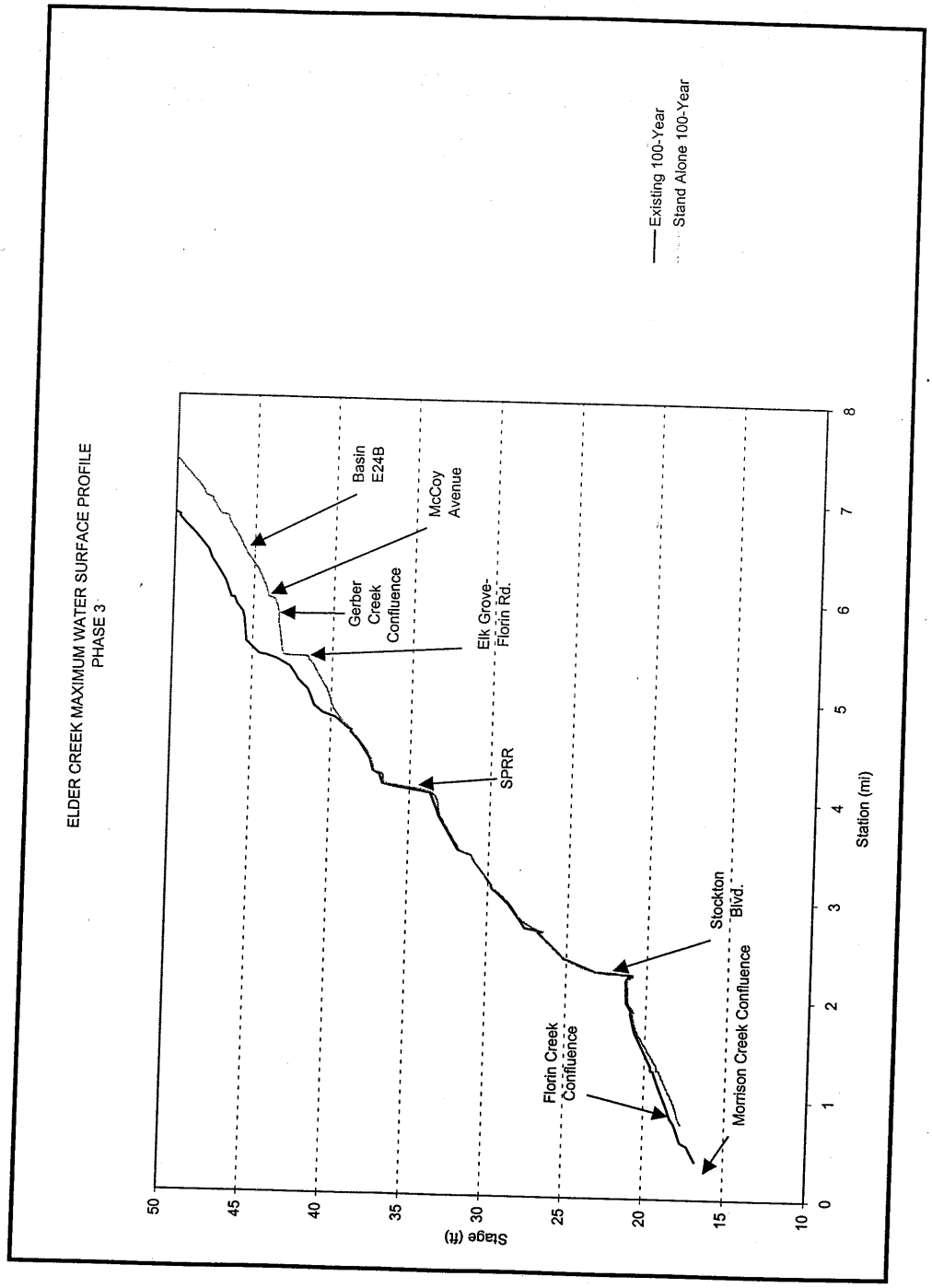

Table 14-1
Detention Basin Parameters
Stand-Alone Condition

Basin Parameters	Basin Name				
	E24A	E24B	E26	G41	G46
Basin Site (ac)	14	7.1	22	11	17
Basin Description	Online W.Q./ Combined F.C.	Online W.Q./ Combined F.C.	Online W.Q./F.C.	Online W.Q./ Combined F.C.	Online W.Q./ Combined F.C.
UNET Storage Area Number	11	6	5	10	8
Bottom Elevation	33.5	36	39.5	38.5	47.5
Maximum Side Slopes	4:1	4:1	4:1 and 3:1	4:1	4:1
Basin Equation	$4.84y + 0.487y^2$	$4.74y + 0.0925y^2$	$9.6y + 0.16y^2$	$5.46y + 0.389y^2$	$11.48y + 0.0028y^2$
Water Quality Volume (ac-ft)	7.2	2.3	17	8.7	17.1
Water Quality Pool Elevation	36.5	39	42.5	41.5	50.5
10-Year Flood Control Volume					
10-Year Pool Elevation	38.89	40.73	46.08	45.13	54.73
100-Year Flood Control Volume					
100-Year Pool Elevation	43.86	45.35	47.51	50.85	57.87
Total Weir Length (ft)	100	100	n/a	150	100
Segment 1 Weir Elevation and Length	100' @ 43.3	100'@43.5		150' @ 50.0	100' @ 56.2
Segment 2 Weir Elevation and Length					
Segment 3 Weir Elevation and Length					
Diameter of Outfall Pipe (in)	24	24	60	24	24

Table 14-2
Detention Basin Parameters
Ultimate Conditions

Basin Parameters	Basin Name				
	E24A	E24B	E26	G41	G46
Basin Site (ac)	14	7.1	22	11	17
Basin Description	Online W.Q./ Combined F.C.	Online W.Q./ Combined F.C.	Online W.Q./F.C.	Online W.Q./ Combined F.C.	Online W.Q./ Combined F.C.
UNET Storage Area Number	11	6	5	10	8
Bottom Elevation	33.5	36	39.5	38.5	47.5
Maximum Side Slopes	4:1	4:1	4:1 and 3:1	4:1	4:1
Basin Equation	$4.84y + 0.487y^2$	$4.74y + 0.0925y^2$	$9.6y + 0.16y^2$	$5.46y + 0.389y^2$	$11.48y + 0.0028y^2$
Water Quality Volume (ac-ft)	7.2	2.3	17	8.7	17.1
Water Quality Pool Elevation	36.5	39	42.5	41.5	50.5
10-Year Flood Control Volume					
10-Year Pool Elevation	38.89	40.73	46.08	45.13	54.73
100-Year Flood Control Volume					
100-Year Pool Elevation	41.91	44.44	46.83	47.73	56.67
Total Weir Length (ft)	50	100	n/a	150	100
Segment 1 Weir Elevation and Length	50' @ 41.0	100'@43.5		150' @ 48.0	100' @ 56.2
Segment 2 Weir Elevation and Length					
Segment 3 Weir Elevation and Length					
Diameter of Outfall Pipe (in)	24	24	60	24	24

IMPACTS AND ANALYSIS

The revised DMP concluded that Basin E20 was not needed to mitigate downstream impacts from development of the NVSSP area. From a technical standpoint, the entire NVSSP area could be developed implementing the concept of interim storm drainage pumping. Development can be phased with interim pumping, and meet the drainage and flood control objectives, policies and standards of Sacramento County. Impacts associated with drainage are less-than-significant.

MITIGATION MEASURES:

None required.

15 SUMMARY OF IMPACTS AND THEIR DISPOSITION

SIGNIFICANT EFFECTS WHICH CAN NOT BE AVOIDED WITH IMPLEMENTATION OF MITIGATION MEASURES

AIR QUALITY-- CONSTRUCTION-RELATED PARTICULATE EMISSIONS

Due to their size, the Vineyard Creek and Vineyard Point projects exceed the Sacramento Metropolitan Air Quality District's Thresholds of significance for construction emissions. Therefore, temporary construction-related air quality impacts are considered significant. Mitigation measures may reduce this impact but not likely to less-than-significant levels given the size of the developments.

SIGNIFICANT EFFECTS WHICH COULD BE AVOIDED WITH IMPLEMENTATION OF MITIGATION MEASURES

TRAFFIC AND CIRCULATION

PHASE 1A

Based on the roadway and intersection analysis, the addition of Phase 1A trips will cause or contribute to deficiencies at the following study locations under Year 2002 conditions:

STUDY ROADWAYS

- S. Watt Avenue – (North of SR 16);
- S. Watt Avenue – (SR 16 to Elder Creek Road);
- Elk Grove-Florin Road – (Florin Road to Gerber Road);
- Gerber Road – (Elk Grove-Florin Road to Bradshaw Road);

STUDY INTERSECTIONS

- SR 16/S. Watt Avenue;
- SR 16/Bradshaw Road; and
- Elder Creek Road/S. Watt Avenue

PHASE 1B

Based on the roadway and intersection analysis, the addition of Phase 1B trips will cause or contribute to deficiencies at the following study locations under Year 2005 conditions.

STUDY ROADWAYS

- None.

STUDY INTERSECTIONS

- SR 16/S. Watt Avenue;
- Florin Road/Excelsior Road; and
- Gerber Road/Excelsior Road.

YEAR 2010 CONDITIONS

The daily volumes were compared to the roadway capacity thresholds. The addition of project trips will result in a deficiency at the following study roadway segments.

- S. Watt Avenue (North of SR 16); and
- Elk Grove-Florin Road (Gerber Road to Calvine Road).

YEAR 2015 CONDITIONS

Based on the roadway and intersection analysis, buildout of the NVSSP will cause or contribute to deficiencies at the following study locations under Year 2015 conditions.

STUDY ROADWAYS

- Florin Road (West of S. Watt Avenue);
- Florin Road (S. Watt Avenue to Bradshaw Road);
- S. Watt Avenue (North of SR 16);
- S. Watt Avenue (SR 16 to Elder Creek Road);
- Elk Grove-Florin Road (Gerber Road to Calvine Road); and
- Bradshaw Road (Elder Creek Road to Florin Road).

STUDY INTERSECTIONS

- SR 16/S. Watt Avenue;
- SR 16/Bradshaw Road;
- Elder Creek Road/Bradshaw Road;
- Florin Road/Elk Grove-Florin Road; and
- Florin Road/Bradshaw Road.

NOISE IMPACTS ON PROPOSED LAND USES

The following are noise impacts of the proposed development projects. These impacts can be mitigated to less-than-significant through implementation of the mitigation measures outlined in the Noise section of this SEIR.

