Draft Environmental Impact Statement/Report

&

4 (f) Evaluation

Lincoln Bypass
Placer County,
State Route 65

KP R19.6/R38.3
PM R12.2/R23.8

Report Number: FHWA-CA-EIS xx-xx-xx

SCH Number 199090020626
03-PLA 65, KP R19.6/R38.3
PM R12.2/R23.8
03-173-333800

Construct Four lanes on new right of way
In Placer county,
from .03 km south of Industrial to Riosa Rd.

Draft Environmental Impact Statement
Draft Environmental Impact Report
and Section 4(f) Evaluation

Submitted Pursuant to:

California Environmental Quality Act, Div. 13, Public Resources Code
And the National Environmental Policy Act, 42 U.S.C. 4332(2)(c) and 40 USC 303
By the
U.S. Department of Transportation, Federal Highway Administration
and
the State of California, Department of Transportation

Cooperating Agencies:
National Marine Fisheries Service
U.S. Army Corps of Engineers
U.S. Environmental Protection Agency
U.S. Fish and Wildlife Service

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The comment period for this document will close on January 15, 2002. The following persons may be contacted for additional information concerning this document.

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ABSTRACT: The FHWA and Caltrans propose to construct a four lane freeway around the city of Lincoln, in Placer County, from south of Industrial Blvd to north of Riosa Rd. The purpose of the project is to alleviate congestion within the city of Lincoln and provide for inter-regional movement of goods and services. Seven alternatives are being evaluated, including the "No Build" alternative. The estimated cost of this project is between $151-194,000,000.

The proposed project could affect vernal pool fairy shrimp and tadpole shrimp, Swainson's hawk, Ahart's dwarf rush, Legenere, Bogg's Lake hedge hyssop, several bat species, valley elderberry longhorn beetle and numerous large oak trees, vernal pool habitat and agricultural land. The project will affect from 10 to 91 residences and between 123 to 214 acres of farmland. From 4.9 to 9.4 hectares of wetlands or waters of the U.S. could be affected.

Comments on this document are due by January 15, 2002. Please send comments to Ken Van Velsor, at the above address.

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S.1 Project Purpose & Need

The Department of Transportation (Department) and Federal Highway Administration (FHWA) propose to construct a four-lane freeway around the City of Lincoln, in Placer County (see Figure i). The project begins 0.3 km (0.5 mi) south of Industrial Blvd. and ends near Riosa Road. A map showing the alternatives is presented after the summary (See Figure ii). There are six alternatives; AAC2, A5C1, D1 and D13, D13 South Modification and D13 North Modification that are being evaluated in this document as well as a "No Build" alternative. The last two alternatives, D13 South Modification and D13 North Modification were developed in response to information gathered at the Open House held on September 22, 1999.

A number of additional alternatives were also evaluated, but discarded for various reasons. These are discussed at the end of Chapter 2.

Approval of this Environmental Impact Statement / Report and the subsequent Record of Decision issued by the FHWA would allow for the acquisition of right-of-way

for the ultimate four-lane freeway and provide for conceptual approval and construction of interchange locations.

The purpose of the project is to relieve congestion and improve safety on existing State Route (SR) 65 in the vicinity of the City of Lincoln and provide for a regional traffic solution to accommodate projected traffic volumes for the year 2020. Traffic studies were completed with the 2025 year construction year in mind

Continuing growth in south Placer County and the Sacramento Valley has resulted in the need for a new and improved SR 65 corridor, which would alleviate congestion in the City of Lincoln while providing for improved inter-regional traffic flow. The existing facility through Lincoln is a "Main Street" highway, which will not serve the ultimate transportation needs of the region. Due primarily to congestion, the accident rate in downtown Lincoln is higher than the average rate for this type of facility. As traffic volumes continue to increase, SR 65 south of Lincoln and within downtown Lincoln is expected to exceed available capacity by the year 2005.

This project has been included in the 2000/01 Metropolitan Transportation Improvement Program (MTIP) and the 1999 Metropolitan Transportation Plan (MTP). On July 20, 2000, the Sacramento Area Council of Governments (SACOG) signed Resolution 29-2000 finding that the 2000/01 Metropolitan Transportation Improvement Program (MTIP) conforms to the 1994 State Implementation Plan (SIP) under the U.S. Environmental Protection Agency (EPA) conformity rule for the Sacramento ozone non-attainment area, carbon monoxide attainment area and particulate matter unclassified area. The conformity determination was signed by the Federal Highway and Federal Transit Administrations on October 5, 2000.

S.2 Brief Description of Project

The six build alternatives are of various lengths, ranging from 18.6 km to 20.6 km (11.6 to 12.8 miles). They are shown in Figure ii at the end of the Summary and described in Chapter 2.

The project begins just north of Industrial Boulevard (KP R19.6 [PM R12.2]) and ends near Riosa Road (KP R38.3 [PM 23.8]). All the "Build" alternatives begin at the same location and meet existing SR 65 at slightly different locations between Dowd Road and the Bear River. All of the alternatives descriptions begin on the south end of the project and are described south to north.

Due to funding constraints, the project could be built in stages: The minimum project staging includes a four-lane freeway commencing just north of Industrial Boulevard proceeding to the north to Nicolaus Road for the AC alternatives and northerly

to Nelson Lane for the D alternatives. An interchange would be constructed at Industrial Boulevard. North of Nelson Lane (for the D alternatives) or Nicolaus Road (for the AC alternatives), a two-lane facility would be constructed (and opened to traffic). At-grade intersections would be constructed at Nelson Lane, Nicolaus Road, Wise Road, Dowd Road and Riosa Roads for the first phase. As traffic congestion increases, additional lanes, the third and fourth, respectively, and interchanges would be constructed. The northbound roadbed will be constructed initially and operated as a two-lane conventional highway, until future construction provides for the parallel roadbed.

Following is a brief description of the alternatives being considered. Please refer to the map following the Summary.

S.2.1 Alternatives AAC2 and A5C1 (The AC Alignments)

The key feature of the AC alternatives is that they are located east of the airport. They both begin at Industrial Blvd. and end just before the Bear River. A5C1 and AAC2 split from the D alternatives just past Nicolaus Road, both following the same alignment until just past Wise Road. At that point, A5C1 swings further west than the AAC2 alternative, resulting in less impact on farmland. They join again at Riosa Road.

The minimum project is to build a four-lane freeway up to Nicolaus Road, and a two-lane road from Nicolaus Road to the end of the project. An interchange would be constructed at Nicolaus Road and at-grade intersections would be constructed at Wise Road and Riosa Road. Eventually, as traffic increases, interchanges would be constructed at Wise and Riosa Roads.

S.2.2 Alternative D1

The D1 and D13 alternatives are located west of the airport. The key feature that differentiates the D 1 alternative from the similar D 13 is that the D1 alternative would impact a small cluster of homes close to Nelson Lane, in the Rockwell subdivision. These homeowners gathered a petition of names in protest of this alignment.

After the D 1 alternative passes through the Rockwell subdivision, it ties back into the D 13 alternative.

S.2.3 Alternative D13

The D13 alternative was created in response to the homeowners protests to the D1 alignment and also as an effort to avoid environmentally sensitive areas. The D13 alignment avoids the Rockwell subdivision, making a wide turn around it. The D13 also affects less wetlands than the D1.

For the D1 and D13 alternatives, including the south and north modifications, at-grade intersections would be constructed at Nelson Lane, Nicolaus, Wise and Riosa

Roads. Eventually, as traffic increases, interchanges would be constructed at these locations.

The minimal project is to build a four-lane facility up to Nelson Road, and a two-lane facility from Nelson to the end of the project.

S.2.4 Alternative D13 South Modification

Several attendees of the open house on September 22, 1999 suggested a modification of the D13 that blended the D1 with the D13. The result of this is the D13 South Modification. The purpose of this alignment is to create more distance between the residents in the Brookview subdivision and the proposed highway.

S.2.5 Alternative D13 North Modification

The D13 North Modification was developed in response to a potential wetland conservation easement on a parcel required for the project that could preclude the acquisition of this property for highway use.

The D 13 North Modification is identical to D 13 up to Wise Road. At Wise Road, the D13 North Modification makes a gentle curve just past Coon Creek and goes straight to SR 65 ending just past Sheridan.

S.2.6 No Build Alternative

The "No Build" alternative would be to not build the project. However, routine maintenance and operational improvements would continue. If the "No Build" alternative were chosen, congestion would continue in the City of Lincoln. The Level of Service would continue to deteriorate to a LOS F within the city limits. The safety of the traveling public and the residents of the town would be compromised due to the continuing congestion.

S.3 Other Major Actions In The Project Vicinity

The transportation corridor between Sacramento and Yuba City is currently under scrutiny for improvement with a number of highway improvements being evaluated for the area. In the immediate vicinity, SR 65 is being improved with widening and interchanges from Roseville to Lincoln. The parallel routes of SR 99 and 70 also have improvements such as widening and the addition of interchanges proposed. The goal of the Department is to have a network of four-lane freeways from I-80 in Roseville to north of Marysville/Yuba City. More information on this is offered in Chapter 1.

A summary of transportation projects in the area are listed in Table i.

Table i Transportation Projects in the Lincoln Area

Project	County	Year Constructed
SR 65 Improvement from Roseville to Industrial Blvd.	Placer	1997
Blue Oaks Interchange	Placer	1998
SR 193 improvements.	Placer	1999
Future Improvements to the State Highway System include:		**Year Proposed**
Wheatland Bypass	Sutter/Yuba	2006
SR 70, McGowen to Striplin widening	Sutter/Yuba	2005
SR 99 Improvements	Sutter	2003
Third River Crossing	Yuba	2004
Marysville Bypass	Yuba	2005
Placer Parkway*	Placer	Not Determined

*Not part of the State Highway System

Other major non-transportation projects in the area include several residential developments such as Del Webb's Lincoln Sun City, the Regional Wastewater Treatment Plant in Lincoln and Teichert Mining operation near Coon Creek. Table ii describes these projects.

Table ii Development Proposals in the Lincoln Area

What	Where	Impacts	Details
Lincoln Air Center	Next to Airport	280 ha (700 ac)	Residential, industrial/business park, commercial use, golf course, park and public facilities.
3D Developments	Southwest of Lincoln	42 ha (104 ac)	Residential, floodplain preserve.
Lincoln Crossing	Southwest of Lincoln	428 ha (1,070 ac)	Residential, business/professional/ commercial uses, parks and schools.
East Park	Southeast of Lincoln	30 ha (76 ac)	Residential
Twelve Bridges (aka Sun City, Lincoln)	Southeast of Lincoln	2282 ha (5,706 ac)	Residential some "age restricted" commercial uses and golf course.
East Lake (aka Ferrari Ranch)	Southeast of Lincoln	152 ha (379 ac)	Residential, commercial, business-professional uses, public facilities
Lincoln Wastewater Reclamation & Treatment Plant	East and west of Fiddyment Road	297.4 ha (735 ac)	Expansion to 2.4 million gallons daily.
Teichert Aggregate Facility	Between Lincoln & Sheridan	1382 ha (3,455 ac)	400 ha (1000 ac) mining and processing area.

S.4 Summary Of Major Environmental Impacts

Table iii summarizes the potential environmental impacts of this project, including socioeconomic, cultural and natural resource impacts and funding. This table quantifies the impacts in each of these areas and puts these figures in table form for comparison.

Table iii Summary of Impacts

	A5C1 Alignment	AAC2 Alignment	D1 Alignment
Wetlands/ Nonwetland Waters	9.4 ha (23.1 ac) wetlands/waters 6.5 ha (16.1 ac) vernal pool/swale 2.2 ha (5.4 ac) of marsh two high value vernal pool complexes	6.3 ha (15.5 ac) wetlands/waters 3.3 ha (8.0 ac) vernal pool/swales 2.4 ha (6.0 ac) of marsh two high value vernal pool complexes	5.7 ha (14.1 ac) wetlands/waters 2.8 ha (6.8 ac) vernal pool/swales 2.6 ha (6.3 ac) of marsh one high value marsh
Special Status Species	Vernal pool fairy shrimp Ahart's dwarf rush Raptor foraging and potential nesting habitat two high value vernal pool complexes	Vernal pool fairy shrimp Ahart's dwarf rush Raptor foraging and potential nesting habitat two high value vernal pool complexes	Vernal pool fairy shrimp Raptor foraging and potential nesting habitat one high value marsh
Natural Communities Wildlife, Fisheries	80.1 ha (197.7 ac) grassland/ vernal pool 2.2 ha (5.4 ac) riparian forest 5.8 ha (14.3 ac) oak woodland	76.0 ha (187.7 ac) grassland/ vernal pool 1.1 ha (2.6 ac) riparian forest 10.2 ha (25.2 ac) oak woodland	48.4 ha (119.4 ac) grassland/vernal pool 1.3 ha (3.2 ac) riparian forest 0.4 ha (0.9 acre) oak woodland
Water Quality	185.8 ha (59.0 ac) footprint with 11 stream crossings	178.3 ha (440.6 ac) footprint with 11 stream crossings	182.8 ha (451.7 ac) footprint with 9 stream crossings
Cultural Resources	Requires small amount of right-of-way from property eligible for National Register.	Requires small amount of right-of-way from property eligible for National Register. Impacts to recorded archeological site	Requires small amount of right-of-way from property eligible for National Register.
Agricultural Land	54.4 ha 134.3 ac	51.1 ha 126.1 ac	84.4 ha 208.5 ac
Hazardous Waste	Potential	Potential	Potential
Land Use/ Socio-economics	Residences: 91 Businesses: 5	Residences: 20 Businesses: 2	Residences: 20 Businesses: 2
Cost	$151 million	$159 million (min) $185 million (max)	$194 million

	D13 Alignment	D13 South Modified	D13 North Modified
Wetlands/ Nonwetland Waters	5.3 ha (13.1 ac) wetlands/waters 2.2 ha (5.4 ac) vernal pools/swales 2.8 ha (6.8) ac of marsh one high value marsh	6.8 ha (16.8 ac) wetlands/waters 2.4 ha (6.0 ac) vernal pool/swales 2.2 ha (5.5 ac) marsh	5.1 ha (13.8 ac) wetlands/waters 2.0 ha (4.9 ac) vernal pools/swales 2.5 ha (6.4) ac of marsh
Special Status Species	Vernal pool fairy shrimp Raptor foraging and potential nesting habitat one high value marsh	Vernal pool fairy shrimp Raptor foraging and potential nesting habitat	Vernal pool fairy shrimp Raptor foraging and potential nesting habitat
Natural Communities Wildlife, Fisheries	50.4 ha (123.3 ac) grassland/ vernal pool 1.3 ha (3.3 ac) riparian forest 3.5 ha (8.6 ac) oak woodland	52.5 ha (129.7 ac) grassland/ vernal pool 1.2 ha (3.0 ac) riparian forest 0.2 ha (0.4 ac) oak woodland	64.2 ha (158.7 ac) grassland/ vernal pool 1.3 ha (3.3 ac) riparian forest 3.5 ha (8.6 ac) oak woodland
Water Quality	198.9 ha (491.5 ac) footprint with 9 stream crossings	196.3 ha (485.2 ac) footprint with 9 stream crossings	172.6 ha (426.6 ac) footprint with 8 stream crossings
Cultural Resources	Requires small amount of right-of-way from property eligible for National Register.	Requires small amount of right-of-way from property eligible for National Register.	Requires small amount of right-of-way from property eligible for National Register.
Agricultural Land	102.5 ha 253.2 ac	95.5 ha 235.7 ac	96.7 ha 238.8 ac
Hazardous Waste	Potential	Potential	Potential
Land Use/ Socio-economics	Residences: 10 Businesses: 2	Residences: 14 Businesses: 2	Residences: 10 Businesses: 1
Cost	$157 million (min) $185 million (max)	$186 million	$186 million

S.5 Issues and Areas Of Controversy

S.5.1 Farmland Loss

The proposed project would require approximately 21 to 22 ha (52-55 ac) of prime farmland. There are approximately 5961 ha (14,903 ac) of prime farmland in Placer County. Thus, the maximum amount potentially removed from production represents approximately 0.004 percent of the total.