VINEYARD CREEK SUBDIVISION

Residences proposed nearest to Florin Road and Waterman Road would be exposed to future traffic noise levels that exceed the 60 dB L_{dn} Sacramento County Noise Element Standard. This impact is considered significant

VINEYARD POINT SUBDIVISION

Residences proposed nearest to Bradshaw Road and Gerber Road would be exposed to future traffic noise levels that exceed the 60 dB L_{dn} Sacramento County Noise Element Standard. This impact is considered significant.

WATER TREATMENT FACILITY AND WELL SITES

Based upon the noise level measurement data, the predicted noise level at the backyard of the nearest residence to the water treatment facility is 53 dB $L_{50.}$ This level exceeds the Sacramento County hourly noise criteria of 50 dB L_{50} for daytime noise and the 45 dB L_{50} criteria for nighttime noise. Since the booster pumps are expected to operate during the nighttime hours, it is recommended that noise control measures, which will reduce overall pump noise levels by a minimum of 8 dBA, be included in the project design.

The predicted un-muffled exhaust noise level with the emergency generator in operation is predicted to be 85 dBA at the backyard of the nearest residence. Assuming that the generator operates continually for one half of an hour while being exercised, the hourly L_{50} (sound level not to be exceeded 30 minutes of the hour) is 82 dBA. This level would exceed the daytime and nighttime noise level criteria of 50 dBA L_{50} and 45 dBA L_{50}, respectively.

The pump noise from the proposed remote well sites is expected to exceed Sacramento County hourly noise criteria of 50 dB L50 for daytime noise and 45 dB L50 for nighttime noise at the nearest residential properties. Implementation of recommended mitigation will reduce pump noise to meet County noise criteria.

BIOLOGICAL RESOURCES

WETLANDS

VINEYARD POINT SUBDIVISION

The proposed project will impact 9.02 acres of waters of the United States. The proposed mitigation will ensure that this impact is less-than-significant.

VINEYARD CREEK SUBDIVISION

The proposed project will impact 2.69 acres of waters of the United States. The proposed mitigation will ensure that this impact is less-than-significant.

DRAINAGE MASTER PLAN

The modified drainage corridors will result in 4.85 acres of creek (low-flow channel), 17.55 acres of channel bottom/wetlands and 3.23 acres of wetland/riparian benches. Post-project wetland/riparian habitat acreages will total 25.63 acres, a net gain of nearly 11.80 acres of habitat.

WATER TREATMENT FACILITY

The proposed project has the potential to impact Waters of the United States including vernal pools. The proposed mitigation will ensure that this impact is less-than-significant

VERNAL POOL SPECIES

VINEYARD POINT SUBDIVISION

Construction of the proposed project will remove 8.41 acres of vernal pools, habitat for the vernal pool fairy shrimp, vernal pool tadpole shrimp, and spadefoot toad. Removal of this habitat represents a significant impact.

VINEYARD CREEK SUBDIVISION

Construction of the proposed project will remove 1.49 acres of vernal pools, habitat for the vernal pool fairy shrimp, vernal pool tadpole shrimp, and spadefoot toad. Removal of this habitat represents a significant impact.

DRAINAGE MASTER PLAN

Construction of the proposed project will remove 1.08 acres of vernal pools, habitat for the vernal pool fairy shrimp, vernal pool tadpole shrimp, and spadefoot toad. Removal of this habitat represents a significant impact.

WATER TREATMENT FACILITY

Construction of the proposed project has the potential to impact vernal pools, habitat for the vernal pool fairy shrimp, vernal pool tadpole shrimp, and spadefoot toad. Removal of this habitat represents a significant impact.

SWAINSON'S HAWK

VINEYARD POINT SUBDIVISION

Project construction has the potential to disturb nesting activities of listed birds of prey. In addition, the proposed project will remove 179 acres of Swainson's Hawk foraging habitat upon completion. Impacts to Swainson's Hawk and other raptors are considered significant.

VINEYARD CREEK SUBDIVISION

Project construction has the potential to disturb nesting activities of listed birds of prey. In addition, the proposed project will remove 108 acres of Swainson's Hawk foraging habitat upon completion. Impacts to Swainson's Hawk and other raptors are considered significant.

DRAINAGE MASTER PLAN

Project construction has the potential to disturb nesting activities of listed birds of prey. Impacts to Swainson's Hawk and other raptors are considered potentially significant.

WATER TREATMENT FACILITY

Project construction has the potential to disturb nesting activities of listed birds of prey, and remove Swainson's hawk foraging habitat. Impacts to Swainson's Hawk and other raptors are considered potentially significant.

TRICOLORED BLACKBIRD

VINEYARD CREEK SUBDIVISION

During the April 2002 field assessment, a large tricolor blackbird colony of up to 500 pairs was nesting within the blackberry thicket along Elder Creek. Construction activities have the potential to disturb nesting activities and remove habitat. Impacts to Tricolor Blackbird are, therefore, potentially significant.

GIANT GARTER SNAKE & NORTHWESTERN POND TURTLE

VINEYARD POINT SUBDIVISION

The portion of Gerber Creek located within the project area represents potential habitat for the giant garter snake and the northwestern pond turtle. Construction of creek improvements and construction near ~~the~~ Gerber Creek could impact both GGS and northwestern pond turtle. Impacts to GGS and northwestern pond turtle are potentially significant.

VINEYARD CREEK SUBDIVISION

The portion of Elder Creek located within the project area and the portion of Gerber Creek located adjacent to the southeast corner of the project area, represent~~s~~ potential habitat for the giant garter snake and the northwestern pond turtle. Construction of creek improvements and construction near ~~the~~ Elder and Gerber Creeks could impact both GGS and northwestern pond turtle. Impacts to GGS and northwestern pond turtle are potentially significant.

DRAINAGE MASTER PLAN

The portions of Elder Creek and Gerber Creek located within the project area represent potential habitat for the giant garter snake and the northwestern pond turtle. Construction of creek improvements could impact both GGS and northwestern pond turtle. Impacts to GGS and northwestern pond turtle are potentially significant

CULTURAL RESOURCE IMPACTS

No sites or building were found to be eligible for inclusion in the National Register. No prehistoric, archaeological sites were encountered during the field investigation of the Survey Area. However, the lack of surface evidence does not preclude the existence of important, subsurface cultural materials. There is a potential to unearth buried cultural remains during future project construction activities. Caution should, therefore, be exercised during future development activities. Any accidental encounter~~ed~~ of previously unidentified cultural materials will require notification of the Department of Environmental Review and Assessment. If skeletal remains are encountered, both the Department of Environmental Review and Assessment and the County Coroner must be immediately notified. With the implementation of the mitigation proposed in the prior EIR, however, these potential impacts to cultural resources in the Vineyard Creek subdivision are considered less than significant.

EFFECTS FOUND NOT TO BE SIGNIFICANT

LAND USE

The proposed developments are generally consistent with the General Plan, North Vineyard Station Specific Plan, and the Sacramento County Zoning Code. The proposed amendments to the Specific Plan are in response to a need throughout the unincorporated County for affordable housing. The number of potential additional units that may be developed in the Plan area as a result of these changes represents only a small overall increase in the total number of units within the NVSSP.

PUBLIC SERVICES

The increased demands created by the project on the following services can be accommodated through compliance with requirements of the service agencies and no significant environmental impacts are expected.

WATER SUPPLY

The prior EIR concluded that implementation of the North Vineyard Station Specific Plan Water Master Plan would result in less than significant water supply impacts. However, the implementation of the NVSSP Water Master Plan was contingent on the implementation of the Water Master Plan for Areas Adjacent to the Zone 40 Water Supply Master Plan Update's Study Area, as well as fulfillment of the City of Sacramento American River Place of Use. Until all agreement are in place to wheel "firm" surface water supplies to the Specific Plan area, the project will contribute to the incremental decline in ground water levels. This incremental decline and the dewatering of private wells is a regional issue, beyond the scope of the proposed project. However, the project would add to the significant adverse cumulative impacts that regional development has on ground water supplies. Compliance with the requirements of the Sacramento County Water Agency will ensure that impacts are less-than-significant.

SEWER SERVICE

The revised sewer study does not include the proposed water treatment facility, which has the potential to contribute a significant amount of effluent into the sewer system. In addition, the proposed increased development densities anticipated from the density bonus program will also result in incremental increases in effluent generation from the Plan area. The County Sanitation District-1 (CSD-1) staff has indicated the increased flows will necessitate revised sewer studies and the planned sizing of the Gerber Road Trunk would have to be increased. Since the Gerber Road Trunk sewer line has yet to be constructed, these necessary adjustments can be made and the impact of the increased flows is expected to be less than significant. The Gerber Trunk will tie into the Bradshaw 6A and 6B Interceptors, and the Central Interceptor further downstream, where there will be adequate capacity ~~in~~ to handle the increased flows from the water

treatment facility and the expected small to moderate increases in flows from additional dwelling units ~~through~~ associated with the density bonus program.

CSD-1 indicated that the revised sewer study need not be included in this Draft EIR, but would be required prior to installation of the Gerber Road Trunk (pers. comm., Matt Morgan, CSD-1, June 15, 2004). Because potential impacts from the water treatment facility on the Gerber Road Trunk will be evaluated prior to installation of the trunk line and sized appropriately, lack of sewer capacity should not be an impediment to future development. Therefore impacts associated with sewer service are considered less-than-significant.

Drainage and Hydrology

The revised DMP concluded that Basin E20 was not needed to mitigate downstream impacts from development of the NVSSP area. From a technical standpoint, the entire NVSSP area could be developed implementing the concept of interim storm drainage pumping. Development can be phased with interim pumping, and meet the drainage and flood control objectives, policies and standards of Sacramento County. Impacts associated with drainage are less-than-significant.

Irreversible Environmental Changes

The project will result in the irreversible loss of agricultural-residential designated properties and the loss of a rural lifestyle. Once land is converted to a higher density urban uses and infrastructure is in place, it is highly unlikely that the land would revert back to rural uses. The commitment to urban uses will be permanent.

Cumulative Impacts

Cumulative impacts of the project were fully analyzed throughout this document along with project-specific, singularly significant impacts.

Growth Inducing Impacts

There may be some growth inducing potential associated with the project in that extension and upgrade of urban infrastructures and services will facilitate development of surrounding properties. However, the Plan Area and most of its surrounding lands were committed to urbanization with the adoption of the 1993 General Plan. The Plan Area interfaces to the northeast and east represent the most potential for land use compatibility concerns and thus, the greatest potential for growth inducement would be

in those same directions. Those potentially affected lands are shown on the General Plan Land Use Diagram for non-urban land uses: Recreation (along the creek), Agricultural Urban Reserve, General Agriculture and Agricultural Residential. These lands are outside the Urban Policy Area, which is defined in the General Plan as that "area expected to receive urban levels of public infrastructure and services within the 20-year planning period." By virtue of being outside the Urban Policy Area, the General Plan policies would not support near term urbanization of those lands. Furthermore, there are lands contiguous to the Plan Area that are within the designated growth area that would be given much higher priority for accommodating growth needs before any additional lands outside the Urban Policy Area are committed for urbanization. For these reasons, the growth inducing potential of the project on lands not otherwise designated for urbanization during the next 20 years is considered less than significant.

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PERSONAL COMMUNICATIONS -

Morgan, Matt. County Sanitation District 1. Telephone conversation, May 2003.

17 COMMENTS AND RESPONSES

The following text introduces each Draft EIR reviewer, and paraphrases his or her comment. Responses to those comments immediately follow. Comment letters in their entirety are included at the back of this chapter.

Opportunity for oral comments was presented at the Project Planning Commission on August 24, 2004, however, no comments on the Draft EIR were received.

Letters Received:

1. Southgate Recreation and Park District
2. California Department of Transportation (e-mail from Ken Champion)
3. California Department of Transportation (letter from Katherine Eastham)
4. Sacramento Metropolitan Air Quality Management District
5. Sacramento County Department of Water Resources
6. Elk Grove Unified School District
7. County Sanitation District 1
8. California Public Utilities Commission
9. Sacramento County Department of Transportation
10. Sacramento County Municipal Services Agency, Infrastructure Finance Section

LETTER 1

Comments from Southgate Recreation and Parks District

COMMENT:

The letter asserts that a more detailed description of the multi-use trail system, and other potential recreation facilities within the drainage parkway, is needed to fully evaluate environmental impacts associated with these facilities. This description would include showing exact locations of the trail, timing of improvements, developer responsibilities in constructing these improvements, requirements for areas outside the NVSSP, and the amount of funding required to construct these improvements.

Response:

The EIR considers impacts within the footprint of the Drainage Master Plan. The multi-use trail is an element of the Drainage Master Plan within this footprint, and, therefore, impacts associated with the trail are considered in all discussions pertaining to the Drainage Master Plan. Page 7-9 of the Draft EIR states:

> "Improvements, such as trail alignment and landscaping, associated with the Drainage Parkway are considered to be an element of the overall Drainage Master Plan. Impacts associated with these recreational improvements are considered in the context of evaluating the DMP."

The Financing Plan costs are projections of what improvements may cost at the time of construction. Updates to the Plan regarding these costs will be ongoing.

Coordination with adjacent Plan Areas in design of the trail system is important in order to maintain consistency of the facility throughout the Drainage Parkway. However, it is outside the scope of the EIR to place restrictions and/or requirements on land outside the NVSSP. This type of coordination is ultimately a planning issue to be addressed in the development of these adjacent Plan Areas.

LETTER 2 AND 3

Comments from the California State Department of Transportation

The following responses to comments were provided by the Sacramento County Department of Transportation (Clark):

Comment 1:

Can improvements be implemented which would raise the Level of Service (LOS) at the Watt Avenue and Bradshaw Road intersections of SR16 to LOS D?

Response 1:

Evaluation of other Public Facility Financing Plans revealed that the Sunridge Public Facility Financing Plan includes improvements at the State Route 16 and Bradshaw Road intersection. The proposed improvements are expansion of the intersection to accommodate two left turn lanes, two through lanes and one right turn lane on all approaches. It is likely that right-of-way will need to be acquired to provide the proposed improvements. The improvement is included in Phase 1 on the Sunridge Public Facility Financing Plan, which would mean that the improvement would be constructed in the next 5 years. With those improvements, the intersection level of service would improve to LOS D in the a.m. peak hour and LOS C in the p.m. peak hour, with build out of Phase 1A of the North Vineyard Station Specific Plan.

Subsequent to the publishing of the traffic analysis, the County of Sacramento moved forward a project to widen South Watt Avenue from State Route 16 to Kiefer Boulevard to five lanes. The project includes the State Route 16 and South Watt Avenue intersection. The intersection improvement includes an additional left turn lane and through lane on the southbound approach and one new left turn lane and two new through lanes on the northbound approach. The improvement is planned to be completed by 2006. With those improvements and Mitigation Measure TC-8, an additional through lane on the eastbound and westbound approaches, the intersection level of service3 would improve to LOS C in both the a.m. and p.m. peak hours, with build out of Phase 1A and 1B of the North Vineyard Station Specific Plan.

Comment 2:

Does the Sacramento County General Plan show the future outlook for SR16 through this area to eventually become a six-lane roadway facility with 6x6 type intersections? Shouldn't the County participate in an assessment to consider the feasibility of larger intersection configurations, similar to those at Watt Avenue and Fair Oaks Boulevard?

Response 2:

South Watt Avenue, Bradshaw Road and State Route 16 are shown as 6-lane thoroughfares in the Sacramento County General Plan. The intersections of State Route 16 and South Watt Avenue and State Route 16 and Bradshaw Road would be 6x6 intersections. According to the Sacramento County Standard Plans, a 6x6 intersection includes two left turn lanes, three through lanes and one right turn lane on each approach. The intent of the County of Sacramento would be to acquire right-of-way and install roadway improvements consistent with standards.

Comment 3:

The State standard for intersection LOS is LOS D. Mitigation Measures TC-6 and TC-8 appear to be inadequate, as they do not improve LOS at the Bradshaw Road/SR-16 and Watt Avenue/SR-16 intersections to LOS D.

Response 3:

See Response 1 above.

Comment 4:

Does sufficient right-of-way exist at the Watt Avenue/SR-16 and Bradshaw Road/SR-16 intersections for additional improvements beyond the TC-6 and TC-8 mitigation?

Response 4:

Sufficient right-of-way does not currently exist to implement full 6x6 standards at either the State Route 16 and South Watt Avenue and State Route 16 and Bradshaw Road intersections.

LETTER 4

Comments from the Sacramento Metropolitan Air Quality Management District

Comment 1:

There is no discussion or provision of funding for a Transportation Management Association as indicated in Mitigation Measure AQ-5, #8.

Response 1:

See Letter #10 from the County Municipal Services Agency, Infrastructure Finance Section. A condition of approval has been suggested to fund a County Service Area (CSA), or equivalent financing mechanism for the purpose of funding a variety of transportation demand management (TDM) services to implement an overall TDM strategy that will contribute to the goal of reducing vehicle trips. This condition has been included in the “Requests/Requirements of Other Agencies” section of this EIR.

LETTER 5

Comments from Sacramento County Department of Water Resources

Comment 1:

More detailed information about the Freeport Regional Water Project may be needed due to the size of the FRWP facilities within the NVSSP area.

Response 2:

The purpose of this section of the EIR is to identify the potential sources of water for the NVSSP. The EIR need not discuss in detail the specifics of pipe routes and sizes in order to convey this.

Comment 2:

Change the “Max Day Analysis” section on page 13-11 to the language in the attached document.

Response 2:

The requested edits have been made.

LETTER 6

Comments from the Elk Grove Unified School District

Comment:

The District is investigating a site on the south side of Florin Road and the future extension of Vineyard Road as a possible school site. If the site is pursued, there will be a displacement of 80 – 240 residential housing units.

Response:

Comment noted and forwarded to the Board of Supervisors via this Final EIR.

LETTER 7

Comments from County Sanitation District 1

Comment :

CSD-1 shall require an approved sewer study prior to the approval of the Final Maps or submittal of the improvement plans for plan check to CSD-1, whichever comes first. Sewer studies shall reflect the increase in residential zoning and the addition of the Water Treatment Facility.

Response:

This requirement is acknowledged on page 14-9 of the Sewer Service chapter of this EIR.

LETTER 8

Comments from the California Public Utilities Commission

Comment:

Consider safety issues when designing roadways and housing units near at-grade rail crossings.

Response:

Comment noted and forwarded via this Final EIR.

LETTER 9

Comments from Sacramento County Department of Transportation

Comment 1:

Correct Tables 8-4, 8-7, 8-9, 8-11, 8-14, 8-15 and 8-17 to show only LOS F facilities in boldface type.

Response 2:

The requested edits have been made.

LETTER 10

Comments from the County Municipal Services Agency, Infrastructure Finance Section

Comment:

Add the condition contained in the letter to the conditions of approval for the project.

Response:

The condition has been added to the “Requests/Requirements of Other Agencies” section of this Final EIR.

Letter 1

RECEIVED
AUG 20 2004
DEPARTMENT OF ENVIRONMENTAL
REVIEW AND ASSESSMENT

August 18, 2004

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County of Sacramento
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Rod Cooper

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Ward Winchell

RE: Draft Supplemental Environmental Impact Report for North Vineyard Station Specific Plan Amendment, Financing Plan, Water Treatment Facilities, and Associated Vineyard Point Rezone, Vesting Tentative Subdivision Map, Large Lot Tentative Subdivision Map and Special Development Permit; and Vineyard Creek Rezone, Vesting Tentative Subdivision Map and Large Lot Tentative Subdivision Map (Control Numbers: 03-CPB-0082, 02-PWE-0532, 04-PWE-0144, 02-RZB-SDB-SVB-0293, 03-RZB-SVB-0385)

Dear Joyce;

Southgate Recreation and Park District (District) would like to thank the Sacramento County DERA for the opportunity to comment on the above referenced Draft Supplemental EIR. Please continue to forward documentation related to these projects and the North Vineyard Station Specific Plan to the District. The District has prepared and submits the following comments respective to the above Draft Supplemental EIR and requests answers to questions raised, inclusion of additional language where indicated and the implementation of mitigation measures where significant impacts would occur to District resources.

The Draft Supplemental EIR omits a comprehensive discussion of the master-planned, multi-use, recreational trail system that affects each geographic entity of the subject document: North Vineyard Station, Vineyard Point, and Vineyard Creek. Particularly, the discussion of the Drainage Master Plan omits references to the trail system and its intended dual use for both drainage management and recreational uses, (e.g., usage of the detention basins for passive recreation). These omissions should be corrected; following are examples of where changes should be made.

Additionally, all figures should illustrate the continuation of Elder Creek beyond Elk Grove-Florin Road to the west because its omission inaccurately represents current and future drainage/trail needs. Similarly, all figures should illustrate the continuation of Gerber Creek south of Gerber Road for the same reasons.

The Draft Supplement EIR should state that all drainage system upgrades are to be accompanied by concomitant trail system improvements;[1] there are a number of instances in the Draft Supplemental EIR where the two should be referenced simultaneously. These are also described below.