S.5.2 Wetland Conservation Easement

One property within the proposed right of way for the Lincoln Bypass is, or will be, in a conservation easement called the Wetlands Reserve Program administered by the U.S. Dept. of Agriculture. The Wetlands Reserve Program is a voluntary program offering landowners the opportunity to protect, preserve and enhance wetlands on their property. The program is targeted at marginal farmland that was previously wetlands. The D13 North Modification and D13 Dowd Alternatives were developed to avoid this property and are presented in more detail in Chapter 2.

S.5.3 Growth Inducement

Decision makers in Placer County and the City of Lincoln believe that growth is inevitable, and have developed strategies to manage it so this area retains the qualities of life the citizens' desire. Lincoln is laying the groundwork to become the next large growth area in western Placer County.

In 1988, the City of Lincoln updated its General Plan to designate areas where development should occur. The City determined that the adoption of the proposed Land Use Element would cause significant growth inducing impacts, resulting in levels of population and urban development in excess of that which would otherwise occur within the existing city limits under the former General Plan. According to the City of Lincoln's General Plan Environmental Impact Report, Lincoln's adoption of the land use policies specified in the General Plan would commit lands for mixed urban uses that are currently used for agriculture and livestock grazing. The distribution and concentration of population would also be increased by adoption of the Land Use Element. These impacts were found to be both significant and un- mitigatible. The Bypass would be an eventual component of the circulation plan.

S.5.4 Sensitive Habitat Impacts

Wetlands are distributed throughout the project area; thus any project alternative involving new construction would impact wetlands. Vernal pools are considered among the more biologically sensitive wetland types due to their relative scarcity and the difficulty in mitigating impacts to this type of wetlands. Vernal pools also provide habitat for several sensitive plant and animal species found in the area. Table iv and Table v compare the total wetland loss and oak habitat loss for all the alignments.

Table iv Wetland Habitat Loss

	AAC2	A5C1	D1	D13	D13 South Modified	D13 North Modified
ACOE Jurisdictional Waters in hectares (ac)	6.3 ha (15.5 ac)	9.4 ha (23.1 ac)	5.7 ha (14.1 ac)	5.3 ha (13.1 ac)	6.8 ha (16.8 ac)	5.1 ha (13.8 ac)
Vernal Pools and swales in hectares (ac)	3.3 ha (8.0 ac)	6.5 ha (16.1 ac)	2.8 ha (6.8 ac)	2.2 ha (5.4 ac)	3.5 ha (8.8ac)	2.1 ha (5.2 ac)

Table vi Oak Habitat Loss

	AAC2	A5C1	D1	D13	D13 South Modified	D13 North Modified
Oak habitat in hectares (acres)	10.2 ha (25.2 ac)	5.8 ha (14.3 ac)	0.4 ha (0.9 ac)	3.5 ha (8.6 ac)	0.2 ha (0.4 ac)	3.4 ha (8.4 ac)

S.5.5 Endangered Species Habitat

The project would result in the removal of a substantial amount of wildlife habitat by converting open space to paved highway. Chapters 3 and 4 describe all the special status species that could be affected by the project. The plants and animals listed in Table vi are protected by either the Federal Endangered Species Act, or the California Endangered Species Act.

Table vi Federal and State Threatened and Endangered Species Potentially Occurring in the Project Area

Common Name	Latin Name	Status
Swainson's hawk	*Buteo swainsoni*	State Threatened
American peregrine falcon	*Falco peregrinus anatum*	State Endangered
Aleutian Canada goose	*Branta canadensis leucopareia*	Federally Threatened
California red-legged frog	*Rana aurora draytonii*	Federally Threatened
Vernal pool fairy shrimp	*Branchinecta lynchi*	Federally Threatened
Vernal pool tadpole shrimp	*Lepidurus packardi*	Federally Endangered
Valley elderberry longhorn beetle	*Desmocerus californicus dimorphus*	Federally Threatened
Slender Orcutt grass	*Orcuttia tenuis*	Federally Threatened, State Endangered
Sacramento Orcutt grass	*Orcuttia viscida*	Federally Endangered State Endangered
Bogg's Lake hedge-hyssop	*Gratiola heterosepala*	State Endangered

S.6 Other Federal Actions Required For This Project

S.6.1 NEPA/404 MOU / Concurrence process

A Section 404 Individual Permit would be required from the U.S. Army Corps of Engineers (ACOE) for impacts on wetlands and waters of the U.S. The ACOE issues the permit; however, the U.S. Environmental Protection Agency has oversight and override authority of this permit.

Concurrence has been obtained on the projects purpose and need, range of alternatives and criteria for choosing an alternative by the signatories of the NEPA/404 MOU: the U.S. Army Corps of Engineers (ACOE), U.S. Environmental Protection Agency (EPA), National Marine Fisheries Service (NMFS), the U.S. Fish and Wildlife Service (FWS), Federal Highway Administration (FHWA) and the Department of Transportation (Department).

A wetland verification was completed for the project impacts, however, that verification expired in 1991. The Department met with the ACOE and requested that the expired verification be adequate for use in comparing impacts until a preferred alternative is chosen. At that time, a new wetland delineation and verification would be performed. The ACOE agreed to this approach. (Meeting with ACOE on March 11, 1999)

An Alternatives Analysis prepared in accordance with the Section 404(b)(1) Guidelines and following the NEPA/404 Integration Process would be completed. The Alternatives Analysis identifies the "Least Environmentally Damaging Practicable Alternative" (LEDPA). This information would be used in obtaining the Individual Permit from the ACOE.

After circulation of the Draft Environmental Impact Statement / Report (EIS/R) and identification of the LEDPA, a preliminary agreement with FWS on the project mitigation is required. A "Non-Jeopardy" Biological Opinion pursuant to the Federal Endangered Species Act is also required from the FWS after circulation of the Draft EIS/R.

Written agreement that the preferred alternative is, indeed, the "Least Environmentally Damaging Practicable Alternative" is required from ACOE and EPA. Agreement that the preferred alternative would not seriously degrade the aquatic environment and that the project mitigation plan and implementation schedule is adequate is also required after circulation of the Draft EIS/R.

Figure i Location

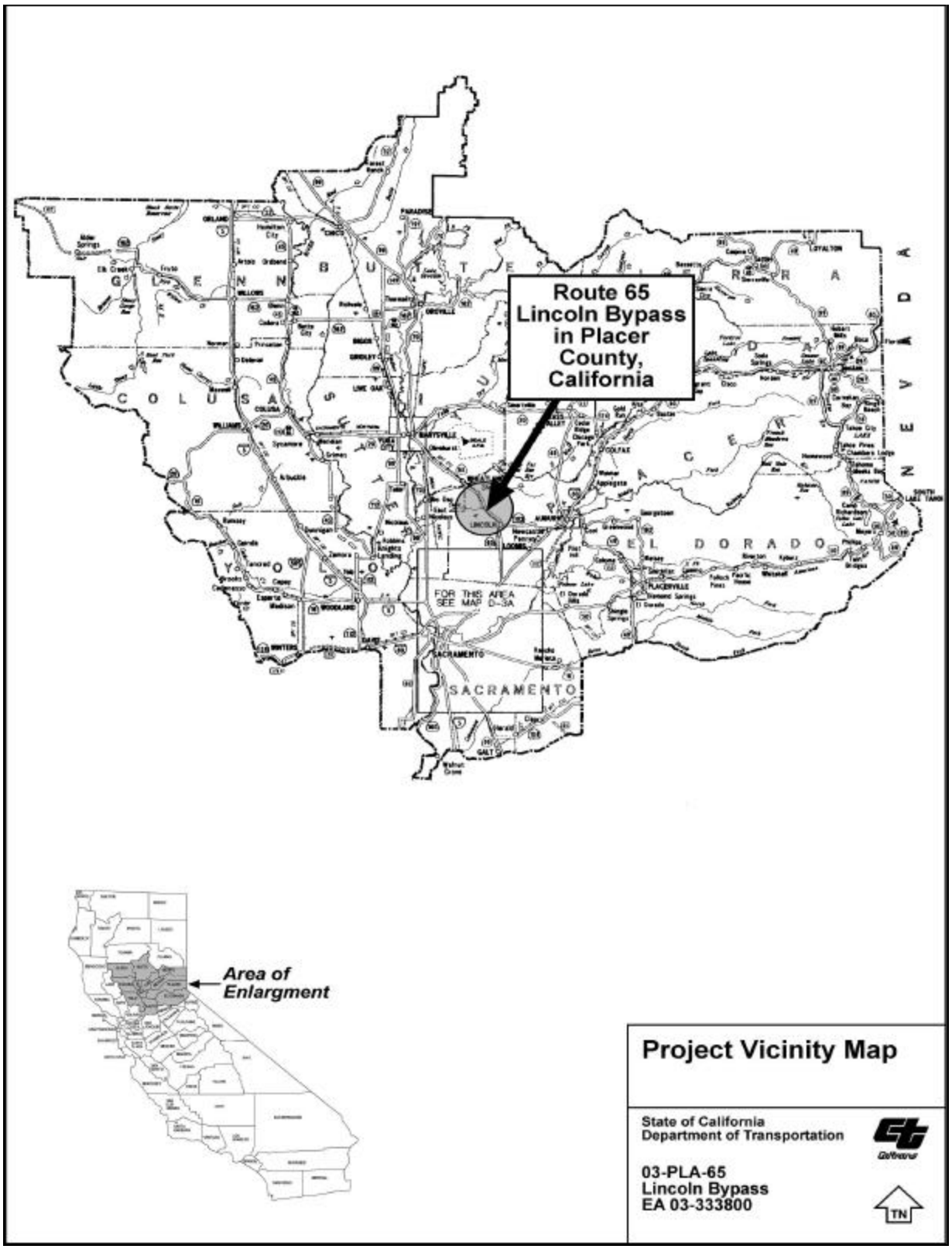


Figure ii Proposed Project

1 PURPOSE & NEED

1.1 INTRODUCTION

The California Department of Transportation (Department) and the Federal Highway Administration (FHWA) propose to modify the adopted route for State Route 65 (SR 65) in Placer County in the vicinity of the City of Lincoln from Kilometer Post (KP) 20 to 38 (Postmile [PM] 12.41/R23.66). This will allow for the identification and preservation of a new corridor for the eventual staged construction of a four-lane freeway with interchanges at selected locations, and the ultimate relinquishment of a portion of the existing SR 65 to the City of Lincoln and Placer County. The project begins near the junction of Industrial Blvd. and SR 65 just south of the City of Lincoln and extends to the Bear River, just north of the town of Sheridan. (Please see Figure i and ii following the Executive Summary.) For a complete description of this project, please see Chapter 2, Proposed Alternatives.

This document has been prepared in conformance with the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA) requirements to address potential environmental effects of the proposed adoption of a corridor and construction of a highway. Its purpose is to help decision makers and citizens make an informed evaluation of this project based on an understanding of its environmental consequences, and to recommend actions to protect, restore and enhance the affected environment by avoiding sensitive areas, minimizing impacts and mitigating for unavoidable impacts.

The following subject matter have been evaluated for potential effects on the proposed project: visual resources, cultural resources, community impacts, land use and economics, hydrology, noise, air and water quality, geology, natural resources, wetlands and hazardous waste. Chapters 1 and 2 cover the purpose of and need for the proposed action and alternatives. The affected environment is described in Chapter 3, and environmental effects and cumulative impacts are discussed in Chapter 4. Chapter 5 discusses irreversible commitments of resources and Chapter 6 discusses unavoidable adverse effects. In Chapter 7 you'll find comments and correspondence related to this project.

This Draft EIS/EIR will be circulated for a period of 45 days. During the draft EIS/EIR circulation period, at least one public hearing will be held to provide an opportunity for public comments and concerns. Comments can also be submitted in writing to the address indicated on the draft EIS/EIR title page.

CEQA requires that there be a balance between the benefits of the proposed project and the unavoidable environmental risks and impacts. If the benefits outweigh the unavoidable adverse environmental impacts, then these impacts may be considered acceptable. Whenever the decision of a public agency allows these impacts to occur, that agency must prepare a "Finding of Overriding Considerations" that states the specific reasons to support the project. This "Finding of Overriding Considerations" will be included in the record of project approval and mentioned in the Notice of Determination (NOD) which will be filed with the State Office of Planning and Research.

The Final EIS/EIR will respond to the comments received in writing and at the public hearing and identify the preferred alternative. No sooner than thirty days after the final EIS/EIR has been made available to the public and those who commented on the draft EIS/EIR, a Record of Decision (NEPA) and a Notice of Determination (CEQA) will be approved documenting the decision made about the project. The Record of Decision explains why an alternative has been selected, summarizes mitigation and monitoring and summarizes efforts made to minimize the environmental impacts.

This project has been included in the 2000/01 Metropolitan Transportation Improvement Program (MTIP) and the 1999 Metropolitan Transportation Plan (MTP). On July 20, 2000, the SACOG signed Resolution 29-2000 finding that the 2000/01 Metropolitan Transportation Improvement Program (MTIP) conforms to the 1994 State Implementation Plan (SIP) under the EPA conformity rule for the Sacramento ozone non-attainment area, carbon monoxide attainment area and particulate matter unclassified area. The conformity determination was signed by the Federal Highway and Federal Transit Administrations on October 5, 2000. At this time, only the purchase of right-of-way is programmed.

1.1.1 Project History

SR 65 between the Placer County line and to just north of Wise Power House Road was adopted as a freeway by the California Highway Commission, (now known as the California Transportation Commission) on May 20, 1964. Since that time there have been considerable changes in land uses along the existing alignment from Roseville through Lincoln. Once primarily agricultural in nature, the past thirty years has seen a shift to industrial, residential and commercial land uses within the routes corridor. In the 1980's, the city of Lincoln, recognizing the need to preserve a corridor for another route due to growth in the area, requested the California Transportation Commission (CTC) to consider a modification to the Route for the portion between Industrial Blvd. to just north of the city of Lincoln (Resolution No. 87-23).

A Project Study Report for a new Route Adoption was prepared by the Department for the Lincoln Bypass in July 1987. In November of that same year, a public

informational meeting was held. (A summary of public involvement can be found in Chapter 7, Comments and Coordination.)