Section 2 Executive Summary and Mitigation Measures

- Consistent with the District's request that developers provide landscaped access to the trail system from the Central California Traction Railroad Corridor should it be abandoned and deemed eligible for recreational use in the future (page 2-33), the Draft Supplemental EIR should state that the land use prescriptions of the pending Florin-Vineyard GAP Plan area should also require compatible trail alignments and linkages in the future since these are related projects that may have significant effects upon both the drainage and recreational functions of the trail system.

Section 3 Project Characteristics

- The Drainage Master Plan is first described on page 11-24 of Section 11, Biological Resources, where it discusses the delineation of wetlands, vernal pools, and special status species identified in the area of the Drainage Master Plan. Because the Master Plan is treated

[1] Cooper, Rod. 2004a. "Response to Notice of Preparation of the North Vineyard Station Specific Plan Amendment, Financing Plan, Water Treatment Facilities and Associated Vineyard Point Rezone, Vesting Tentative Subdivision Map, Large Lot Tentative Subdivision Map and Special Development Permit; and Vineyard Creek Rezone, Vesting Tentative Subdivision Map and Large Lot Tentative Subdivision Map," transmitted to Ms. Joyce Horizumi, Environmental Coordinator, County of Sacramento Department of Environmental Review and Assessment, 827 Seventh Street, Room 220, Sacramento, CA, April 20, 2004.

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separately and because it concerns Section 15, Drainage and Hydrology, as well as recreational open space via the master-planned, multi-purpose trail system, it should more clearly cross-reference the Project Description (page 3-1) and Section 15 (page 15-1) and/or be enveloped succinctly within a separate "Drainage Master Plan and Multi-Purpose Trail System" section.

- Many of the exhibits only reference a "drainage channel," which misrepresents the nature of the multi-use recreational trail system. Mention the Drainage Master Plan and master-planned, multi-use trail system as a project element in the Project Description (page 3-1).

- Under the "Specific Plan Amendment" section, add the following after the first sentence: "Although these proposed changes are internal modifications, they have important external effects because of the trail system, which relies upon successful implementation of similar alignments and improvements outside the Specific Plan Area in neighboring jurisdictions."

- Plate A, *Specific Plan Amendment,* on page 3-3, should be revised to clearly show the planned trails with appropriate reference in the land use legend.

- Plate B, *Conceptual Layout—Water Treatment Plan,* on page 3-7, should reference the dual nature of the "drainage channel" as part of the trail system in its vicinity map.

- Plate C, *Water Treatment Facilities—Alternate 1*, on page 3-8, should reference the dual nature of the "drainage channel" as part of the trail system in its vicinity map and on the large-scale Exhibit C-2.

- Plate E, *Location Layout Map*, on page 3-10, should also include a representation of the trail system in both the vicinity map and Exhibit D.

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- On page 3-11, mention trail improvements as distinct from the references to "O recreation" and "detention basin" sites and "landscape corridor" and "drainage channel" lots.

- Under the "Environmental Setting" section on page 3-19 to 3-20 at the bottom of the page that discusses Elder and Gerber Creeks and their watersheds, insert a sentence providing an overview of the master-planned, multi-use trail system. The occurrence of the 100-year floodplain should also be emphasized here to underscore the importance of the trail system and its relation to the Drainage Master Plan.

Section 5 Land Use

- Under the discussion of open space policies in relation to the North Vineyard Station Specific Plan, add a sentence regarding the master-planned, multi-purpose trail system and the need for simultaneous improvement of the trail system with the drainage amenities at the top of page 5-8, where the reference currently is to "a park, drainage parkway, and storm water detention." Also, mention that consistency with the pending Florin-Vineyard GAP Community Plan is critical since this is a related project that affects the drainage and recreation functions of the multi-use trail system.

Section 6 Public Facilities Financing Plan

- The discussion of the backbone infrastructure and public facilities summary describes "drainage backbone infrastructure costs including ROW acquisition;" the trail system should be referenced here as well as detention basin construction and improvement costs. Southgate will be including the landscape improvement costs only, in the "Park and Recreation Facility" component of the financing plan.

- Plate PF-1, *North Vineyard Station Specific Plan Development Phasing*, on page 6-3, misrepresents the creeks and omits the trail system; Elder Creek appears inaccurately broken. Plate PF-1 should be

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amended to show the effects of the phases of development on the drainage/recreation land uses.

- In Table 6-2, *North Vineyard Station Phasing Summary*, on page 6-6, drainage improvements are discussed for Elder and Gerber Creeks, particularly the construction of detention basins. A reference to their recreational functions as well as their linkages to the trail system should be made here.

- The "Parks and Recreation" section, which begins on page 6-20, does not include accurate, up-to-date information. In particular, the following changes are recommended:

    - From the second sentence, delete "one regional park" since no regional parks are planned.
    - Insert "two community parks" in the second sentence.
    - Change "six neighborhood parks" to "five neighborhood parks in the second sentence."
    - Change "The total cost of parks is estimated to be $12.2 million" to "The total cost of parks and trails are projected to be more than $17 million" in the first sentence of the second paragraph. Add: "Detention basin landscape improvements will be added as an additional section to the Park Facility Improvements. These improvement costs are roughly estimated to be $1.25 million."

- Under the "Parks and Recreation" section on page 6-20, insert a reference to the master-planned, multi-use trail system to supplement the reference to the "joint use trail system" at the end of the section on page 6-21.

- Insert the following on page 6-21:

    "Planned Park related improvements for the North Vineyard Station Specific Plan area include:"

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- Vineyard Creek. In addition to including the following information in the "Parks and Recreation" section, include it or a synopsis of it on pages 7-16 to 7-20:

  - *Description*: The approximately 14-acre community park will include a variety of athletic fields such as soccer (youth and adult), youth baseball with possible overlap of the softball fields. Additional facilities would include tennis courts (at least 4), basketball courts (half or full size), parking lot(s), permanent restrooms, three covered group picnic areas, and two playgrounds. It is important to note that some of the athletic fields and the tennis courts will include sports lighting for use after dark. The community park is located adjacent to the Elder Creek Drainage and Open Space corridor. This park site will be integrated with the detention basin to the north and the open space corridor to the west.

  - *Multi-Use Trails*: The District has master planned a regional multi-use trail system that will run along Elder Creek to the north (adjacent to the detention basin), west and south of this park site, connecting to the Gerber Creek Regional Trail system. The trail system will be improved at the same time the drainage corridor improvements are constructed. The trail will have several points of connection to the park and the detention basin. The multi-use trail shall be approximately 20 feet in width. This will accommodate a 12-foot paved trail with 2-foot decomposed granite shoulders on each side, and an additional 4-foot, blade-graded trail for horses.

  - *Park*: This community park will serve as an athletic field complex to accommodate a variety of athletic fields, including youth and adult soccer and youth baseball

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with a possible overlap of softball fields. Additional facilities would include tennis courts (at least 4), basketball courts (half or full size), parking lot(s), permanent restrooms, three covered group picnic areas, and two playgrounds. It is important to note that some of the athletic fields and the tennis courts will include sports lighting for use after dark. Typically, the park would remain open for activities at these facilities until 10:00 p.m. Restrooms and parking lot(s) would also have lights. It is anticipated that during periods of games and tournaments the park would attract many users, which would add to the traffic on the frontage streets and increased noise. Typically, community parks attract users from outside the immediate neighborhood because they are larger in size and can accommodate multiple uses for different large groups at the same time.

- *Detention Basin*: In addition to the water retention and quality features typical of these basins, landscape improvements will be made to accommodate passive recreational use (i.e., walking, observing nature, etc.). Proposed improvements for this basin would, at a minimum, include paved trail around the perimeter, benches, landscaping, irrigation, and possibly, security lighting.

- Vineyard Point. In addition to including the following information in the "Parks and Recreation" section, include it or a synopsis of it on pages 7-16 to 7-20:

  - *Description*: The approximately 14-acre community park is the future site of the North Vineyard Station Community Center (approximately 10,000 to 15,000 square feet). Additional facilities planned for this park site include soccer fields (youth and adult), a youth

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baseball field, basketball courts (half or full size), multiple covered picnic areas, two playgrounds and a permanent restroom. There will also be a separate parking lot for users of the facilities. It is anticipated that some of the athletic facilities will be lit to accommodate evening use. This park site is adjacent to a future elementary school to the east. The community park is situated to have access to the detention basin, just south of the water treatment facility. This combination of facilities will allow continuous pedestrian and bicycle access from the community park to the north, proceeding south to the improved detention basin, and ultimately culminating at the Gerber Creek drainage and open space corridor accessing the regional multi-use trail system.

- *Multi-Use Trails*: The District has master planned a regional multi-use trail system that will run along Elder Creek and Gerber Creeks. This subdivision will have access to the Gerber Creek portion of the drainage/open space corridor. The trail system will be improved at the same time the drainage corridor improvements are constructed. Portions of the trail will run along the California Central Traction Railroad. The multi-use trail shall be approximately 20 feet in width. This will accommodate a 12-foot paved trail with 2-foot decomposed granite shoulders on each side and an additional 4-foot, blade-graded trail for horses.

- *Park*: This community park will serve as the site for the North Vineyard Station Community Center and will also accommodate a variety of athletic fields, including soccer fields (youth and adult), a youth baseball field, basketball courts (half or full size), multiple covered picnic areas, two playgrounds and a permanent restroom. It is important to note that some of the

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athletic fields and the tennis courts will include sports lighting for use after dark. Typically, the park would remain open for activities at these facilities until 10:00 p.m. Restrooms and parking lot(s) would also have lights. It is anticipated that during periods of games and tournaments the park would attract many users, adding to the traffic on the frontage streets and increased noise. Typically, community parks attract users from outside the immediate neighborhood because they are larger in size and can accommodate multiple uses for different large groups at the same time. Additionally, due to the proximity of this park site to the adjacent future elementary school, use by the school is expected not only during but after school hours as well.

- *Detention Basin*: In addition to the water retention and quality features typical of these basins, landscape improvements will be made to accommodate passive recreational use (i.e., walking, observing nature, etc.). Proposed improvements for this basin would, at a minimum, include paved trail around the perimeter, benches, landscaping, irrigation, and possibly, security lighting.

Section 7 Public Services

- Include a "Drainage Master Plan and Multi-Use Trail System" bullet (page 7-9) that specifically describes the interrelated nature of the Drainage Master Plan and the trail system. Add a bullet above the final three paragraphs (and below the bullet on "Water Treatment Plant Impacts"), which discusses the trail system and future development.

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- In pages 7-16 to 7-20, include planned park, trail, and detention basin descriptions for Vineyard Creek and Vineyard Point from page 6-21, as referenced above in the "Parks and Recreation" section.

- Consistent with the District's request that developers provide landscaped access to the trail system from the Central California Traction Railroad Corridor should it be abandoned and deemed eligible for recreational use in the future (page 7-18), also state here that the land use prescriptions of the pending Florin-Vineyard GAP Plan area also require compatible trail alignments and linkages in the future since these are related projects that may have significant effects upon both the drainage and recreational functions of the trail system.

- Mention the relationship between the Gerber Creek trail and the Drainage Master Plan in subsection (n) on page 7-22.

Section 8 Traffic and Circulation

- The master-planned, multi-use trail system should be adequately represented on Plate TC-5, *North Vineyard Station Land Use Diagram—Phase 1A,* on page 8-13; Plate TC-12, *North Station Land Use Diagram—Phase 1B,* on page 8-30; and Plate TC-21, *North Vineyard Station Land Use Diagram Buildout Conditions,* on page 8-52. In their current forms, the maps misrepresent the trail system and do not refer to them in the respective legends.

Section 11 Biological Resources

- If the Drainage Master Plan and master-planned, multi-purpose trail system are being implemented as part of the U.S. Army Corps permit process for the areas referenced on pages 11-2, 11-6, 11-9 (for Vineyard Point), and/or 11-18 (for Vineyard Creek), then they should be mentioned concurrently.

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- Page 11-11 references the potential impact on habitat for the giant garter snake and northwestern pond turtle during construction of creek improvements at and around Gerber Creek. If this is related to the planned drainage and recreational improvements as part of the Drainage Master Plan and/or the master-planned, multi-purpose trail system, it should be mentioned here.

- Page 11-23 references the potential impact on habitat for the tricolor blackbird, giant garter snake, and northwestern pond turtle during construction of creek improvements at and around Elder Creek. If this is related to the planned drainage and recreational improvements as part of the Drainage Master Plan and/or the master-planned, multi-purpose trail system, it should be mentioned here.

- The references to species impact should be linked with those that are discussed in the subsequent (but separate) Drainage Master Plan (page 11-24):

- Insert description of trail system from subsection (m) on page 7-19, and insert the following from Cooper 2004a: "the District and the County of Sacramento have agreed that Detention Basins and Water Quality Basins can and should have a recreational value and use for the benefit of community. 'Decorating' the detention and/or water quality basins with native plantings...". (p. 3)

- The trail system should be mentioned in the discussion of the Drainage Master Plan, specifically on pages 11-24 as mentioned above, and where discussion of the U.S. Army Corps of Engineers permit requirements are referenced on page 11-31. The requirement for developers to guarantee accurate trail alignments should be suggested as a mitigation measure on page 11-31.

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Section 15 Drainage and Hydrology

- On page 15-1, the master-planned, multi-purpose trail system should be mentioned as part of the project description and the subsequent "Synopsis of the NVSSP DMP" on pages 15-2 to 15-3.

  Specifically, it is appropriate to mention the requirement that all drainage upgrades be accompanied by trail system improvements and that developers be required to ensure that the upgrades that take place outside the jurisdiction of the subject plan and map areas are required to be consistent. The requirement to ensure development of detention basins for dual-use purposes should be mentioned here as well.

- Clarification is necessary in the first paragraph to indicate that trail improvements will be constructed at the same time as drainage improvements. The method of funding the trail improvements should also be clarified (i.e., from the Recreation and Park component versus the Drainage Capital Improvement Program).

- The existing and planned trail system should be made explicit on the map and in the legend of Plate DR-1, *Elder and Gerber Creeks Subbasin Map,* on page 15-6 and amended for accuracy on Plate DR-2, *Ultimate Land Use*, on page 15-7.

- Plate DR-3, *Preferred Drainage Plan,* on page 15-8, references the related project areas west of Elk Grove-Florin Road and south of Gerber Road. This figure should be referenced in the textual description of the interconnected nature of the Drainage Master Plan and Trail System and specifically in regard to requiring developers to extend drainage/recreation improvements west/beyond the boundaries of the subject plan and map areas.

- Trail system development plans should be included in the textual discussion and graphical depiction of the drainage development phasing (Phase 1A, 1B, 1C, 2, and 3) on pages 15-14 to 15-28,

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especially in regard to plans for detention basins. On page 15-12, note that some, if not all, of the detention basins will have passive recreation uses for public access (e.g., walking, etc.). If specific project information is not currently available, then placeholder language should be inserted that requires consultation with and adherence to the master-planned, multi-purpose trail system prescriptions, as well as the relevant neighboring jurisdiction plans (e.g., the Florin-Vineyard GAP Community Plan area). For example, Drainage Master Plan prescriptions should also include information concerning the acquisition of adequate open space and trailways for Elder Creek (that extend west to Elk Grove-Florin Road) that are consistent with the (pending update) Florin-Vineyard GAP Community Plan. Also, within the Florin-Vineyard GAP Community Plan area, the channel improvements should be prescribed with respect to open space corridor preservation and drainage.

- Plate DR-5, *Detention Basin Cross Section,* on page 15-16, should be revised to include the walking trail and any other elements of the existing or planned trail system.

- A figure depicting the overlay of the existing and planned trail system on the Drainage Master Plan should be included between pages 15-15 and 15-16.

- Another related project that should be included here in the discussion of trail and drainage system consistency is the Upper Laguna Creek Collaborative (ULCC), which is intended to "coordinate all projects and explore the development of a comprehensive, combined application for the requisite environmental permits for all public works projects along Laguna Creek that would address the needs of all agencies, interested private groups, the general public and the environment concurrently" with the goal of allowing for the development of a multi-use corridor that shall provide sufficient drainage especially during times of flooding, improving water quality by using constructed wetlands to treat urban runoff prior to its discharge into the creek channel, creating a space for the future

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sewer interceptor, providing a recreational trail for public use, and providing buffers and preserving habitat that supports native plant and animal species, while creating a scenic open space corridor that will be maintained and preserved in perpetuity.[2]

Once again the District would like to thank the Sacramento County DERA for the opportunity to comment on the North Vineyard Station Specific Plan Amendment, and the Vineyard Point and Vineyard Creek Vesting Tentative Subdivision Maps Draft Supplemental EIR. Please continue to forward information and documentation related to this plan and respective plan projects to the District. If you require additional information or assistance please do not hesitate to contact Judy Robinson, Planning & Facilities Manager, at 428-1171 ext. 14.

Sincerely,

Ward Winchell
Interim General Manager

[2] Cooper, Rod. 2004b. Attachments to "Notice of Preparation of a Draft Environmental Impact Report for the Bradshaw Christian High School-Comments", transmitted to Ms. Joyce Horizumi, Environmental Coordinator, County of Sacramento Department of Environmental Review and Assessment, 827 Seventh Street, Room 220, Sacramento, CA, July 20, 2004.

14

SOUTHGATE
RECREATION & PARK DISTRICT

Sheldon
Administrative Headquarters
6000 Orange Avenue
Sacramento, CA 95823-3225
Phone 916-428-1171
Facsimile 916-428-7334
www.southgaterecandpark.net

Board of Directors
Rolfe P. Appel
John E. Cockerham
Edwin A. Smith
Christine Thompson
Shirley J. Wirth

General Manager
Rod Cooper

Assistant General Manager
Ward Winchell

RESOLUTION 04-21

RESOLUTION OF THE BOARD OF DIRECTORS OF THE SOUTHGATE RECREATION AND PARK DISTRICT COMMENTING ON THE **DRAFT SUPPLEMENTAL ENVIRONMENTAL IMPACT REPORT** FOR THE NORTH VINEYARD STATION SPECIFIC PLAN AMENDMENT, FINANCING PLAN, WATER TREATMENT FACILITIES AND ASSOCIATED VINEYARD POINTE REZONE, VESTING TENTATIVE SUBDIVISION MAP, LARGE LOT TENTATIVE SUBDIVISION MAP AND SPECIAL DEVELOPMENT PERMIT; AND VINEYARD CREEK REZONE, VESTING TENTATIVE SUBDIVISION MAP AND LARGE LOT SUBDIVISION MAP

WHEREAS, the District is in receipt of a Draft Supplemental Environmental Impact Report for the North Vineyard Station Specific Plan Amendment, Financing Plan, Water Treatment Facilities and Associated Vineyard Pointe Rezone, Vesting Tentative Subdivision Map, Large Lot Tentative Subdivision Map and Special Development Permit; and Vineyard Creek Rezone, Vesting Tentative Subdivision Map and Large Lot Tentative Subdivision Map; and

WHEREAS, the North Vineyard Station Specific Plan Area runs through the central portion of the Southgate Recreation and Park District potentially impacting District parks, landscape corridors and recreational facilities; and

WHEREAS, the Board of Directors has previously commented on the Notice of Preparation through Resolution 03-153 adopted April 20, 2004; and

WHEREAS, the Board of Directors has also previously commented on proposed projects within the North Vineyard Station Specific Plan area inclusive of Resolutions 03-17 and 03-120 for Vineyard Creek and Resolutions 02-32, 02-79 and 03-98 for Vineyard Pointe; and

WHEREAS, there could be significant impacts to the value of parks, recreation and open space in the existing and future recreational facilities in the North Vineyard Station Specific Plan area, requiring mitigation measures in order to reduce the impacts to below the level of significance.

NOW, THEREFORE, BE IT RESOLVED that the Board of Directors of the Southgate Recreation and Park District hereby provides the comments contained in the attached letter to be addressed and clarified by the County of Sacramento where indicated and included with the Final Environmental Impact Report.

BE IT FURTHER RESOLVED that adequate response to the District's comments, with a detailed description of potential mitigation measures to assist in reducing potential impacts be included in Final Environmental Impact Report.

Resolution 04-21
Page 2

PASSED AND ADOPTED by the Board of Directors of the Southgate Recreation and Park District this 17th day of August, 2004, by the following vote to wit:

AYES:

Appel, Cockerham, Smith, Thompson & Wirth

NOES:

None

Rolfe Appel, Chair

Edwin A. Smith, Clerk

Letter 2

Hawkins. Tim

From: ken_champion@dot.ca.gov
Sent: Wednesday, August 11, 2004 5:23 PM
To: Hawkins. Tim
Cc: katherine_eastham@dot.ca.gov; steve_hetland@dot.ca.gov; jeff_pulverman@dot.ca.gov; john_holzhauser@dot.ca.gov; dennis_azevedo@dot.ca.gov; larry_brohman@dot.ca.gov
Subject: North Vineyard Station DSEIR State Route 16 Mitigation

Please indicate if a justification rationale and right-of-way research exists in this EIR (or other to be referenced) regarding the State Route (SR) 16 intersections at Watt Avenue and Bradshaw Road to show why a larger "intersection right-of-way foot print" cannot be developed. We would like to see information that discusses with greater certainty whether greater numbers of turn lanes and wider intersection approaches "can" OR "cannot" be provided to raise certain intersection movements to a performance level of LOS "D" instead of "E".