The CTC included the proposed route adoption in its 1988 State Transportation Improvement Program (STIP) Special Studies list of projects.

A Notice of Initiation of Studies was circulated to State, Federal and local agencies and organizations in July of 1989 and the Stage II Work Program, which discussed most of the alternatives now being evaluated, was prepared by the Department in March, 1990.

A Notice of Preparation was sent to the State Clearinghouse on June 18, 1990 and a Notice of Intent was published in the Federal Register on June 28, 1990. These Notices described the project that is now being proposed. Copies of these documents can be found in the Appendix C.

Two more public informational meetings were held; on May 1, 1990 and April 18, 1991 and three newsletters were sent out between April 1990 and March 1993. The information obtained from these workshops and responses to the notices were used to refine the projects alternatives, and studies evaluating the environmental impacts were initiated.

A Major Investment Study (MIS) was completed in October 1995 which evaluated different transportation solutions to the increasing congestion along this corridor. The MIS concluded that a highway facility is the most efficient and cost effective solution to the congestion along this route. The MIS is summarized in Section 1.3.9.

An additional informational meeting was held on September 22, 1999. At that meeting, it was suggested by a number of attendees to combine alternative D1 and D13, thereby moving the alignment further from homes in the Brookview subdivision. This alternative was considered and is described in Chapter 2.

At that meeting, it also came to light that some property on the northern end of the project was slated for a Wetland Conservation Easement. Due to these impacts, two more alternatives, D13 North Modified and D13 Dowd, were proposed that avoided that property. The D13 Dowd alternative was withdrawn from consideration due to operational conflicts. Both are discussed in Chapter 2.

This project is one of several transportation projects responding to the growth in the area. These are listed in Section 1.3.12 later in this chapter.

1.2 PURPOSE OF PROJECT

The purpose for this project was developed with the cooperation and concurrence of the U.S. Fish and Wildlife Service, the U.S. National Marine Fisheries Service, the U.S. Environmental Protection Agency and the U.S. Army Corps of Engineers under the terms of the NEPA/404 Memorandum of Understanding (MOU). The project purpose is

to relieve congestion and improve safety on existing SR 65 through the City of Lincoln and provide for a regional traffic solution to accommodate projected traffic volumes through the year 2025.

1.3 NEED FOR PROJECT

Continuing growth in South Placer County and the Sacramento Valley has resulted in the need for a new and improved SR 65 corridor, which would alleviate congestion in the City of Lincoln while providing for improved inter-regional traffic flow. The existing facility through Lincoln is a "Main Street" highway, which will not serve the ultimate transportation needs of the region. Due primarily to congestion, the accident rate in downtown Lincoln is higher than the average rate for this type of facility. As traffic volumes continue to increase, SR 65 within downtown and south of Lincoln is expected to exceed available capacity by the year 2005.

1.3.1 Existing Roadway

SR 65 serves as a major north-south highway along the east side of the Sacramento Valley. It was included as part of the State Highway System under authorization of the State Highway Act of 1909, and was made part of the California Freeway and Expressway system in 1959. The original construction from Roseville to Lincoln, designated as SR 3, took place between 1912 and 1914 and was adopted as a freeway by the California Highway Commission (now known as the California Transportation Commission [CTC]) on May 20, 1964. SR 65 connects the urbanized areas of Sacramento and Roseville with the cities of Lincoln, Wheatland, Marysville and Yuba City. SR 65 begins in Roseville at I-80, extending to the junction of SR 70 in Yuba County. Legislation was passed in 1985 extending the legislative description of the route to SR 99 in Yuba City.

The Roseville Bypass was completed from I-80 to Pleasant Grove Creek Bridge (KP 7.7 to 14.2 [PM R4.8 to R8.8]). The Harding Boulevard interchange, a locally funded project at KP 9.5 (PM R5.9), began construction in the summer of 1989 and was completed in 1992. Between Pleasant Grove Bridge and Industrial Boulevard, SR 65 is a four-lane expressway with an intersection at Sunset Blvd.

The downtown business section begins just north of Auburn Ravine at KP 21.4 (PM 13.3) and continues to Gladding Road. Beginning at First Street, one through-lane in each direction is provided with a continuous two-way left turn lane. On-street parking and sidewalks are also provided. Traffic signals are located at Westwood Boulevard, First Street, Third Street, SR 193 (also known as Fourth St.), and Fifth and Seventh Street. The left turn lane ends near Gladding Road, at the edge of town.

The existing road between Lincoln and Sheridan is a two-lane conventional highway. It is parallel to and east of the railroad tracks. Right of way in this vicinity is typically 30.5 to 33.5 m (100-110 ft) wide. Between Lincoln and Sheridan, there are two passing locations; each approximately 2.4 km (1.5 mi) long. Curves and left-turn channelization along this section of highway limit passing opportunities.

From Sheridan north, the route continues as a two-lane conventional highway, passing through the town of Wheatland, slowing down traffic to 35 mph. Three miles north of Wheatland, the highway becomes a four lane freeway and terminates at the SR 99 in Yuba City.

1.3.2 Traffic Summary

The Lincoln Bypass will provide a substantial benefit in accommodating regional traffic and helping to reduce congestion in and south of Lincoln. Without the Bypass future traffic congestion will create gridlock conditions surrounding Lincoln.

As a result of the gridlock in Lincoln, traffic will divert to local streets which will then become congested, emergency vehicles may be unable to respond in a timely manner, commute, local, recreation and regional trip travel times will increase dramatically and overall quality of life will suffer.

The Lincoln Bypass will reduce overall delay within the Study Area by over 300% and will increase overall speeds in the Study Area by over 250% in 2025 compared to the "No Build" Alternative. See Table 1-4 and Table 1-5 for more detailed information. The ultimate project, which will not be built until additional funding becomes available, will provide speeds of 105 kph (65 mph) compared to speeds of less than 40 kph (25 mph) on the existing route between Industrial Avenue and the Bear River, which, coincidentally, also marks the Placer/Yuba county line.

Traffic Study Methodology

Two types of traffic models were used to complete the traffic study for the Lincoln Bypass: a regional demand model and micro-simulation model. A regional demand model is comprised of many zones, which include land use elements such as the number of houses, amount of employment and future housing and employment changes in and around the City of Lincoln. This demand model provides the future traffic volumes and determines the amount of traffic that will use the Bypass, interchanges and local roads.

The Regional Demand Model used for this project consists of two traffic models, the Yuba/Sutter Travel Demand Model (YSTDM) and the Butte County Transportation Model. The Sacramento Area Council of Government (SACOG) is responsible for the YSTDM and the Butte County Association of Government (BCAG) is responsible for the Butte County Model. The two transportation models were combined into one model in order to analyze traffic demand using roadway corridors throughout the various counties.

Included in the combined model are Butte, Sutter and Yuba Counties, and parts of Placer, Sacramento and Yolo Counties.

Land-use for years 1998, 2015 and 2025 and the model files were obtained from SACOG and BCAG covering their respective areas. Recent count data and future road network information were obtained from all local agencies and used where needed. The Statewide Travel Survey (Department) and the Household Travel Survey Report #1 (SACOG) were used for the number of trips, average trip length and other pertinent information.

The CORSIM Model

If a traffic system is simulated on a computer, it is possible to predict the effects of a proposed project on the traffic system's operational performance. Outputs from a simulation model also provide the basis for optimizing this performance.

Starting in the mid 1970's, the FHWA recognized this need and ultimately TRAF was developed. TRAF, abbreviated from TRAFFIC, consists of an integrated set of simulation models, which includes CORSIM. CORSIM stands for corridor simulation and consists of a freeway network named FRESIM and a surface street network named NETSIM.

CORSIM is a micro-simulation model, which means each vehicle using a specified car-following logic is a distinct object that is moved every second and its behavior interacts with the surrounding environment. This may include other vehicles, control devices (such as traffic signals) and roadway characteristics. In addition, vehicle types can be specified with different operating performance characteristics and driver behavior characteristics (passive or aggressive) can be assigned to each vehicle. Many other model elements can be modified or customized. CORSIM is a stochastic model, which allows vehicles to be simulated in a more realistic manner by using randomness in the analysis.

A micro-simulation model has the ability to evaluate the proposed improvements in detail and provide a myriad of outputs. CORSIM also has the ability to show vehicle animation, which is useful to show the traffic study results to the project development team, to the public and to project management or elected officials.

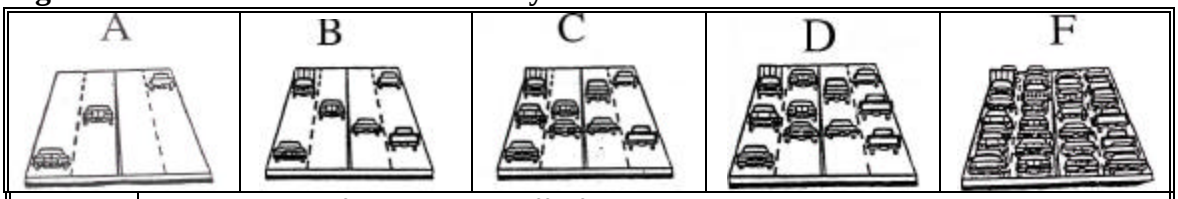
The CORSIM micro-simulation traffic model used for this project compares different alternatives over different time periods. These include the 1998 Base Year, 2015 and 2025 No Build, and the D13-D1, A5C1-AAC2 alternatives for years 2015 and 2025. The model outputs include such items as the amount of traffic diverted from the existing SR 65 to the new Bypass and average speeds on the Bypass and on the old SR 65 for each of the alternatives. It is important to note the traffic model is more accurate in comparing the relative difference between alternatives than in predicting the future results as absolute values.

1.3.3 Level of Service

Segments of highway or roadway are evaluated for present and/or future traffic handling capacity through use of standardized Level of Service (LOS) grading systems. LOS is a qualitative measure describing operational conditions within a traffic stream or at an intersection, generally described in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience and safety. LOS are designated A through F, from best to worst, and they cover the entire range of traffic operations that may occur. Figure 1-1 illustrates what is meant by LOS with regard to a freeway segment with a free flow speed of 105 kph (65 mph). Different criteria are used to determine the Levels of Service at intersections, illustrated in

Table 1-1. The Lincoln Bypass will be designed for a Level of Service C to E.

Figure 1-1 Level of Service for Freeways



A	Highest quality of service. Free traffic flow, low volume and densities. Little or no restriction on maneuverability or speed. 105+ kph (65+ mph). No delay.
B	Stable traffic flow, speed becoming slightly restricted. Low restriction on maneuverability. 105 kph (65 mph). No delay.
C	Stable traffic flow, but less freedom to select speed, change lanes or pass. Density increasing. 104 kph (64.5 mph). Minimal delay.
D	Speeds tolerable but subject to sudden and considerable variation. 100 kph (62 mph). Minimal delay.
E	Unstable traffic flow with rapidly fluctuating speeds and flow rates. Short headway's, low maneuverability and low driver comfort 84 kph (52 mph). Considerable delay.
F	Stop and go traffic. Speed and flow vary. Considerable delay.

LOS at intersections is defined in terms of delay, which is a measure of driver discomfort and frustration, fuel consumption and lost travel time. LOS A represents no delay and LOS F represents very heavy traffic congestion and considerable delay. Longer delays may result from some combination of unfavorable traffic lights progression, long cycle lengths or a high volume to capacity ratio. LOS D is considered by many agencies to be the limit of acceptable delay. LOS F results in delays over one minute long, considered by many drivers to be unacceptable. This level often occurs with over-saturation, i.e. when arrival flow rates exceed the capacity of the intersection.

Table 1-1 LOS at Intersections

LOS at intersections	**LOS A**	**LOS B**	**LOS C**	**LOS D**	**LOS E**	**LOS F**
Delay (in seconds)	<5-10	10-20	15-25	35-55	55-80	> 60-80

1.3.4 Traffic Volumes and Level of Service

Predicted traffic volumes for the bypass were determined by using a combination of the the Department' 1998 Tri-County Travel Demand Model (CTCTDM), various consultant prepared traffic studies for local development, a 1998 travel survey and the City of Lincoln General Plan. Traffic volumes on the Bypass can be broken into two components; local traffic and through traffic (regional and interregional). An estimated 40% of the 2025 northbound traffic on the Bypass will access local developments and the existing industrial complex near the airport. The remaining 60% will be "through" traffic continuing north towards Marysville.

Table 1-2 shows the existing 1998 traffic volumes as well as future traffic projections for the "No Build" and "Build" scenario for the year 2015 and 2025. The worst case was used to illustrate congestion. Thus, the northbound evening peak hour volumes are used to illustrate the general congestion of the roadway since northbound is more congested than southbound in the evening and evening peak hours are generally worse than morning peak hours due to the combination of commuter trips and other trips (shopping, errands, school, etc).

The LOS for each segment is based on additional factors than just the volumes shown in the table below. The additional factors include the percentage of truck traffic, the type of driver (commuter or recreational) and roadway characteristics such as shoulder width, lane width and number of driveways.

Table 1-2 NB/PM Peak Hour Traffic Volumes, Existing and Predicted

Existing Route								
	Industrial to First[1]		First to Seventh[1]		Seventh to Wise[1]		Wise to Co. Line[1]	
Year	VOL	LOS[1]	VOL	LOS	VOL	LOS	VOL	LOS
1998	1230	E	1050	D	620	D	700	D
2015	2000	F	1200	F	1100	E	1000	E
2025	2300	F	1200	F[2]	1100	F	1000	E
Existing Route With Bypass								
2015	1400	E	1000	D	750	D	500	D
2025	1400	E	1100	F[3]	850	D	600	D
On Bypass Alternative D								
	Industrial to Nelson[1] (Four lanes)		Nelson to Jct. of old SR 65[1]					
2015[4]	2200	C	1350	E				
2025[5]	2300	C	1500	C				
On Bypass Alternative AC								
2015[4]	2300	C	1350	E				
2025[5]	2300	C	1500	C				

Footnotes

[1] Traffic volumes for each segment are at select locations.
[2] LOS for four hours
[3] LOS for one hour.
[4] Minimum project (4 lanes up to Nelson or Nicolaus then to 2 lanes)
[5] Ultimate project (4 lanes throughout)

Traffic demand is 600 vehicles greater than capacity on SR 65 south of Industrial Boulevard for 2015 and 2025 "no build" and 2025 "build" which creates a bottleneck

preventing the traffic from getting to the bypass. This moderates the traffic congestion on the bypass in future years.

The LOS at intersections is illustrated in Table 1-3.

Table 1-3 Intersection Level of Service on Existing SR 65

Intersections with SR 65	1999 LOS	2015 LOS NO BUILD	2015 LOS BUILD	2025 LOS NO BUILD	2025 LOS BUILD
Sterling	Not Applicable	F	D	F	D
Westwood	C	F	D	F	E
Wise	C	E	D	E	D
Riosa	D	F	D	F	D

Continuing growth in residential, commercial and industrial development in and around the City of Lincoln has resulted in congestion on existing SR 65 through the Study Area. In 1998, SR 65 operated at an LOS D through the project area and was projected to decline to LOS E/F by 2005. Approved proposed development in and around the City of Lincoln will significantly add to the congestion. Northbound traffic demand south of Industrial Avenue is expected to increase approximately 300% over the next 25 years. Cross traffic resulting from numerous driveways, signalized intersections and proposed future connections will further contribute to the deterioration of the level of service in the downtown area.