Doesn't the Sacramento County General Plan show the future outlook for SR16 through this area to eventually become a six lane roadway facility with 6 X 6 type intersections? Also, consider that lower standard arterials, at the intersection of Watt Avenue and Fair Oaks Boulevard, were allowed to be developed with a triple left turn movement. As the County develops with higher traffic demands, shouldn't an environmental assessment (on a fair share fee basis) at these intersections consider and discuss the feasibility of such enlarged intersections at Bradshaw and Watt Avenue on SR 16? If they are ruled out, we would like to know why and the rationale behind the decision.

On signalized State highways the State intersection standard adhered to is an LOS D, if it can be obtained by re-geometricizing and re-phasing the signalization of the intersection. The DSEIR appears to be inadequate thus far in its TC-6 and TC-8 mitigation on Page 2-4 (of the yellow pages). It does not explain why LOS D could not be obtained to meet the State highway intersection standard.

We would like to know whether sufficient intersection right-of-way exists at either location for additional improvements beyond the TC-6 and TC-8 mitigation.

1

Letter 3

Sent By: HP LaserJet 3100; 916 323 7669 ; Aug-19-04 4:36PM; Page 2/2

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION
DISTRICT 3 – SACRAMENTO AREA OFFICE
VENTURE OAKS, MS 15
P. O. BOX 942874
SACRAMENTO, CA 94274-0001
PHONE (916) 274-0614
FAX (916) 274-0648
TTY (530) 741-4509

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August 19, 2004

04SAC0109
03SAC-16/99 PM 6.220/19.612
North Vineyard Station Specific Plan Amendment,
Rezone, Subdivision Map, Water Treatment Facilities,
Financing Plan, Special Development Permit
Draft Supplemental Environmental Impact Report
SCH#2004032104

Ms. Joyce Horizumi
Sacramento County
Department of Environmental Review and Assessment
827 7th Street, Suite 220
Sacramento, CA 95814

Dear Ms. Horizumi:

Thank you for the opportunity to review and comment on the above mentioned project. Our comments are as follows:

- The State highway standard for the State Route 16 intersections with South Watt Avenue and Bradshaw Road is LOS "D". The DSEIR proposes two mitigation measures (TC-6 and TC-8) which would decrease the project's traffic impacts to LOS "E". The mitigation measures should be modified to either meet LOS "D" or an explanation should be provided regarding why this standard cannot be met and whether the impact is significant and unavoidable.

Please provide our office with a response to the above comments. If you have any questions regarding these comments, please contact Ken Champion at (916) 274-0615.

Sincerely,

Katherine Eastham

KATHERINE EASTHAM, Chief
Office of Transportation Planning – Southwest

c: Scott Morgan, State Clearinghouse

"Caltrans improves mobility across California"

Letter 4

Aug-20-2004 09:43am From-SAC. METRO AQMD 916 874 4899 T-917 P.001/002 F-470

SACRAMENTO METROPOLITAN
AIR QUALITY
MANAGEMENT DISTRICT

Fax to 2pgs
Tim Hawkins
874-8343
From - Jeane Borkenhagen
ph 874-4885

Larry Greene
AIR POLLUTION CONTROL OFFICER

August 18, 2004

Mr. Tim Hawkins
County of Sacramento
Department of Environmental Review and Assessment
827 7th St, Room 220
Sacramento, CA 95814

COPY

SUBJECT: North Vineyard Station Specific Plan Amendment, Financing Plan, Water Treatment Facilities, Draft Supplemental EIR
SC:2004032104
SMAQMD # SAC200400199

Dear Mr. Hawkins:

Thank you for providing the environmental document listed above to the Sacramento Metropolitan Air Quality Management District (District). Staff comments follow.

We understand from the document that the changes to the land use plan are considered minor and so "it is not expected that these changes will contribute to additional regional air quality impacts beyond those already analyzed in the prior FEIR."

There are two Air Quality mitigation measures listed in the Mitigation Monitoring Report we want to comment on:

AQ 5. Comply with the adopted AQ-15 Plan.

"The following measures, which are incorporated into the North Vineyard Station Specific Plan, are all contained in the preliminary list of acceptable measures. According to the County's preliminary guidelines, the above measures result in a 15.5 percent reduction in emissions and meet the requirements of General Plan Policy AQ-15." (pg 9-4, 9-5)

Under the following list of measures (presumably the AQ-15 Plan), there is #8: "The Plan area will participate in a Transportation Management Association to create, administer, and finance on-going programs to reduce vehicle trips. The Financing Plan for the Plan will include means to fund the TMA. SPECIFIC PLAN CREDIT=3%"

Unfortunately, there is no discussion or provision of funding for such a TMA. In order to create the financing for an on-going program, we suggest a zoning condition be applied to the project area which would read:

The North Vineyard Station Specific Plan shall participate in a County Service Area (CSA), or an equivalent financing mechanism to the satisfaction of the Board of Supervisors, for the purpose of funding a variety of transportation demand management (TDM) services to implement an overall TDM strategy that will contribute to a goal of a 30% reduction in daily vehicle trips. The purpose of this CSA, or equivalent financing mechanism, is to fund programs and services to implement trip reduction measures that

777 12th Street, 3rd Floor ▪ Sacramento, CA 95814-1908
916/874-4800 ▪ 916/874-4899 fax
www.airquality.org

Aug-20-2004 09:43am From-SAC. METRO AQMD 916 874 4899 T-917 P.002/002 F-470

improve mobility and coincidentally reduce air quality impacts. Such programs and services may include but are not limited to:

- On site Transportation Coordinators and education outreach
- Incentives for alternative mode use such as transit subsidies, guaranteed ride home programs, and bicycle purchase subsidies
- Programs encouraging people to work close to where they live
- Grade School trip pool programs
- Transit shuttle system

The second mitigation measure we want to comment on is AQ-6. That measure reads:

"Individual development projects within the Specific Plan Area shall achieve an additional 2 percent reduction in combined operational and area source air quality emissions to ensure overall AQ-15 compliance."

We suggest that this measure actually include some suggested ways to achieve the reduction requested. Specifically, the County could suggest that the developer install "Energy-Star" labeled roofing materials and or that the project comply with SMUD Advantage (Tier II or III) energy standards."

If you have questions, please contact me at 874-4884 or jborkenhagen@airquality.org.

Sincerely,

Jeane Borkenhagen

Jeane Borkenhagen
Associate Air Quality Planner Analyst
cc: Ron Maertz SMAQMD
Dave Pevny Planning Department

Letter 5

COUNTY OF SACRAMENTO
MUNICIPAL SERVICES AGENCY – CHERYL CRESON, ADMINISTRATOR
Department of Water Resources
Including service to the Cities of Citrus Heights, Elk Grove and Rancho Cordova
Keith DeVore, Director

RECEIVED
AUG 4
DEPARTMENT

August 4, 2004

To: Tim Hawkins
Department of Environmental Review and Assessment

RE: Comments to DEIR for North Vineyard Station

Dear Mr. Hawkins,

The following are comments to the DEIR for North Vineyard Station:

- The "Surface Water Component" briefly discusses the Freeport Regional Water Project. I have attached a more detailed document which discusses the project. You may want to incorporate more information about this project (Freeport), since it involves such large facilities within the project area.
- In the "Max Day Analysis" section, delete the "crossed out" section and add the table as shown in the attached document.

If you have any questions, please feel free to give me a call.

Sincerely,

Jody Hashigami
Associate Civil Engineer
S.C.W.A.
916-874-4256

Main Office: 827 7th Street, Room 301, Sacramento, CA 95814 • Phone: (916) 874-6851 • Fax: (916) 874-8693
Field Offices: *Drainage Operations and Maintenance* – 3847 Branch Center Road, Sacramento, CA 95827 • Phone: (916) 875-7159
Facilities Operations and Administration – 3847 Branch Center Road, Sacramento, CA 95827 • Phone: (916) 875-4913

Groundwater will be an integral component of the buildout system serving the area. However, groundwater production is limited to 2,220 gpm (sufficient 2,530 EDU's). Surface water will need to be made available for development to exceed 2,530 EDU's.

Groundwater will be extracted from the deep aquifer and then delivered to a treatment facility for removal of iron and manganese. Treatment, storage, and pumping capacities are modeled in this study to accommodate each development phase in accordance with SCWA design standards.

The groundwater treatment facility is to be constructed near the intersections of the CCTC Railroad and Waterman Road, at the west edge of Phase A-1 development (submitted Tentative Map for Vineyard Point) prior to development of Phase A-2.

The 1998 EIR for the NVSSP identified a second groundwater treatment facility with associated wells to be constructed with Phase D, southwest of the intersection of Florin Road and the Vineyard Road extension. This water treatment plant, if needed, would be constructed by SCWA.

SURFACE WATER COMPONENT

The Draft 2002 Zone 40 Water Supply Master Plan dated December 2002 is intended to update previous Zone 40 water supply plans and incorporates terms and conditions for SCWA's water supply through the year 2030 from the recently adopted Water Forum Agreement. The Water Forum Agreement includes a provision for surface water to be obtained from the City of Sacramento for that portion of Zone 40 that lies within the City's ARPOU. This provision is for up to 9,300 acre-feet per year. The NVSSP portion of this supply is approximately 25%. Transmission and treatment of this water will most likely be through the Freeport Regional Water Project. This project consists of a diversion structure on the Sacramento River near the community of Freeport and a raw water conveyance pipeline to the central portion of Zone 40. An 85-MGD (ultimate capacity) surface water treatment facility and treated water conveyance pipeline will be constructed in phases by SCWA in the vicinity of Bradshaw and Florin Roads to supply surface water throughout Zone 40.

As an alternative, SCWA could negotiate the purchase of City of Sacramento ARPOU water and deliver it through the City's Fairbairn or Sacramento River water treatment plants. This system involves purchasing treatment capacity and constructing conveyance facilities from the current City delivery point near Florin Road and Power Inn Road to the location to the location where the surface water would be introduced into the SCWA system. To deliver this water, a transmission main would need to be constructed in Florin Road, from Power Inn Road to Waterman Road. Booster pump capacity as well as additional storage would also be required.

Surface water supply facilities to meet the Specific Plan Area demands within the City's ARPOU will need to ultimately provide 2,900 gpm.

FREEPORT
REGIONAL WATER AUTHORITY

BOARD MEMBERS
John Coleman
Illa Collin
Katy Foulkes
Don Nottoli

ASSOCIATE BOARD MEMBER
Bonnie Pannell

GENERAL MANAGER
Eric F. Mische

SECRETARY
Cindy H. Turner

GENERAL COUNSEL
John F. Whisenhunt

TREASURER
Gary M. Breaux

September 15, 2004

Subject: Request for Proposal (RFP) for Design Services
FRWA Pipeline Facilities Project

Dear Consultant:

The Freeport Regional Water Authority (FWRA) seeks the services of a design consultant for the FRWA Pipeline Facilities Project. You are invited to submit a proposal for these services.

This project consists of a raw water conveyance pipeline comprised of four segments as follows:

1. Approximately 5.1 miles of 84-inch diameter pipeline which will convey up to 185-mgd of raw Sacramento River water from the end of a tunneled pipeline crossing location east of Interstate 5 (I-5) to State Route 99 (SR 99);
2. Approximately 7.6 miles of 84-inch diameter pipeline which will convey up to 185-mgd of raw Sacramento River water from State Route 99 to a turnout at Vineyard Road and Gerber Road;
3. Approximately 3.9 miles of 66-inch diameter pipeline which will convey up to 100-mgd of raw Sacramento River water from the turnout at Vineyard Road and Gerber Road to the Folsom South Canal (FSC). A pipeline Terminal Facility located at the FSC consisting of a weir and outfall structure is also included in this segment; and
4. Approximately 1.0 mile of 60-inch diameter pipeline which will convey up to 85-mgd of raw Sacramento River water from the turnout at Vineyard Road and Gerber Road to the future SCWA water treatment plant (Zone 40 WTP) near Florin Road and Vineyard Road and the flow control facilities.

The estimated capital cost of these project elements is $150 million. Completion of design is targeted for Summer 2006. Completion of facility construction is targeted for Fall 2009.

The FRWA pipelines will receive raw water flow from an intake structure and pumping facility to be constructed on the Sacramento River near Freeport, California. Design services for the intake structure and pumping facility will be procured by FRWA under a separate RFP process. The consultant selected for the pipeline design will not be prohibited from performing design services for the intake structure and pumping facility.

1510 J STREET • SUITE 140 • SACRAMENTO • CA 95814
Tel. (916) 326-5480 • Fax. (916) 444-2137
www.freeportproject.org

MAX-DAY DEMAND ANALYSIS

MAX-DAY ASSUMPTIONS/CRITERIA

Max-Day demand for the North Vineyard Specific Plan is based on the anticipated land use and respective average annual demands per EDU both outside and within the ARPOU. The Max-Day values are obtained by multiplying the Average Daily demand by a factor of 2 per Sacramento County Improvement Standards Manual. Max-Day demands are individually entered at respective demand nodes in the WaterCAD® model.

The Hazen-Williams formula is used in the hydraulic study of the system, using a C-value of 125 for PVC pipe as required by the Sacramento County Improvement Standards Manual. This C-Value is generally considered conservative as it is intended to take into account various minor losses in the system.

CONCLUSIONS

The prior EIR concluded that implementation of the North Vineyard Station Specific Plan Water Master Plan would result in less than significant water supply impacts. However, the implementation of the NVSSP Water Master Plan was contingent on the implementation of the Water Master Plan for Areas Adjacent to the Zone 40 Water Supply Master Plan Update's Study Area, as well as fulfillment of the City of Sacramento American River Place of Use. Until all agreement are in place to wheel "firm" surface water supplies to the Specific Plan area, the project will contribute to the incremental decline in ground water levels. This incremental decline and the dewatering of private wells is a regional issue, beyond the scope of the proposed project. However, the project would add to the significant adverse cumulative impacts that regional development has on ground water supplies.

REQUIREMENTS OF THE SACRAMENTO COUNTY WATER AGENCY:

The SCWA requires the following conditions of approval be placed on all tentative maps and vesting tentative maps within the North Vineyard Station Specific Plan Area:

1. That Simple Title ownership or sale agreements for the WTP lands are completed prior to any Tentative Map approvals within the North Vineyard Station Specific Plan area. WTP lands shall be reserved per the guidelines contained in Chapter 22.50 of the Sacramento County Code and Government Title 7, Division 2, Article 4.(1/03).

2. That well sites be identified prior to Tentative map approvals for subdivisions within the North Vineyard Station Specific Plan area and reserved per the guidelines contained in Chapter 22.50 of the Sacramento County Code and Government Title 7, Division 2, Article 4.(1/03).

7. MAX-DAY DEMAND ANALYSIS

Max-Day Assumptions/Criteria

Max-Day demand for the North Vineyard Specific Plan is based on the anticipated land use and respective average annual demands per EDU both outside and within the ARPOU. ~~The Max-Day values are obtained by multiplying the Average Daily demand by a factor of 2 per Sacramento County Improvement Standards Manual. Max-Day demands are individually entered at respective demand nodes in the WaterCAD® model.~~

~~The Hazen-Williams formula is used in the hydraulic study of the system, using a C-value of 125 for polyvinyl chloride (PVC) pipe as required by the Sacramento County Improvement Standards Manual. This C-value is generally considered conservative as it is intended to take into account various minor losses in the system.~~

Table 7.1 – Summary of Results for Max-Day Demand

Phase	Max-Day Demand* (gpm)	Maximum System Pressure (psi)	Minimum System Pressure (psi)	Minimum Pressure Junction	Maximum Headloss Gradient (ft/1000ft)
A-1	536.10	45	37.47	J-A2-08	0.09
A-2	1,461.87	56.83	49.91	J-A2-08	0.10
B	2,486.55	61.68	55.27	J-A2-10	0.12
C	3,744.90	61.75	47.35	J-C-05	0.23
D	4,640.61	61.73	47.28	J-C-05	0.25
E	5,338.99	61.70	47.26	J-C-05	0.25

* incl. 7% transmission loss

Letter 6

ELK GROVE Unified School District

Members of the Board:
Jeanette J. Amavisca
Pollyanna Cooper-LeVangie
Priscilla S. Cox
Pamela A. Irey
William H. Lugg, Jr.
Chet Madison, Sr.
Brian D. Myers

Constantine I. Baranoff
Assistant Superintendent
Facilities and Planning

Robert L. Trigg Education Center
9510 Elk Grove-Florin Road, Elk Grove, CA 95624

(916) 686-7711
FAX: (916) 686-7754

August 24, 2004

Ms. Joyce Horizumi
County of Sacramento
Department of Environmental Review and Assessment
827 7th Street, Room 220
Sacramento, CA 95814

Dear Joyce:

On behalf of the Elk Grove Unified School District, please accept the following comments concerning the Draft Supplemental Environmental Impact Report for the North Vineyard Station Financing Plan:

The School District has been looking for a combination High School/Middle School site of approximately 80 acres for the past several months. As you know, this type of site was not included in the North Vineyard Station Specific Plan. The District did not request one at the time the plan was being considered because the number of housing units in the land use plan did not generate enough students; however, when the North Vineyard Station Specific Plan is coupled with the proposed Elk Grove-Florin Specific Plan, there are more than enough students generated to fill both a High School and Middle School.

Obtaining a full 80 acres for this type of facility is difficult with all of the environmental and California Department of Education school site requirements. As a result of the District's investigation of possible school sites, we have narrowed the selection process to include three possible options. Two of these options are within the North Vineyard Station Specific Plan, and the other is within the proposed Elk Grove-Florin Specific Plan. Please see attached exhibit.

On August 2, 2004, the Elk Grove Unified School District Board of Education reviewed the three options and requested the District Staff investigate option #8, located on the south side of Florin Road and the future extension of Vineyard Road. If this site is pursued by the District, there will be a displacement of 80-240 residential housing units, which will impact the proposed Financing Plan. In addition to this issue, the District is extremely interested in the timing of the extension of Vineyard Road in order to provide access on two sides of the site.

Please contact Mr. Jim Bush, School Site Solutions, Inc. (916-930-0736) or me if you have any questions.

Sincerely,

Constantine I Baranoff
Assistant Superintendent, Facilities and Planning

CIB:gg
Corresp\JH82404CommentsNorthVineyard

cc: Steve Looper
Marnie Rosenstein

RECEIVED
AUG 26 2004
DEPARTMENT OF ENVIRONMENTAL REVIEW AND ASSESSMENT

Letter 7

CSD-1
COUNTY SANITATION DISTRICT 1
Wastewater Conveyance For a Growing Sacramento

10545 Armstrong Avenue
Mather
California
95655
Tele: [916] 876-6000
Fax: [916] 876-6160
www.csd-1.com

Board of Directors
County of Sacramento
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Illa Collin
Muriel P. Johnson
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City of Elk Grove
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District Engineer

Marcia Maurer
Chief Financial Officer

Wendell H. Kido
District Manager

Mary K. Snyder
Collection Systems Manager

August 24, 2004
E225.000

Joyce Horizumi
Dept. of Environmental Review & Assessment
Sacramento County
827 Seventh Street, Room 220
Sacramento, CA 95814

Dear Ms. Horizumi:

Subject: **Notice of Preparation of a Draft Environmental Impact Report for North Vineyard Station Specific Plan Amendment, Financing Plan, Water Treatment Facilities, and Associated Vineyard Point Rezone, Vesting Tentative Subdivision Map, Large Lot Tentative Subdivision Map, and Special Development Permit; and Vineyard Creek Rezone, Vesting Tentative Subdivision Map, and Large Lot Tentative Subdivision Map (Cont. NOS. 03-0082, 02-0532, 02-0293, & 03-0385)**
Control No. 03-CPB-0082, 02-PWE-0532, 04-PWE-0144, 02-RZB-SDB-SVB

Sacramento Regional County Sanitation District (SRCSD) and County Sanitation District 1 (CSD-1) have reviewed the subject Notice of Preparation (NOP) and have the following comments.

We expect that if the project is subject to currently established policies, ordinances, fees, and to conditions of approval that we have and will propose after review of entitlement application documents, then mitigation measures within the Environmental Impact Report (EIR) will adequately address the sewage aspects of the project, and we anticipate a less than significant impact to the sewage facilities.

The North Vineyard Station Specific Plan (NVSSP) area is currently within the CSD-1 and SRCSD boundary and does not have to be annexed.

CSD-1 shall require an approved sewer study prior to the approval of the Final Maps or submittal of the improvement plans for plan check to CSD-1, whichever comes first. Sewer studies shall reflect the increase in residential zoning and the addition of the Water Treatment Facility.