Regional trips originating and terminating in Lincoln are expected to increase as the City's economy grows. As of 1998, there were 19,000 vehicles per day on SR 65 in the City of Lincoln. Traffic north of Lincoln is projected to increase from 11,000 per day to approximately 32,000 vehicles per day by the year 2025. South of Lincoln, traffic volumes on SR 65 are expected to increase from 20,000 vehicles per day to approximately 70,000 vehicles per day by the year 2025.

Table 1-4 illustrates the congestion that is currently experienced on SR 65 by comparing the overall speed and total delay for the existing road, "no build" and "build" scenarios. The Study Area includes the greater City of Lincoln area and north past Sheridan to approximately the Placer/Yuba county line.

The project was broken up into minimum project and ultimate project due to funding constraints. A more detailed explanation of project phasing is available in Chapter 2. Briefly, the **minimum** project is to construct a four lane expressway to Nelson Lane (D alternatives) or Nicolaus Road (AC alternatives) with an interchange at Industrial Boulevard. The Lincoln Crossing development will construct an interchange at Westwood Boulevard independently from this project. A two lane facility will be constructed for the remainder of the project, with at-grade intersections at Nelson, Nicolaus, Wise and Riosa Roads. **Ultimately**, the project will be a four lane freeway with interchanges the entire length of the project.

Table 1-4 Overall Speeds And Delays Within The Entire Study Area

Alternative	Overall Speed During the PM peak hour (mph)		Overall total delay (vehicle hours)	
1998 Base	70 kph (44 mph)		70	
2015 No Build	24 kph (15 mph)		1850	
2025 No Build	21 kph (13 mph)		2850	
2015 Minimum Project				
D Alternatives	56 kph (35 mph)		500	
AC Alternatives	56 kph (35 mph)		500	
2025 Ultimate (4 lane freeway)				
	Local roads	Freeway	Local roads	Freeway
D Alternatives	35 kph (22 mph)	89 kph (55 mph)	750	80
AC Alternatives	35 kph (22 mph)	89 kph (55 mph)	750	95

Overall speeds represent the average speed of all roads in the Study Area including SR 65, SR 193 and most local roads. Overall speeds include the impacts of traffic signals, stops signs, traffic volumes and the railroad crossing on SR 65 at Sheridan. Overall delays represent the difference between free flow speed and the predicted speed.

The results show that if the Bypass is not constructed, overall speed will decrease and overall delay will increase. Speeds increase and delays decrease between the scenarios as traffic signals on the Bypass (with the minimum and Phase 1 projects) are replaced with interchanges and overcrossings for the ultimate freeway project.

Table 1-5 shows the average speeds on SR 65 without the project, with the new SR 65 bypass and on the "old" SR 65 from Industrial Ave to the Placer/Yuba county line. The results of the table below show an increase in speed with the Bypass. Average speed will also increase on "old" SR 65 compared to the "no build" because traffic will be diverted to the Bypass.

Table 1-5 Average Speeds- Industrial Ave. to Yuba County Line (PM peak hour)

Alternative	Northbound	Southbound
Existing SR 65		
1998 Base	82 kph *(51 mph)*	84 kph *(52 mph)*
2015 No Build	26 kph *(16 mph)*	55 kph *(34 mph)*
2025 No Build	23 kph *(14 mph)*	34 kph *(21 mph)*
Existing Route with 2015 Minimum Project		
D Alternatives	56 kph *(35 mph)*	56 kph *(35 mph)*
AC Alternatives	56 kph *(35 mph)*	56 kph *(35 mph)*
On Bypass with 2015 Minimum Project		
D Alternatives	72 kph *(45 mph)*	80 kph *(50 mph)*
AC Alternatives	72 kph *(45 mph)*	80 kph *(50 mph)*
Existing Route with 2025 Ultimate Project		
D Alternatives	56 kph *(35 mph)*	40 kph *(25 mph)*
AC Alternatives	56 kph *(35 mph)*	40 kph *(25 mph)*
On Bypass with 2025 Ultimate Project		
D Alternatives	105 kph *(65 mph)*	105 kph *(65 mph)*
AC Alternatives	105 kph *(65 mph)*	105 kph *(65 mph)*

1.3.5 Safety

Accident rates on existing SR 65 within the city of Lincoln are consistently higher than the average rate for this type of highway. The proposed project will relieve congestion and thus reduce accident potential in downtown Lincoln by providing a four-lane freeway to carry regional "through" traffic around the city to the west. The average accident rate on a conventional highway such as this is 1.8 accidents per million vehicle miles. A four-lane controlled access freeway would have an average total accident rate of 1.07 accidents per million vehicle miles. The table below shows average accident rates for highways similar to this one, compared to the actual accident rates at different sections along SR 65 from the beginning of the year 1995 to the end of the year 1998.

Table 1-6 Accident Rates (per million vehicle miles)

	Average			Actual		
	Fatal	**Fatal + injury**	**Accident Rate**	**Fatal**	**Fatal + injury**	**Accident Rate**
Moore Rd	0.005	0.12	0.26	0.00	0.14	0.14
First St.	0.003	0.30	0.77	0.00	0.26	1.10
Second St.	0.003	0.11	0.26	0.00	0.07	0.78
Third St.	0.005	0.16	0.42	0.00	0.35	1.21
Fourth/Rt. 193	0.004	0.19	0.47	0.00	0.44	1.39
Fifth St.	0.003	0.39	0.77	0.00	0.18	0.94
Sixth St.	0.005	0.16	0.42	0.00	0.19	0.78
Seventh St.	0.005	0.16	0.42	0.00	0.36	1.21
Gladding Road	0.003	0.11	0.26	0.00	0.00	0.08
Mill Road	0.05	0.12	0.26	0.00	0.00	0.11
Sheridan at RR x'ing	0.065	0.81	1.61	0.41	1.64	4.11

The longer alternatives would continue the bypass to the north of Sheridan superseding the existing at-grade railroad crossing which would also reduce the accident potential in Sheridan at the railroad crossing.

1.3.6 Bicycle Facilities

At this time, bicycle use in Lincoln is limited to existing streets without bike lane demarcation. Lincoln's bike plan is shown in Figure 1-2. The city has adopted a bike route plan, which is incorporated into the Placer County Bikeway Master Plan (see Figure 1-3). The proposed project does not accommodate bicycles, however the existing SR 65 will be available for bicycle use, with reduced auto traffic, providing for a safer and more enjoyable bike ride.

Figure 1-2 Lincoln Bike Route Plan

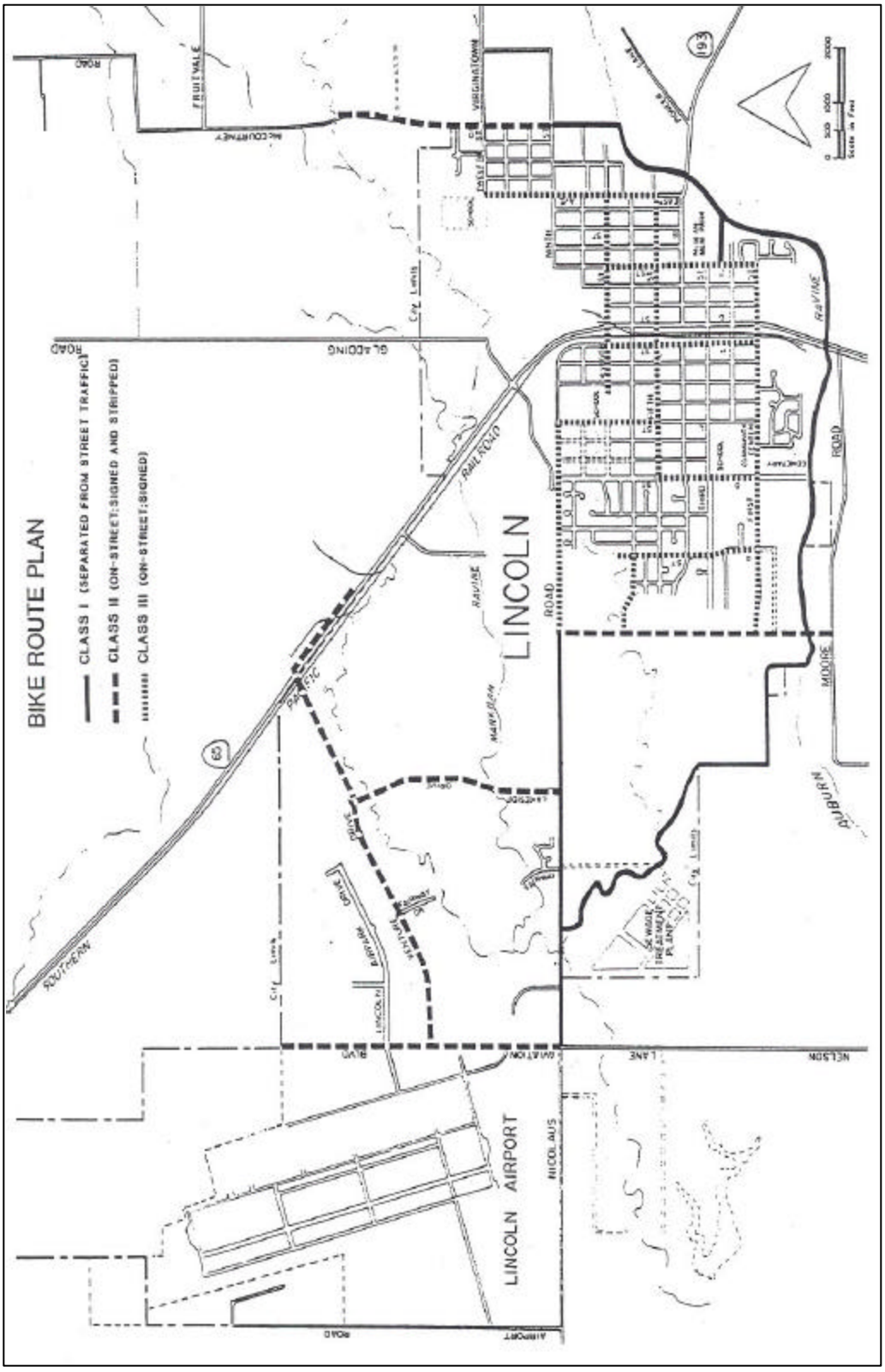
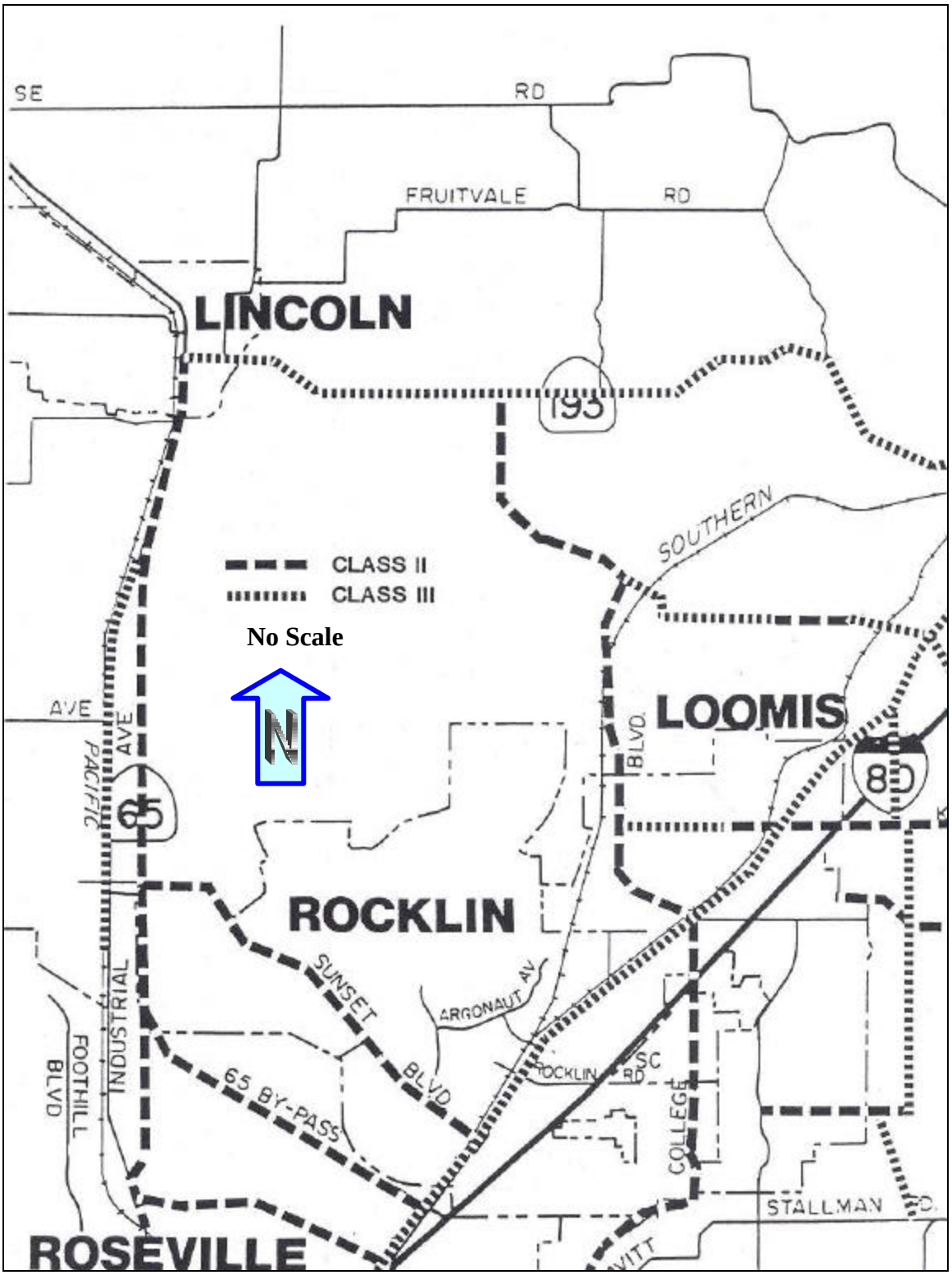


Figure 1-3 Placer County Bikeways



1.3.7 Airports

The Lincoln Municipal Airport is an important transportation link, serving recreational and corporate needs. The airport is operated by the Lincoln Airport Authority, a public entity of both the City of Lincoln and Placer County. Due to its proximity to major industrial and population centers in the South Placer region, the Lincoln Airport has become an attractive alternative to the Sacramento International Airport, especially for executives of major industries in Rocklin and Roseville. In the year 2000 there were 210 aircraft based at this airport, with a total of 72,000 flights in and out that year. The airport is designed to accommodate an additional runway, which would double its capacity, however expansion is not scheduled in the near future. Alternatives D1 and D13 include improvements to Nelson Lane, which will provide for convenient access to the airport from the proposed highway.

1.3.8 Existing Transit Services

Buses

Greyhound operates an express bus route between Roseville and Marysville. In addition, intercity bus transit service is being provided between the city of Roseville and SR 193, just outside of the City of Lincoln. Expansion of this service to Lincoln is currently identified in the Placer County Short-Range Transit Plan.

The City of Lincoln is currently served by the Lincoln Transit Service, consisting of weekday fixed routes within the city limits.

Park and Rides

There is one Park and Ride lot within the Roseville/Lincoln/Marysville corridor. It is located on Sierra College Boulevard and SR 193 east of Lincoln. It has 14 parking spaces and no bike lockers and is approximately 21 percent occupied. In addition, a Park and Ride potentially serving SR 65 is located off of Interstate 80 at the junction of SR 193. That Park and Ride has 37 spaces and is generally 33 percent occupied.

An informal Park and Ride is located in McBean Park, next to the Pavilions. This is not a Department facility, and no statistics are available on its use.

The cities of Roseville, Rocklin, Lincoln and Placer County have jointly set up ride sharing ordinances for South Placer County. The ordinances are designed to ensure that employers will share in the responsibility of mitigating some of the traffic and air quality impacts resulting from the increase in employment and auto traffic along this corridor. Larger employers are required to take certain actions to promote ride sharing among their employees; including designating a transportation coordinator to provide employees ride share and commute options information, establishing preferential parking for car/van

pools and preparing a transportation plan which would achieve a 30% reduction in vehicle trips. The proposed project includes a Park and Ride lot at Industrial Boulevard.

Rail

Roseville-Lincoln-Marysville Passenger rail is being examined by the Placer County Transportation Planning Association (PCTPA) as a modal option for longer commutes. Amtrak terminals are located in Sacramento and Marysville and the line goes through the City of Lincoln, however, the Amtrak Starlight is not anticipated to stop in Lincoln within the next 20 years. Currently, the Capital Corridor Intercity rail runs between Sacramento and San Jose, with two trips per day to Colfax, stopping in Roseville. This service is expected to generate a ridership of 8,700 passengers a day by the year 2010.

Southern Pacific Railroad operates a mainline through the center of Lincoln along the west side of SR 65. This line is used only for freight service. The railroad tracks cross seven streets at-grade in the downtown area, and the gate controlled track crossings can cause delays to side street traffic.

1.3.9 Major Investment Study (MIS)

An MIS was completed October 25, 1995, focusing on SR 65 from Industrial Blvd. to the Bear River. This study was written to meet metropolitan planning regulations set forth by the Inter-modal Surface Transportation Efficiency Act (ISTEA) of 1991. The MIS evaluated the efficiency and cost effectiveness of a full range of modes of transportation to be considered as solutions to transportation problems on SR 65.

Although written by the Department, the MIS was developed with the cooperation of the Sacramento Area Council of Governments (SACOG), the Placer County Transportation Planning Agency (PCTPA), the City of Lincoln, Placer County Department of Public Works, local and regional transit operators, the Federal Highway Administration (FHWA) and the Federal Transit Authority (FTA). Through a collaborative process with these agencies, the MIS evaluated a full range of alternatives including:

Four-lane freeway bypass of Lincoln on new alignment

The four-lane freeway bypass consists of an access controlled freeway from Industrial Blvd. to the Bear River, including a partial interchange at Industrial Blvd. and full interchanges at Nelson Lane, Wise Road and Riosa Road with an overcrossing at Nicolaus Road. Total cost was estimated in 1994 at $71 million.

Minimum Bypass alternative on a new alignment

This alternative consists of a four-lane expressway from Industrial Blvd. to Westlake (now known as Westwood) Blvd. The remainder of the project would be an access-controlled two-lane expressway ending at the Bear River. This

alternative includes a partial interchange at Industrial Blvd. and at-grade intersections at Nelson Lane, Nicolaus, Wise and Riosa Roads with an undercrossing at Dowd Road. Total cost was estimated in 1994 at $39.8 million.

Two-lane bypass of Lincoln on new alignment

This alternative includes the construction of a two-lane bypass of Lincoln from Industrial Boulevard to just south of Nicolaus Road. This alternative includes a partial interchange at Industrial Boulevard and a full interchange at Nelson Lane, which would serve the Lincoln Airport. At-grade intersections would be provided at Nicolaus Road, Wise Road and Riosa Road. Total cost was estimated in 1994 at $54 million.

Intercity Transit bus service

This alternative examines the possibility of expanding existing intercity bus service, a commute oriented rubber-tire transit service connecting the areas of Roseville, Rocklin, Lincoln and Marysville. The estimated cost is not available.

Transportation System Management/Travel Demand Management (TSM/TDM)

This alternative covers a range of improvements and strategies that aim to reduce the demand on and increase the efficiency of the existing transportation system, including measures such as the expansion of park and ride facilities with connections to intercity transit bus service, ride matching, car/vanpooling and teleconferencing. The estimated cost is not available.

Widening existing SR 65 to four lanes

The existing alignment would be upgraded to four lanes and from Moore Road through Gladding Road a continuous left turn lane would be constructed. The proposed upgrades through downtown Lincoln could generally be accomplished by eliminating on-street parking and narrowing the sidewalks from 3.6 m to 1.5 m (12 to 5 ft). Total cost was estimated in 1994 at $10 million.

Commuter rail

Commuter rail connecting Roseville to Marysville is addressed in the Corridor level study being prepared by the PCTPA. A breakdown of costs associated with this alternative are $13 million to bypass the Roseville Rail yard, $16 million to operate and maintain a commuter rail over a 20 year period, $15 million capital costs for rolling stock and an undetermined amount for track rights, possibly as much as $20 million, for a total of $64 million.

No Build - Leaving SR 65 through Lincoln as is

The no-build alternative refers to leaving the SR 65 as it is today, with no capacity increasing projects.

These alternatives were evaluated and scored, and are listed above in the order they ranked. It was determined that the four-lane freeway bypass offered the best long-term solution to the congestion problem on SR 65 by improving safety and reducing travel through the City of Lincoln. All cooperating agencies approved the recommendations and signed the final MIS.

The MIS is available for review at the Department's District 3 office at 2800 Gateway Oaks Dr., Suite 100, Sacramento, CA 95833. Qualitative and quantitative criteria were established to accurately measure each of the alternatives effectively and ensure that they meet the purpose and need of the project. These criteria are identified below. A summary table of the Alternatives Evaluation is presented in Table 1-7. The numbers in the table indicate the score each criteria was given. A score of 3 was high and a score of 0 indicated no benefit.

- Delay, based upon through trips.
- Cost effectiveness.
- Environmental impacts.
- Safety.
- Fiscal constraints.
- Effects on agricultural lands.
- Indirect costs.
- Funding priorities for the county.

Using these criteria, the alternative investment strategies: rail transportation, light rail transportation and HOV lanes, although important when considered in a corridor analysis context, were eliminated from consideration in the MIS.

Table 1-7 Summary of MIS

Criteria						Project Costs		
Alternatives	**User Benefits[1]**	**Safety Benefits[2]**	**Envir.[3] Benefits**	**Local, County, Region perspective[4]**	**TotalScore**	**Const. RW Maintenance ($ millions)**	**Capital Operating & Maintenance ($ millions)**	**Total Cost ($millions)**
No-Build	0	0	2	0	2	$0.0/$0.0/$1.4	~	$1.4
4-Lane on existing alignment	0	1	2	1	4	$5.8/$4.2/$1.9	~	$11.9
2 lane minimum bypass	2	2	1	3	8	$30.2/$9.6/$1.5	~	$41.3
4-lane freeway bypass	3	3	1	2	9	$61.0/$9.6/$1.3	~	$56.1
Commuter Rail	1	0	3	2	6	~	$38.0 $20 for track rights $16.0	$74.0
Intercity Transit Bus Service	1	0	3	2	6	~	$0.3 $6.0	$6.3
TSM/TDM	1	0	3	1	5	~	not available	not available

[1]User Benefits: A measure of Delay savings.
[2]Safety Benefits: Based on amount of savings due to reduced accidents.
[3]Environmental Benefits: Based on the alternatives potential to impact environmental resources.
[4]Local, County and Regional Perspective: Cooperative scoring of alternatives by City of Lincoln, Placer County Public Works and Placer County Transportation Planning Agency.

1.3.10 SR 65 Transportation Concept Report

The Transportation Concept Report (TCR) is a Department's long-term planning document that evaluates the conditions of a given state transportation corridor, and establishes a twenty year planning concept. In addition to the twenty-year concept, the TCR also looks at the ultimate transportation concept that examines the corridor needs beyond the twenty-year planning period. Forecasting beyond the twenty-year period is difficult for several reasons such as changes in future land use zoning beyond the scope of the twenty-year general plan build-out and unknown funding constraints. Therefore, any concept identified for the "Ultimate" facility must be considered speculative.

As part of route concept development, the TCR documents the planning strategies of the long-range plans identified by the Regional Transportation Planning Agencies (RTPA) and Metropolitan Planning Organizations (MPO) within a given state highway route corridor. Since state highway routes often pass through several regional planning agency jurisdictions, the TCR assimilates the regional strategies and consolidates these strategies into one comprehensive corridor-specific document.

SR 65 Route Concept Rationale

SR 65 is a road of both local and regional importance serving as a connector for both automobile and truck traffic originating on the I-80 corridor (in the Roseville/Rocklin area) and the SR70/99 corridor (in the Marysville/Yuba City area).

There are three primary sections with unique characteristics along the SR 65-corridor. Different land use classifications and growth potentials govern each sections level of service (LOS) and classification. The TCR further breaks the sections into segments based on physical characteristics of the roadway such as number of lanes, whether the road is a freeway or a conventional highway, whether the road is in an urban or a rural setting, or some other tangible change in the roadway from one location to the next. Segments always break on county boundaries. These segments allow the characteristics of the route to be viewed and analyzed in manageable portions based on like characteristics. SR 65 is divided into 6 distinct segments. Table 1-8 shows the sections, segments and the current and Concept LOS for the segment. The Sections are described below and the segments are further described in Table 1-8.

The **first section** of SR 65 is located between the I-80 interchange in Roseville and the Yuba County line at the Bear River. At the present time commuter, truck and local traffic volumes are high in this section and it is characterized by a significant growth of industrial, commercial and residential development. The projects under consideration for this area, as well as the proposed land development, will have major impacts on the transportation infrastructure. Without improvements to the roadway capacity, the General Plan concept of LOS D in the coming years will be difficult to maintain between

Lincoln and Roseville. The proposed Lincoln bypass will help to alleviate a substantial amount of the present congestion through the City of Lincoln.

The **second section** is the portion between the Yuba County line and the junction of SR 70. This section is mostly rural/urban and serves as a commuter link between Yuba City/Marysville and Roseville/Rocklin areas. This segment is identified as having a more stable population growth rate than the more southerly portion of the route. The concept LOS D will not be as difficult to maintain. Significant impacts to the transportation infrastructure would occur with the construction of a major motor sports complex with a Formula One raceway along with the existing Sacramento Valley Amphitheater. These could cause peak traffic problems associated with major events.

The **third section** is the un-built portion of SR 65 between SR 70 and SR 99 known as the "Third Bridge Crossing of the Feather River" project. This segment has been identified in by SACOG as being one of the high priority improvements in the region.

Table 1-8 Transportation Concept Report Summary

	Segment	County	Post KM	Post Mile	Current Facility	Current LOS	Concept Facility	Concept LOS	Ultimate Transportation Corridor
Section 1	**1**	PLA	7.8/13.3	4.9/8.3	E/4	D	F/6	E	F/8
	Segment 1 begins at the interchange of I-80 and SR 65 and continues to the Blue Oaks Interchange. This segment is a limited-access freeway with commercial and retail development on both sides, either currently in use, or planned for the near term. This development includes a regional shopping mall that contributes a significant amount of traffic to the route. Because of the proximity to I-80 there will be increased stress on the interchange and mainline as traffic both enters and exits SR 65 at this location.								
	2[1]	PLA	13.3/19.2	8.3/12.3	E/4	B	F/4	E	F/6
	Segment 2 starts at the Blue Oaks interchange and continues to the intersection of SR 65 and Industrial Avenue. This segment is currently operating as a four-lane expressway with high traffic counts due to significant industrial development to the west and commercial and residential development to the east. Three major interchanges are planned for this segment to accommodate the rapid growth of traffic volume. The interchanges are all to be financed through local impact fees.								

Section 2	**3**[2]	PLA (Lincoln Bypass)	19.2/39.0	12.3/24.3	C/2	E	E/4	D	F/6
	Beginning at Industrial Avenue is the proposed Lincoln Bypass. The Bypass will allow a more efficient movement of through traffic than the present route, which travels through downtown Lincoln as a "Main Street" with traffic signals and significant cross traffic. The bypass proposals under consideration will rejoin the current alignment of SR 65 at approximately the county line (PM 24.3). The segment is approximately 12 miles long, and is currently operating at a LOS E. The existing "Main Street" segment is characterized by several unique features, and can reasonably be broken down further into three subsections: The first subsection includes the portion of the route between the Industrial Avenue intersection and the city limits (PM 13.172). This area is characterized by several large, mixed-use developments. Each of these developments will add significant traffic to the already stressed capacity of SR 65. While the proposed projects contain varying amounts of land devoted to local employment opportunities it can reasonably be assumed that there will be significant travel to and from other local and regional employment destinations. The second subsection of this segment begins at Auburn Ravine Bridge and includes the conventional highway that runs through the City of Lincoln. There are signalized intersections and a 25-MPH speed limit through the city. In this segment there is local traffic added to the highway. Due to the turning movements of local traffic along this subsection, congestion is significant. LOS F is observed during PM peak hour within the city limits with several cycles being needed to perform some turning maneuvers. The area is characterized by on-street parking and limited roadway width. Existing sidewalks and businesses make the prospect of acquiring additional Right of Way in the area beyond Third Street prohibitively expensive. The crossing of Markham Ravine (PM 14.8) marks the end of this subsection. Further study needs to evaluate a new connection between SR 193 and SR 65 once the alignment for the Lincoln Bypass is determined. The third subsection runs from the northern city limits of Lincoln (approximately at the Markham Ravine Bridge) to the Placer/Yuba county line located on the Bear River and delineated by the Bear River Bridge (PM 24.3). The highway in this segment runs in a northwesterly direction and is a conventional two-lane rural highway that is currently operating at a LOS D. The Bear River Bridge is non-standard in width, and widening should be considered as part of the overall route improvement and realignment plan. Depending on the final adoption of an alignment for the Lincoln Bypass, the northern end of the bypass should intersect the existing route within this subsection.								
	4	YUBA	0.0/7.6	0.00/4.7	C/2	D	E/4	E	F/4
	This segment begins at the Bear River, the County line, and continues through the City of Wheatland to the beginning of the freeway at approximately South Beale Road (PM4.7). Although the traffic counts along this segment are relatively low, congestion exists within the City of Wheatland resulting in delays and contributing to a generally poor level of service. A bypass of Wheatland will generally better facilitate the efficient movement of goods and people along this corridor.								
	5	YUBA	7.6/15.1	4.7/9.4	F/4	A	F/4	C	F/4
	Segment 5 comprises the freeway beginning at south Beale Road (PM 4.7) to the end of the current alignment of SR 65 at the junction with SR 70 (PM 9.4). Traffic along this segment is relatively free flowing and should not need any significant modification to the facility, other than routine maintenance, during the concept period. There is a major project being developed along this segment at the intersection of Ostrom Road and Forty Mile Road with SR 65 consisting of a Formula One racecourse as well as an existing amphitheater. Local fees are providing the funding for operational improvements to the interchange at this location to help accommodate the expected traffic at peak periods before and after events at the facility.								
Section 3	**6**[3]	YU/SUT (Bridge)	Yuba 19.6/ Sutter 2.6	12.171/1.6	Un-constructed	N/A	B/4		B/4
	Segment 6 is the proposed Third Crossing of the Feather River Bridge.								