If you have any questions regarding these comments, please call Joyce Ferguson at (916) 876-6098 or myself at (916) 876-6094.

RECEIVED
AUG 25 2004
DEPARTMENT OF ENVIRONMENTAL REVIEW AND ASSESSMENT

Sincerely,

Matt Morgan, P.E.
Development Services

MM/RS: pc

cc: Christoph Dobson
Steve Hong

horizumi082404.ltr.doc

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County Sanitation District 1

Letter 8

STATE OF CALIFORNIA ARNOLD SCHWARZENEGGER, *Governor*

PUBLIC UTILITIES COMMISSION
515 "L" Street, Suite 1119
Sacramento, CA 95814

July 27, 2004

SCH# 2004~~[illegible]~~ 032104
Comments

RECEIVED
JUL 28 2004
STATE CLEARING HOUSE

Clear 8-20-04 e

State Clearinghouse
1400 Tenth Street
Sacramento, CA 95814

RE: Written Comments for the Notice of Completion of the North Vineyard Station Specific Plan Amendment, Financing Plan, Water Treatment Facilities, and Associated Vineyard Point Rezone, Vesting Tentative Subdivision Map, Large Lot Tentative Subdivision Map, and Special Development Permit; and Vineyard Creek Rezone, Vesting Tentative Subdivision Map, and Large Lot Tentative Subdivision Map

Dear Sir:

As the state agency responsible for rail safety within California, we recommend that any development projects planned adjacent to or near any railroad are planned with the safety of the rail corridors in mind. New developments may increase traffic volumes not only on streets and at intersections, but also at at-grade highway-rail crossings. This includes considering pedestrian circulation patterns/destinations with respect to the railroad right-of-way.

Safety factors to consider include the planning for grade separations for major thoroughfares, improvements to existing at-grade highway-rail crossings due to increase in traffic volumes, or pull out lanes for busses, and appropriate fencing to limit the access of trespassers onto the railroad right-of-way.

The above-mentioned safety improvements should be considered when approval is sought for new developments which may impact surrounding at-grade crossings. Working with Commission staff early in the conceptual design phase will help improve the safety to motorists and pedestrians in the City.

If you have any questions in this matter, please call me at (916) 324-7143.

Sincerely,

Bree Arnett
Utilities Engineer
Rail Crossings Engineering Section
Consumer Protection and Safety Division

Letter 9

COUNTY OF SACRAMENTO

Inter-Department Correspondence

July 27, 2004

TO: Steve Hong
Infrastructure Finance Section

FROM: Jeff Clark
Department of Transportation

SUBJECT: **DRAFT ENVIRONMENTAL IMPACT REPORT (DEIR) FOR NORTH VINEYARD STATION SPECIFIC PLAN AMENDMENT, FINANCING PLAN, WATER TREATMENT FACILITIES, AND ASSOCIATED VINEYARD POINT REZONE, VESTING TENTATIVE SUBDIVISION MAP, LARGE LOT TENTATIVE SUBDIVISION MAP, AND SPECIAL DEVELOPMENT PERMIT; AND VINEYARD CREEK REZONE, VESTING TENTATIVE SUBDIVISION MAP, AND LARGE LOT TENTATIVE SUBDIVISION MAP (CONTROL NUMBERS: 03-0082, 02-0532, 04-0144, 02-0293, 03-0385).**

The Department of Transportation has reviewed the Draft Environmental impact Report (DEIR) for the North Vineyard Specific Plan and has the following comment:

In Tables 8-4, 8-7, 8-9, 8-11, 8-14, 8-15 and 8-17 there are roadway segments that have bold level of service definitions indicating that the roadway segment is operating at an unacceptable level of service. Only segments operating at level of service F (LOS F) should be bold. Please make the appropriate corrections for the Final EIR.

If you have any questions, please call me at 874-5553.

JEC:jec

c. Matt Darrow
Tammy Urquhart
David Robinson, Fehr & Peers

Letter 10

COUNTY OF SACRAMENTO

MUNICIPAL SERVICES AGENCY

Inter-Departmental Correspondence

August 20, 2004

TO: Joyce Horizumi, Environmental Coordinator
Department of Environmental Review and Assessment

FROM: Robert Davison, Manager of Special Districts RGD
Infrastructure Finance Section

SUBJECT: **Draft Supplemental Environmental Impact Report (DSEIR) for North Vineyard Station Specific Plan Amendment, Financing Plan, Water Treatment Facilities, and Associated Vineyard Point Rezone, Vesting Tentative Subdivision Map, Large Lot Tentative Subdivision Map, and Special Development Permit; and Vineyard Creek Rezone, Vesting Tentative Subdivision Map, and Large Lot Tentative Subdivision Map (Control Nos. 03-0082, 02-0532, 04-0144, 02-0293, and 03-0385)**

As stated in the subject DSEIR, an air quality analysis prepared for the previous EIR for the North Vineyard Station Specific Plan (Project) concluded that the Project will increase regional concentrations of ozone and would contribute to adverse localized air quality conditions at congested intersections. Any reduction in Project vehicle trips and emissions would help reduce impacts on air quality.

At the Board of Supervisors hearing this year for the levy of County Service Area (CSA) No. 10 Benefit Zone No. 1 (Villages of Zinfandel) Service Charges, the Municipal Services Agency received direction from the Board that similar trip reduction finance mechanisms be implemented in new development areas such as North Vineyard Station, Elverta, and Florin-Vineyard Gap.

Given this Board direction, there should be discussion in the SEIR about this issue and appropriate conditions recommended. The following is a suggested condition for the Project:

"Prior to the approval of final maps, the property owner shall participate in a County Service Area (CSA), or an equivalent financing mechanism to the satisfaction of the Board of Supervisors, for the purpose of funding a variety of transportation demand management (TDM) services to implement an overall TDM strategy that will contribute to the goal of reducing vehicle trips. The purpose of this CSA, or equivalent financing mechanism, is to fund programs and services to implement trip reduction measures that improve mobility and coincidentally reduce air quality impacts. Such programs and services may include but are not limited to:

Joyce Horizumi
August 20, 2004
Page 2

- on-site transportation coordinators and education outreach
- incentives for alternative mode use such as transit subsidies, guaranteed ride home programs, and bicycle purchase subsidies
- programs encouraging people to work close to where they live
- grade school trip pool programs
- transit shuttle system

Any component of the trip reduction strategy implemented through the CSA or equivalent financing mechanism may be revised or discontinued if it is proven to be ineffective. Additional programs and services may be implemented as appropriate to assist in achieving the targeted reduction in daily vehicle trips."

If you have any questions, I can be reached at 874-6926.

RAD:bsg

Distribution: Tim Hawkins
Jeff Gamel
Ron Maertz
Rich Blackmarr
Susan Goetz
Steve Hong
Steve Pedretti
Kurt Schmidt
Mike Penrose
Dan Shoeman
Jeff Clark

P:\Shared Folders\Financing and Specific Plans\NORTH VINEYARD STATION\Memo to Joyce Horizumi re DSEIR for North Vineyard Station.doc

ACKNOWLEDGEMENTS

EIR PREPARERS

Joyce Horizumi, *Environmental Coordinator*

Robert Caikoski, *Assistant Environmental Coordinator*

Catherine Hack, *Private Projects Division Manager*

Antonia Barry, *Public Projects Division Manager*

Kate Brownfield, *Long Range Planning Division Manager*

Tim Hawkins, *Associate Environmental Analyst*

Bob DeMorales, *Associate Environmental Analyst (Initial Review)*

SUPPORT STAFF

Linda Bryceson, *Administrative Services Officer II*

Neil Phaby*, Customer Support Specialist*

Justin Maulit*, Office Assistant II*

TECHNICAL STUDIES

Economic & Planning Systems, Public Facilities Financing Plan

Bollard and Brennan, Inc, Noise Analysis

Fehr and Peers, Traffic Study

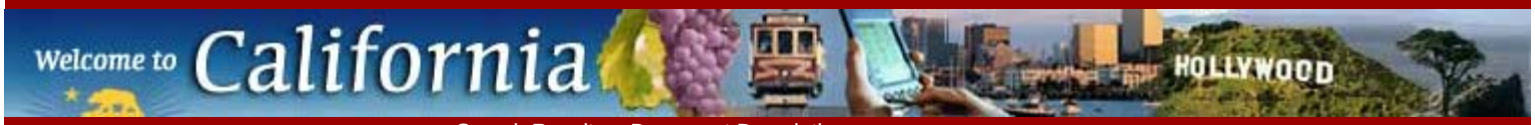
ECORP Consulting, Inc, Biological Resources

Peak and Associates, Inc, Cultural Resources

Wood Rodgers, Drainage Study

Luhdorff & Scalmanini, Groundwater Treatment and Storage Facilities

MacKay & Somps, Water Supply and Sewer Study



NORTH VINEYARD STATION SPECIFIC PLAN

SCH Number: 1996032057

Document Type: NOD - Notice of Determination

Project Lead Agency: Sacramento County

Project Description

RURAL RESIDENTIAL, AGRICULTURAL, A SPECIFIC PALN FOR 1590 ACRES INTHE VINEYARD COMMUNITY PLAN AREA CURRENTLY DESIGNATED AS AN URBAN DEVELOPMENT AREA. THE 6339 UNIT RESIDENTIAL SPECIFIC PLAN WILL SUPPORT COMMERCIAL, BUSINESS PROFESSIONAL, PARK, SCHOOL, AND OPEN SPACE USE AS DESCRIBED

Contact Information

Primary Contact:
DENNIS YEAST
SACRAMENTO COUNTY
916 440-7914

Project Location

County: SACRAMENTO
City: VINEYARD
Region:
Cross Streets: BRADSHAW RD/FLORIN ROAD
Latitude/Longitude:
Parcel No:
Township: 7N
Range: 6e
Section: 4,5
Base: MDBM
Other Location Info:

Determinations

This is to advise that the ☐ Lead Agency ☐ Responsible Agency has approved the project described above on 1/1/1900 and has made the following determinations regarding the project described above.

1. The project ☒ will ☐ will not have a significant effect on the environment.

2. ☒ An Environmental Impact Report was prepared for this project pursuant to the provisions of CEQA.

   ☐ A Negative Declaration was prepared for this project pursuant to the provisions of CEQA.

3. Mitigation measures ☒ were ☐ were not made a condition of the approval of the project.

4. A Statement of Overriding Considerations ☒ was ☐ was not adopted for this project.

5. Findings ☒ were ☐ were not made pursuant to the provisions of CEQA.

Final EIR Available at:

Date Received: 11/10/1998