[1.] Segment includes projects under construction in analysis
[2.] Segment includes programmed projects in analysis
[3.] Unconstructed Bridge

Figure 1-4 City of Lincoln General Plan Circulation System

1.3.11 City, County and State Transportation Plans

City of Lincoln General Plan (1988 and 1994)

The Lincoln General Plan describes the expected long-term expansion needs of the transportation system to accommodate the growth and development of the city. The General Plan Circulation element designates a route for the SR 65 bypass. The Public Facilities Element of the General Plan, amended in 1994, serves as a guide for future development and expansion of public facilities. It is also the goal of the city to see a thirty-five percent reduction in trips generated by new employment. Policies that support that goal include Rideshare, public transit funding and improved service and encouraging new development to be pedestrian friendly.

The General Plan stresses the importance of public transit. As Lincoln grows, the routes covered by the Lincoln Transit Service will be expanded to serve newly developed areas. The City will continue to require private developers to provide for appropriate public transit amenities such as bus turnouts, bus shelters and park and ride lots. If feasible, the City will link up with the Placer County Transit System to provide inter-city transportation for Lincoln residents.

Bicycle traffic is also addressed in the General Plan. Bicycle facilities within the existing City area will be developed as part of individual projects in accordance with Lincoln's adopted bike plan. The City will work with developers to ensure that bicyclists are accommodated as new development occurs.

The Lincoln Airport continues to be an important part of the transportation system in Lincoln, especially as the municipal airports, such as the Phoenix Airport, in north Sacramento County are closing. Other general aviation airports in Sacramento County are crowded, and Lincoln Airport is the only Placer County airport which has a large growth capacity. The Lincoln Airport Authority has proposed major improvements to the airport over the next twenty years. These improvements are detailed in the Lincoln Municipal Airport Layout Plan (September 1979).

Figure 1-4 shows the future area wide circulation system. In the amended Public Facilities Element, support is affirmed for construction of the SR 65 bypass with interchanges at Eight Mile Drive, Westwood Blvd./Moore Road and Nelson Lane (Policy 5.6). The city will also cease issuance of building permits for new projects within the city when a Level of Service (LOS) of D has been exceeded during the average workday at either the intersection of SR 65 and Lincoln Parkway or SR 65 south of Auburn Ravine, unless a source of funding has been secured for either the construction of this project or an alternative project that would improve the level of service (Policy 5.7).

It is also the goal of the city to see a thirty-five percent reduction in trips generated by new employment. Policies that support that goal include Rideshare, public transit funding and improved service and encouraging new development to be pedestrian friendly.

SR 65 from Roseville to Lincoln has been designated a *transit corridor* in the Placer County General Plan. The *transit corridor* designation is intended to encourage the development of land use and design standards that promote the viability of high-capacity transit in those corridors where there is a significant amount of undeveloped or re-developable land. As population and employment in southern Placer County increase, there will be greater opportunities for transit use. These opportunities can be maximized with planning aimed at concentrating higher intensity development and ensuring good transit accessibility.

It is the goal of the Transportation and Circulation Element of the Placer County General Plan to provide for the long-range planning and development of the county's roadway system to ensure the safe and efficient movement of people and goods. Policy 3.A.15 states that Placer County shall participate with other jurisdictions and the Department in the planning and programming of improvements to the State highway system, in accordance with state and federal transportation planning and programming procedures, so as to maintain acceptable levels of service for Placer County residents on all State Highways in the county. Placer County shall participate with the Department and others to maintain adopted LOS standards in proportion to traffic impacts from locally generated traffic.

Placer County Congestion Management Program

Passed by California voters in 1990, Proposition 111 added nine cents per gallon to the state fuel tax to fund local, regional and state transportation projects and services. It also required counties with a population over 50,000 to designate a congestion management agency (CMA), whose primary responsibility is to coordinate transportation planning, funding and other activities in a congestion management program (CMP). The Placer County Transportation Planning Agency is charged with developing this framework. The CMP system includes all state highways in the county, including SR 65.

One of the primary purposes of the CMP is to establish policies and processes, which would encourage the identification and funding of "comprehensive strategies needed to develop appropriate responses to transportation needs." The basic requirements of the CMP include the following:

Designation of a roadway system including all state highways and principal arterials. SR 65 is part of the roadway system in Placer County and is designated a principle arterial.

Adoption of traffic level of service (LOS) standards to be applied to the roadway system. The standard must be no lower than LOS "E" or the current level (whichever is worse).

Establishment of standards for the frequency and routing of public transit, as well as coordination between separate operators. The overall goal of Placer County's transit standards element is to attract more riders to transit systems while maintaining standards for cost effectiveness required either by State law or those set forth in the Short Range Transit Plans of the individual transit operators.

Routing standards are approached at a corridor level to provide transit operators with maximum flexibility in locating service routes within each corridor. Transit corridors are centered on the key highways in Placer County. SR 65 is a designated Transit Corridor. As such, transit services shall be provided within a one mile wide corridor of SR 65 between Lincoln and Roseville by January, 1999 with a minimum of one run during the morning peak period and one run during the evening peak period.

A trip reduction and travel demand element, including the adoption and implementation of local ordinances. The Placer County Congestion Transportation Commission has adopted a Model Trip Reduction Ordinance (TRO) which fulfills both the requirements of the CMP and California's Air Quality regulations. The Air Pollution Control District has determined that this TRO is consistent with the Placer County Air Quality Attainment Plan. The City of Lincoln has adopted a TRO plan similar to this model.

A program to analyze the transportation impacts of local land use decisions. The Land Use Analysis Program is intended to improve the linkage between local land use decisions and regional transportation facility decisions, to assess regional air quality impacts, to better assess the impacts of development in one community on another and to promote information sharing between local governments when the decisions made by one jurisdiction will have an impact on another. The PCTPA will act as a resource to local governments in performing transportation analysis of land use changes on the CMP designated transportation network. The Placer

County Travel Model will be used to analyze local General Plan amendments and other major development decisions.

A seven-year Capital Improvement Program (CIP) to maintain or improve traffic level of service and transit performance standards. Projects that are included in the Regional Transportation Improvement Program (RTIP) must first be included in the Capital Improvement Program (CIP). The CIP is a seven-year program developed to maintain or improve the traffic levels of service and mitigate regional transportation impacts identified through the land use analysis program.

Placer County Transportation Planning Agency Regional Transportation Plan

The Regional Transportation Plan (RTP) is designed to be a blueprint for the development of a balanced, comprehensive, multi-modal transportation system, and pending review will eventually become the Placer County portion of the Sacramento Area Council of Governments (SACOG) Metropolitan Transportation Plan. The RTP includes a policy element that describes the short and long-range goals of the Plan, an action element that describes the programs and actions necessary to implement the Plan and assigns responsibilities and finally, a financial element that summarizes the cost of implementation.

The Action Element identifies short and long-term projects required in order to meet the goals of the Plan. The SR 65 Lincoln bypass is included in the list of projects with expected funding. In order to fulfill the goals of the Plan, funding must be secured and the project must be programmed in the Regional Transportation Improvement Program (RTIP).

State Transportation Improvement Program (STIP), Regional Transportation Improvement Program (RTIP) and Inter-Regional Transportation Improvement Program (ITIP)

The State Transportation Improvement Program (STIP) is one of three documents used to allocate funds for individual projects by the California Transportation Commission. Senate Bill 45 (Kopp, 1997), the landmark STIP reform legislation, changes the STIP from nine programs to essentially two; the Regional Improvement Program (RIP) directed by regional transportation planning agencies (RTPA's) and the Inter-regional Improvement Program (IIP) controlled by the Department. The Regional Transportation Improvement Program (RTIP) and Inter-regional Transportation Improvement Program (ITIP) are the documents containing projects nominated to be adopted into the STIP. The adopted STIP identifies the transportation improvement funding commitments for that cycle. The SR 65 Project is included in the 1998 ITIP as well as the 1998 STIP and the RTIP.

1.3.12 Other Transportation Projects In The Vicinity

Roseville Bypass

Southern Placer County, in the vicinity of Roseville, Rocklin and Lincoln is a fast growing area. In response to the planning pressures in the area, and as a condition of funding for the Roseville Bypass, the South Placer Policy Committee (SPPC) was formed. The committee members included representatives from the cities of Roseville, Rocklin, Lincoln and Placer County. The committee also included ex-officio members of the cities of Auburn and Sacramento, Sacramento County and the Intergovernmental Relations Advisory Committee. The policy plan adopted by the SPPC includes the following five elements: land use, transportation, public facilities, housing and local jurisdiction coordination.

On June 27, 1980 the CTC passed a motion endorsing the construction of the Roseville Bypass, which allowed extensive economic and community development in the South Placer County Area. In August 1980, the CTC approved partial funding for the Roseville Bypass and in 1987 the Roseville Bypass was completed extending from I-80 to Pleasant Grove Creek Bridge. The Roseville Bypass is a four-lane expressway with an interchange at Harding Blvd, Blue Oaks Blvd and Pleasant Grove.

SR 65, Blue Oaks Blvd. to Industrial Ave.

This project extends from Blue Oaks Blvd. to Industrial Avenue, KP 13.0/21.0 (PM 8.3/12.8). It is proposed to widen SR 65 from a two lane to a four lane expressway and construct an interchange at Twelve Bridges Dr. The interchange is a separate project funded jointly by the SR 65 JPA and the city of Rocklin. It is under construction and expected to be completed by 2001.

Wheatland Bypass

The Department's long-range plans are to construct a bypass around the town of Wheatland, just north of Lincoln and Sheridan. A Project Study Report (a scoping document) has been prepared. The proposed project extends from the Lincoln Bypass, across the Bear River to KP R39.0 (PM R24.0) on SR 65 in Yuba County, about five miles past Wheatland.

State Routes 70 and 99 Transportation Corridor Study

SR 65 ties into the transportation corridor which encompasses State Routes 70, 99 and 65, connecting Sacramento to the growing cities of Roseville, Rocklin, Lincoln, Marysville/Yuba City and on up through Oroville to Chico.

The SR70/99 Corridor Study (SACOG & BCAG, July 1990) was requested by the CTC responding to a need to provide the Marysville/Oroville/Chico area with freeway access. The Corridor Study is to be used as the basis for future transportation

investments in the area. It evaluated 24 possible freeway alignments between Chico and Sacramento, using either SR 70 or 99 as the principle alignment. A Technical Advisory Committee (TAC) and a Political Advisory Committee (PAC) compared the efficiency, environmental and social impacts and economy of each alternative and recommended further study.

Table 1-9 shows transportation projects proposed for the SR 99/70 corridor.

Table 1-9 Proposed Highway Improvement Projects within Rts. 65, 70/99 Corridor

E.A.*	Co/Route KP (PM)	Description	Estimated Cost ($ in millions)	Construction Year
40180	Yuba 65 (0.5/1.5)	Install Signal and Lights & Perform Roadwork	$0.7 Operations Project	2002
29730	Pla/Yub 65 14.9/2.9 (23.8/4.7)	Wheatland Expressway (gap closure from Lincoln Bypass to existing freeway)	$180 Planned	Dependent on Funding
386410	Sutter 70 0.3/8.6 (0.2/5.5)	Construct four-lane expressway, near East Nicolaus from SR 99 to Cornelius Road	$44.5	2006
386420	Sutter 70 8.0/13.3 (5.0/8.3)	Construct 4-lane expressway near Rio Oso from Cornelius Ave. to the Bear River Br.	$51.8 (More programmed)	2006
376100	Yuba 70 1.0/11.2 (0.6/7.0)	Construct 2-lane expressway to 4-lanes, near Marysville, Bear River Bridge to 0.3 mi. south of McGowan Road	$40.0	2006
2A272	Yuba 70 4.8/6.1 (3.0/3.8)	Construct new Interchange south of existing Algodon Road at Motorplex Parkway	$9.0 Programmed $1.7 to 13.5 Planned	Dependent on Phasing
297300	Yuba 65 0.97/11.3 (0.6/7.0)	Construct two lane expressway and bridge near Yuba City, SR 99 to SR 70.	$33.2 Programmed $118 Planned	Dependent on Funding
382220 3822U1	Butte 149, 70, 99 0.0/7.4 (0.0/4.6)	Construct 4-Lane Expressway and 2 Freeway-to- Freeway Interchanges	$92.4	2006
372300	Yuba 70 13.6/41.5 (8.3/25.8)	Construct Marysville-Oroville expressway on new alignment-Phases 2 and 3	$300	Dependent on Funding
372300	Butte 70 0.00/	Construct Marysville-Oroville expressway on new alignment-Phase 1; includes all PS&E	$17	2004
434901	Sutter 99 20.8/27.7 (12.9/17.2)	Add passing lane and widen near Yuba City from Sacramento Ave. to Central Ave.	$10.2	Completed 2000
1A4310	Sutter 99 14.0/18.8 (8.7/11.7)	Widen to four lanes from SR 70 to south of the Feather River (Includes PS&E for all phases).	$11.0	2005
1A462	Sutter 99 36.2/45.8 (22.6/28.6)	Widen to four lanes near Yuba City from O'Banion Road to near Lincoln Rd.	$19.6	2004
1A4610	Sutter 99 34.4/41.2 (21.4/25.6)	Widen to four lanes near Yuba City from Central Ave. to O'Banion Road	$48.8	Dependent on Funding

1A4320	Sutter 99 18.8/20.8 (11.7/12.9)	Widen to four lanes adding Bridge Capacity	$47.7	2009, Dependent on Funding

* E.A.-Expenditure Authorization, this number identifies the project in the The Department's system.

1.3.13 Social Demand/Economic Development

Growth Forecasts

Lincoln is a fast growing community. Although the project area is predominantly rural, it is located near communities in the greater Sacramento region where population growth has occurred at high rates in recent years. The Metropolitan Transportation Plan update, prepared by the SACOG in 1996, notes that "the geographical pattern of growth [in the five county SACOG region of Sacramento, Yolo, South Placer, Yuba and Sutter Counties] will follow land-use patterns already well established in the region; strong employment growth in downtown Sacramento, and high concentrations of both job and residential growth north, northeast and east of Sacramento" (SACOG 1996). The need to provide increased capacity on SR 65 is related to this pattern of growth.

As land closer to Sacramento becomes built out, areas within commuting distance of the State Capital are coming under increasing pressure to grow, primarily to provide housing. Population growth forecasts for Sacramento County and the SACOG region are reported in Table 1-10.

Employment opportunities are growing in the project area as well. Several major computer technology companies are relocating to the Sacramento Valley, primarily in Roseville and Rocklin. Employment projections for Placer County are shown in Table 1-11.

Table 1-10 Population Growth in SACOG Region

	2000	2005	2010	2015	2020	2025
El Dorado County [1]	124,910	140,395	158,085	174,950	186,250	194,415
Placer County [1]	237,145	292,640	336,805	376,240	396,785	415,335
Sacramento County [2]	1,218,860	1,335,283	1,459,952	1,574,720	1,646,045	1,695,498
Sutter County	78,510	88,520	98,370	109,280	121,640	134,700
Yolo County	165,20	191,210	209,035	227,130	247,905	266,325
Yuba County	61,530	69,740	78,050	87,350	97,580	107,950
Six County Total [1]	**1,886,175**	**2,117,788**	**2,340,297**	**2,549,370**	**2,696,205**	**2,814,223**
Sacto-Yolo CMSA[1,2]	**1,746,135**	**1,959,528**	**2,163,877**	**2,352,740**	**2,476,985**	**2,571,573**
Yuba City MSA[3]	**140,040**	**158,260**	**176,420**	**196,630**	**219,220**	**242,650**

[1] Excludes Tahoe Basin portion of the County.
[2] The City of Folsom population figures include 7,000 persons in the prison facilities. The non-prison population for future years is 69,333.
[3] The Yuba City MSA is comprised of Sutter and Yuba counties and the cities within each county.

Table 1-11 Employment Projections in the SACOG Planning Area

	2000	2005	2010	2015	2020	2025
El Dorado County[1]	31,917	39,513	45,556	51,510	57,629	63,096
Placer County [1]	114,812	142,646	167,611	194,159	211,468	227,510
Sacramento Co.	561,728	633,584	694,531	753,641	792,494	814,220
Sutter County	24,600	28,628	32,332	36,294	41,019	45,145
Yolo County	93,367	109,855	127,233	140,628	157,979	172,064
Yuba County	23,723	26,293	29,173	32,285	35,844	39,241
Six Co. Total [1]	850,147	980,519	1,096,436	1,208,517	1,296,433	1,361,276
Sacto-Yolo CMSA[1,2]	801,824	925,598	1,034,931	1,139,938	1,219,570	1,276,890
Yuba City MSA[3]	48,323	54,921	61,505	68,579	76,863	84,386

[1] Excludes Tahoe Basin portion of the County.
[2] The Sacramento-Yolo CMSA is comprised of El Dorado, Placer, Sacramento, and Yolo counties and the cities within each county.
[3] The Yuba City MSA is comprised of Sutter and Yuba counties and the cities within each county.

Lincoln General Plan Land Use Element

The City of Lincoln General Plan, prepared in 1988, addresses future growth within the City boundaries and in adjoining areas within the City's sphere of influence. The Planning Area includes approximately 7776 ha (19,500 acres or 30 square miles) and is generally bordered by Athens Avenue on the south, Sierra College on the east, Fiddyment Road, the Lincoln Airport on the west and Virginiatown Road/SR 65/West Wise Road on the north. The planning area is further broken up in sub-areas (see Figure 1-5). Table 1-12 summarizes the amount of new development that is currently being proposed within the Lincoln Planning Area. For the location of these developments, please refer to Figure 1-6. Development of these areas at build out could result in approximately 21,085 new residential units; 554 ha (1,369 ac) of industrial land, 132 ha (325 ac) of commercial lands, with a resulting population increase of approximately 55,031 people, bringing the total population of the area to 62,899 (Lincoln, 1994).

This does not include the urban reserve areas. Under the policies of the General Plan, areas designated as Urban and Industrial Reserve are not contemplated for development during the planning horizon used for the General Plan and agricultural areas are not considered buildable. Urban and Industrial Reserves are intended to provide a long term direction for future land uses as demands change. At this time, they only represent future development potential.

Table 1-12 Development Proposals within the Lincoln Planning Area

Residential Projects		
Brookview IV	209 Single Family Residential	23.4 ha (58 ac)
Lakeside Dr. Estates	98 Single Family Residential	Not available
Teal Hollow Subdivision	341 Single Family Residential	36.8 ha (91 ac) ±
Glenmoor	207 Single Family Residential	Not available
Terra Cotta Village	7 Single Family Residential	Not available
Aspen Meadows	87 Single Family Residential	Not available
Twelve Bridges Area A	4,331 Unit Planned Development	1209.6 ha (2,989 ac)
Twelve Bridges Sun City Lincoln Hills	6,800 Unit Planned Development	1191.8 ha (2,945 ac)
Twelve Bridges Area C	100 Unit Planned Development	20.23 ha (50 ac)
Lincoln Crossing	2,985 Unit Planned Development	433.0 ha (1,070 ac)
Three D	322 Unit Planned Development	42.1 ha (104 ac)
Industrial/Commercial Projects		
Lincoln Hills Town Center Shell Station	Gas Station and Car Wash	Not available
Sterling Pointe	Commercial/Industrial property	31.1 ha (76.83 ac)
Lincoln Center Chevron Facility	Gas Station, Convenience Store, Fast food Restaurant, Car Wash, Card Lock	0.91 ha (2.25 ac)
Joiner Parkway Self Storage Facility	28499 m^2 of storage (93,500 ft^2)	1.86 ha (4.6 ac)
Joiner Parkway Plaza	Commercial, food mart, gas station, car wash	0.88 ha (2.18 ac)
Eskaton	230 unit Senior Housing	Not available
Crosswinds Hangars	5 Hangars	1.73 ha (4.28 ac)
AB Tools Facility	7681 m^2 (25,200 ft^2) Industrial facility	0.97 ha (2.4 ac)

Figure 1-5 Planning Area, General Plan (1988)

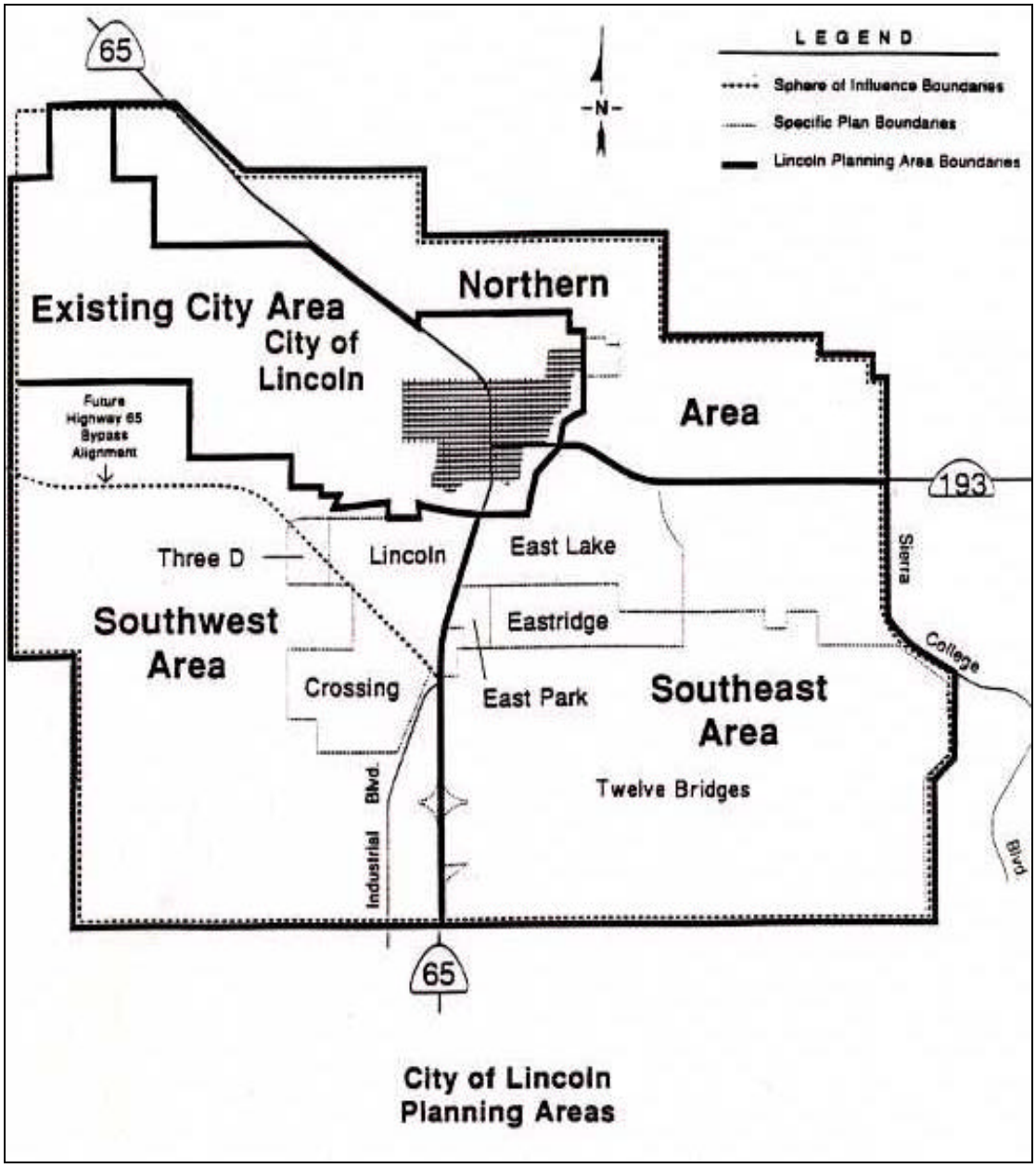


Figure 1-6 Development Activity in the SR 70,99,65 corridor

The Lincoln General Plan anticipates an increase in the population of Lincoln to anywhere between 19,000 to 39,000 by the year 2010. In 1988, about six square miles (20 percent) of the planning area were developed with residential, industrial, commercial or other developed uses. To accommodate the anticipated growth, the General Plan designates approximately 35.4 km^2 (22 mi^2) (73 percent) of the Planning Area under these uses (including 12.2 km^2 [7.6 mi^2] designated as urban reserve). The remaining eight square miles (approximately) are designated to remain in agricultural uses including crop production and rangeland. This area is predominantly in the southwest portion of the planning area.

Table 1-13 summarizes the amount of new development that is currently being proposed within those portions of the Lincoln sphere of influence that are given urban land use designations, taken from the 1994 General Plan Amendment (Lincoln, April 1994). This table corresponds to the sub-areas shown in Figure 1-5.

Table 1-13 Lincoln General Plan Land Use Summary

	Southwest			**Southeast**			**West Lincoln City Core**			**Northeast**			**North**		
	DU	**AC**	**DEN**	**DU**	**AC**	**DEN**	**DU**	**AC**	**DEN**	**DU**	**AC**	**DEN**	**DU**	**AC**	**DEN**
Low Density	1913	468	4.1	6771	234	2.9	1177	294.0	4.0	1785	510	3.5	~	~	~
Med. Density	815	94	8.6	2895	383	7.4	1480	252.0	5.9	~	~	~	~	~	~
High Density	0	0	0	3240	161	20.1	1009	57.5	17.5	~	~	~	~	~	~
Total Res.	2728	562.4	4.85	12906	2886	4.47	3666	603.5	6.07	1785	510	3.5	~	~	~
Industrial	~	~	197.2	~	~	171.0	~	~	653.3	~	~	~	343	~	~
N. C.	~	~	~	~	80.6	~	~	14.8		~	~	~	~	~	~
Gen. Comm.	~	27.7	~	~	98.0	~	~	62.9	~	~	~	~	~	~	~
B/ P	~	14.5	~	~	17.4	~	~	9.0	~	~	~	~	~	~	~
Open Space	~	301.1	~	~	1323	~	~	328.5	~	~	65	~	~	~	~
School	~	34.2	~	~	115.0	~	~	90.1	~	~	14	~	~	~	~
Other Public	~	13.4	~	~	40.0	~	~	310.5	~	~	~	~	~	~	~
Parks	~	44.1	~	~	270.0	~	~	65.9	~	~	24	~	~	~	~
Golf Course	~	161.8	~	~	393.0	~	~	~	~	~	~	~	~	~	~
Total	1356.3			5394.0			2335.8			613			343		

DU: Dwelling Units AC: Acres DEN: Density (dwelling units per acre)
NC: Neighborhood Commercial BP: Business/Professional Gen. Comm.: General Commercial

Placer County General Plan Land Use Element

The SR 65 Lincoln Bypass Study Area lies partially within the City of Lincoln and partially within unincorporated Placer County. Current land use in this portion of Placer County is predominantly agriculture. According to the 1994 County General Plan land

use map (updated in 1997), planned land use in the Lincoln area will remain predominantly agricultural for the 10- to 20-year General Plan planning horizon.

Recently, Placer County has implemented the Placer Legacy Project. The Placer Legacy Project is intended to develop specific, economically viable implementation programs that focus on the preservation of open spaces in order to maintain the abundance of the existing diverse natural habitats while supporting the economic viability of the County and enhancing property values. The Citizens Advisory Committee, the Interagency Working Group and the Scientific Working Group all work under the umbrella of the Placer Legacy to develop programs where no programs currently exist and strengthen existing programs.

Sutter County General Plan Land Use Element

Sutter County is predominantly agricultural with 93 percent of the County's acreage in farms (U.S. Census, 1990). County policies, reflected in the General Plan, include preservation of agricultural uses and concentration of development around existing communities. Residential development for the area closest to Lincoln will likely be limited to the rural communities of Rio Oso and East Nicolaus/Trowbridge in the foreseeable future. Table Table 1-14 summarizes land use decisions in Sutter County.

Table 1-14 Sutter County Land Use

What	Where	Status	Area	Details
Sutter County				
Sutter County General Plan	Sutter County	Approved	2130 ha (5263 ac)	Residential, commercial, business park, public uses. General Plan includes construction of 11,747 homes.
Sankey Road Indian Casino	SE of Sankey Rd/SR 99 South of SR 70/99 Split	Pending Federal decision	97 ha (240 ac)	Recreation complex; 50,000 sq. ft. gaming facility/restaurant, 18 hole golf course, RV park, tribal office, conference room.

The General Plan designates up to 1417.5 ha (3,500 ac) of the southern portion of the County, adjacent to Sacramento County, for future industrial/commercial development. This area is so designated because of its proximity to transportation corridors (SR 70 and 99) and the Sacramento Airport.

Unincorporated Yuba County

Yuba County's General Plan, adopted in 1996, addresses a 20-year planning horizon. The 1995 population was estimated at 64,096. This population is expected to grow to 95,000 by 2015. Yuba County includes the incorporated city of Wheatland and the unincorporated communities of Olivehurst and Linda. Table 1-15 describes land use decisions made by Yuba County. Most future growth is expected to occur within these established communities. The remainder of the Study Area is primarily devoted to agricultural uses.

Table 1-15 Yuba County Land Use

Yuba County and Communities				
Ostrom Road Landfill	East of SR 65 on S. Beale Rd.	Expansion Approved	29 million additional cubic yards, 221ac	Allows hundreds of tons of increased operations per day
Bill Graham Presents & Arciero Motorplex	Forty-Mile Road east of SR 70	Most Elements Approved	765 ha (1890 ac)	Auto racing (40,000 person capacity in largest facility), golf course, commercial complex and 20,000 seat amphitheater
Plumas Lake Specific Area	West side of SR 70 in South Yuba Co.	Active Map 6,463 Dwelling Units	526 ha (1300 ac)	Residential development/some industrial and commercial uses. Plan allows up to 11,800 homes.
East Linda Specific Plan	East of SR 70 along North Beale Road	Active Map applications for 1,826 dwelling units	654 ha (1617 ac)	Residential portion of development allows up to 5500 new units to join 514 existing dwelling units
North Arboga Study Area	Along SR 70 near SR 65	Active map; 125 dwelling units	Not available	Residential portion of development allows for 2800 dwelling units
City of Wheatland				
1989 Tentative Parcel Map	West of SR 65 at the High School	Application submitted	86 ha (212 ac)	Residential development; initial application requesting 522 dwelling units

At General Plan build-out, about 49 005 ha (121,000 ac) would be under Valley Agriculture use. This includes most of the portion of Yuba County within the Study Area. The General Plan calls for retaining agriculture as the primary land use in this area and protecting the agricultural community from encroachments which "would be injurious to the physical and economic well being of the agricultural community." The Yuba River corridor lies along the northern boundary of the Study Area. The General Plan calls for maintaining this open space corridor while accommodating compatible recreation and wildlife uses.

The General Plan anticipates highway improvement projects, including improvements to SR 70 and the SR 65 bypass around the City of Wheatland.

City of Wheatland

The City of Wheatland, located on SR 65 about 1.6 km (1 mi) north of the Bear River, had an estimated population of about 1,893 in 1989. Beale Air Force Base, located about 12.9 km (8 mi) northeast of Wheatland, has had a major influence on the growth of Wheatland and all of Yuba County.

The dominant land use in the Wheatland area is agriculture, primarily irrigated crops and orchards. The Wheatland General Plan (1980) recognizes the importance of agriculture to this rural community and sets goals of preserving the highest quality agricultural lands for agriculture and open space uses. Rivers, creeks and sloughs are also recognized as valuable resources and are designated for conservation and protection from urbanization.

In 1980, there were 195.4 ha (485 acres) of land within the Wheatland city limits, about 94.4 ha (233 ac) of which were undeveloped. The General Plan anticipates

capacity for 5,500 people within the city limits. Because of the large proportion of undeveloped land within the city limits (94.4 ha [233 ac]), the General Plan does not consider future development outside of current city limits.

In response to increasing development pressure in the early 1990s, the City of Wheatland prepared the 1995 Specific Plan to address future development of approximately 86.7 ha (214 ac) of vacant land within the northern half of the City. Full buildout of the Specific Plan area would yield a theoretical population of about 5,000 people within the current Wheatland city limits. The Wheatland General Plan anticipates construction of a freeway bypass of the city.

1.3.14 Flooding and Route closure

SR 65 within the project limits has been closed 33 times from 8/23/80 to 12/08/98 due to various factors such as maintenance, flooding, accidents and train derailments in Sheridan. Table 1-16 lists the road closures.

Table 1-16 Route Closures

Postmile	Location	Reason	Duration of Closure
9.5/12.9	Between Placer Blvd. And Industrial Blvd.	Accident-Eight fatalities	4 hours
20.9/21.7	Sheridan Rail Road crossing	Train derailment	2.5 hours
13.8/14.0	Between 4th and 5th St.	Filming a movie	5.5 hours
13.8/14.0	Between 4th and 5th St.	Southern Pacific RR realigning a spur track.	6.75 hours
23.4	South Beale Rd.	Major flood in Linda	16.3 hours
12.3	One mile south of Lincoln	Truck accident, Two fatalities	3.2 hours
9.5/13.0	Sunset Blvd. To Industrial Blvd.	Road rehabilitation	2.5 hours
12.8	Industrial Blvd.	Accident-Two fatalities	0.5 hour
22.9	2 miles south of Wheatland	Accident, One fatality	1 hour
13.9	6th St.	Flooding	3.75 hours
13.7	Junction of SR 193	Drill testing. Planned closure	12 hours
13.8	5th St.	Hazardous waste spill	7.5 hours
13.8	5th St.	Ruptured water main.	1.1 hours
17.3/21.6	3-7 miles south of Lincoln	Accident, Two fatalities	1.6 hours
13.9	6th St.	Flooding	4.5 hours
13.1	Moore Rd.	Flooding	1.4 hours
13.7	Junction of SR 193	Flooding	2.5 hours
21.6	South of Sheridan	Four vehicle accident	1.5 hours
13.1	Moore Rd.	Accident-One fatality	2.5 hours

2 PROPOSED ALTERNATIVES

Using comments from the City of Lincoln, Placer County, the Resource Agencies including U.S. Environmental Protection Agency (EPA), U.S. Fish and Wildlife Service (FWS) and Army Corps of Engineers (ACOE) and the community, Caltrans and FHWA developed numerous alternatives to meet the transportation needs of the community while preserving the natural habitat of the area. The final recommended alternative will be based on the extent to which the project meets the stated purpose and need, design standards, public input, comparison of the environmental impacts, comments received at the public hearing and by correspondence and is the least environmentally damaging practicable alternative.

This environmental document considers seven alternatives: the "No Build" and six "Build Alternatives": A5C1, AAC2, D1, D13, D13 South Modification and D13 North Modification. Considerable effort went into designing a facility that minimized impacts to the wetland areas and residences while providing adequate relief from traffic congestion and improving inter-regional movement of goods and services.

The following screening criteria considered necessary to achieve the projects purpose and need were developed in cooperation with the FWS, the ACOE and the EPA:

- The project should improve service levels and maintain, at a minimum, LOS D in the project area through the year 2020.
- The project should improve and maintain traffic and pedestrian safety in the project area.
- The project should minimize displacement of existing residences and businesses.
- The project should minimize impacts to wetlands and listed species.
- The project should be constructed at a reasonable cost.

The alternatives discussed below and shown in Figure 2-1 were developed with these screening criteria in mind. A full range of alternatives that included a highway bypass, non-highway options or improving the existing alignment though the City of Lincoln were investigated through the Major Investment Study (MIS). Some of these approaches either did not meet the project's purpose or need, or did not meet some or all of the screening criteria. These alternatives are described in the section labeled "Alternatives Withdrawn From Consideration" which follows this section.

This project is a Category 1, which involves a route adoption, the acquisition of new right-of-way, access control and a freeway agreement with the City of Lincoln and Placer County.

Figure 2-1 Proposed Alternatives

2.1 PROPOSED ALTERNATIVES

All of the alternatives are described from south to north.

2.1.1 Alternative AAC2 and A5C1

The AC alternatives both begin approximately 0.5 km (0.3 mi) south of Industrial Blvd. at KP 20 (PM12.5). The alignment curves in a northwesterly direction and proceeds over Industrial Blvd. and the Union Pacific Transportation Company (UPTC) tracks, intersecting Moore Road approximately 607 m (1992 ft.) from the Moore Road/Joiner Parkway intersection. The line turns in a northeasterly direction approximately 2.4 km (1.5 mi) west of the existing alignment.

At Nicolaus Road, the AA line was set approximately 335 m (1100 ft) east of Lakeside Drive from Nicolaus Road, the AA and A5 lines continue on a north-northeast bearing until it nears the UPTC tracks where it curves to the left. At this point, the C portion of the alignment takes over.

The A5C1 and AAC2 lines share an alignment for approximately 2.5 km (1.6 mi). Just south of Coon Creek, the AAC2 alignment stays roughly parallel with the SR 65, while the A5C1 alignment veers northwest for about 1470 m (4800 ft), then veers north, eventually merging with the AAC2 alignment at Riosa Road. These alignments continue to north of Sheridan where, similar to D1 and D13 lines, they tie back into the existing facility. The A5C1 has less right-of-way impact on the agricultural land north of Wise Road; as a result A5C1 is slightly longer than AAC2.

The AC lines provide access to the Lincoln area and conform to the local planning policy. The A5C1 and AAC2 alignments were developed in recognition of the difficulty and expense required to upgrade existing SR 65 to a freeway north of Lincoln, and the expense and maintenance problems of a second railroad crossing. The AC lines eliminate the existing Sheridan at-grade railroad crossing and the proposed north railroad crossing on the A corridor. Currently 23 trains per day pass through Sheridan.

The advantages of the AC line are as follows:

- The AC alignment eliminates the need for a new railroad separation at the north end of the A alignment.
- The AC lines provide for 18.8 km (11.7 mi) of ultimate freeway with access control as compared to a maximum of 8.7 km (5.4 mi) on a "A" alignment construction.

One disadvantage of the AC alignments is that the first 2.9 km (1.8 mi), after leaving the "A" corridor, is through areas supporting high quality vernal pools. In addition, since these alternatives were developed, numerous housing developments have been constructed in the path of these alternatives since a highway corridor had not been

established. Thus, in addition to increased impacts on local residents, there would be the associated increase in right-of-way costs and possible soundwalls.

Staging construction for A/C line.

A temporary railroad separation and connection at the north end of the Lincoln Bypass would be required for this alternative. A four-lane expressway would be constructed from Industrial Blvd. to Nicolaus Road and a two-lane expressway would be constructed from Nicolaus Road to the connection with SR 65 south of Wise Road.

The "temporary" connection could be relinquished to local agencies after construction of the C line west of the railroad tracks. The connection could be designed for integration of the railroad separation into the local street system upon relinquishment. This provides a railroad separation for future local traffic north of Lincoln and reduces the initial cost of the project.

2.1.2 Alternative D1

The D1 alternative begins at the same location as the A alignments south of Industrial Blvd. This line crosses the railroad tracks and turns in a northwesterly direction proceeding to the west side of the Lincoln Airport. South of Auburn Ravine, the impact on wetlands is similar to the A line. From near Auburn Ravine to west of the airport, the D1 line passes through an area of scattered single family dwellings. This line would require one to five residential acquisitions and may be sufficiently close to as many as ten other residences to require soundwalls.

West of the airport near Nicolaus Road, the D1 line veers north. Land use in this area is agricultural with a mix of irrigated and dry farming techniques. Terrain throughout the D1 line is flat to slightly rolling hills. Vernal pools are located at several points along the center section line. By shifting the alignment to the west slightly, several vernal pools can be avoided, but an additional residence would be impacted.

After Nicolaus Road the D1 line turns northwesterly, parallel to and about 610 m (2001 ft) west of the existing highway. North of Sheridan, the D1 line reconnects with the existing SR 65 west of the railroad tracks. This avoids re-crossing the railroad tracks as would be necessary if the connection was constructed south of Sheridan.

Right-of-way for future interchanges would be acquired at Nelson Lane, Riosa Road and either Nicolaus Road or Wise Road. The Nelson Lane Interchange would serve Lincoln Airpark. Nelson Lane would, therefore, need to be reconstructed to handle the increased traffic.

2.1.3 D 13 Alternative

The D 13 alternative commences 0.48 km (0.3 mi) south of the intersection of existing SR 65 and Industrial Boulevard at approximately KP 20 (PM 12.5). This alignment deviates from the existing highway just south of its intersection with Industrial

Blvd. Crossing over Industrial Blvd. and the Union Pacific Transportation Company's tracks, the D 13 alignment proceeds in a westerly direction. The alignment intersects Moore Road and Nelson Lane before turning to the north crossing Nicolaus Road and passing the Lincoln Airport to the west. The alignment continues in a northerly direction for approximately 5.64 km (3.5 mi) before swinging northwest toward Dowd Road. The D 13 alignment crosses Dowd Road approximately 91.4 m (300 ft) north of the intersection with Dalby Road. Continuing in a northwest direction, the alignment intersects Riosa Road and rejoins the existing highway 0.16 km (0.1 mi) from the Bear River. The D 13 alignment is 20.6 km (12.8 mi) long. The D 13 alignment shares the same staged construction design, interchange connections and similar stream crossings and channel relocation as the D 1 alignment.

The D 13 alignment was developed in response to public reaction to the D 1 alignment impacts to residences on Rockwell Lane and in an effort to reduce impacts to wetlands at the south end of the bypass.

2.1.4 D 13 South Modification

The D 13 modifications were developed in response to several factors. At the open house on September 22, 1999, a number of citizens proposed a plan that would move the D 13 alternative further away from the residential development located near Auburn Ravine and First Street. One proposal was to use the D 1 alignment from Industrial Boulevard to Nelson Lane with D13 from Nelson on. (Figure 2-2) This looked easy on paper, but geometrically, it was more problematic. In order for it to be a safe facility, a whole new alternative would have to be drawn between Industrial Blvd. and Nelson Lane, splitting the difference between the D 1 alternative and the D 13 alternative.

D13 North Modification

At the north end of the project, modifications were explored to avoid the Conservation Easement property shown in Figure 2-4Figure 2-1. The D 13 North Modification is identical to the D 13 alignment until Waltz Road, where it veers slightly to the east then makes a beeline to SR 65. This alignment has some advantages over the D 13 alignment including slightly less impacts on Oak woodlands, vernal pools and wetlands, in addition to avoiding the Conservation Easement property. It is also shorter and more direct than the D 13 alternative. Table 2-1 compares the D 13 alternative with the D 13 modified alternatives.

Table 2-1 D13 Alternative Impacts

Alternative	Wetland Impacts	Vernal Pool Impacts	Oak Woodland	Residents affected
D 13	5.3 ha (13.1 ac)	2.2 ha (5.4 ac)	3.5 ha (8.6 ac)	10
D 13 South Modification	5.0 ha (12.3 ac)	2.4 ha (6.0 ac)	0.2 ha (0.4 ac)	11
D 13 North Modification	4.9 ha (12.1 ac)	2.0 ha (4.9 ac)	3.4 ha (8.4 ac)	10

2.1.5 Park And Ride / Braided Ramps

It is proposed to secure right-of-way for future braided ramps and a park and ride facility as a part of this project. The park and ride facility will be located within the proposed right-of-way for the braided ramps and the existing state right-of-way adjacent to the Industrial Blvd. and SR 65 intersection. The geometric layout of the park and ride can be designed independently from any alignment selected. It is proposed to build the first stage of the park and ride facility that will accommodate approximately 120 cars with the possibility of increasing to 1200 cars for future demand. The number of proposed total-parking stalls incorporates the landscape area but not the area for the future braided ramps or the park and ride lot connector; therefore, the maximum number of future stalls might decrease slightly. While the demand for a park and ride facility extends to Sheridan, the majority of the demand is located in the City of Lincoln; therefore, a single park-and-ride facility location was preferred over multiple facilities. Considering the size and central location of the proposed park and ride site, a single location can more easily be incorporated into the local transit routes and if Sacramento Regional Transit were to decide to extend rail service to the area, can also serve as a possible parking lot for light-rail commuters. The cost of the right-of-way for this area, which is approximately 11.4 ha (28.3 ac), is $2,500,000. This item has been discussed with the District 3 Ride-Share Coordinator as well as local officials from the City of Lincoln.

2.1.6 Utility Relocation

Some utilities will need to be relocated for this project, however, at this time, it is not known where they will be moved. A Utilities Conflict Map will be developed when the preferred alternative has been chosen. From that map, new locations will be determined and evaluated for environmental impacts. That information will be available in the final environmental document.

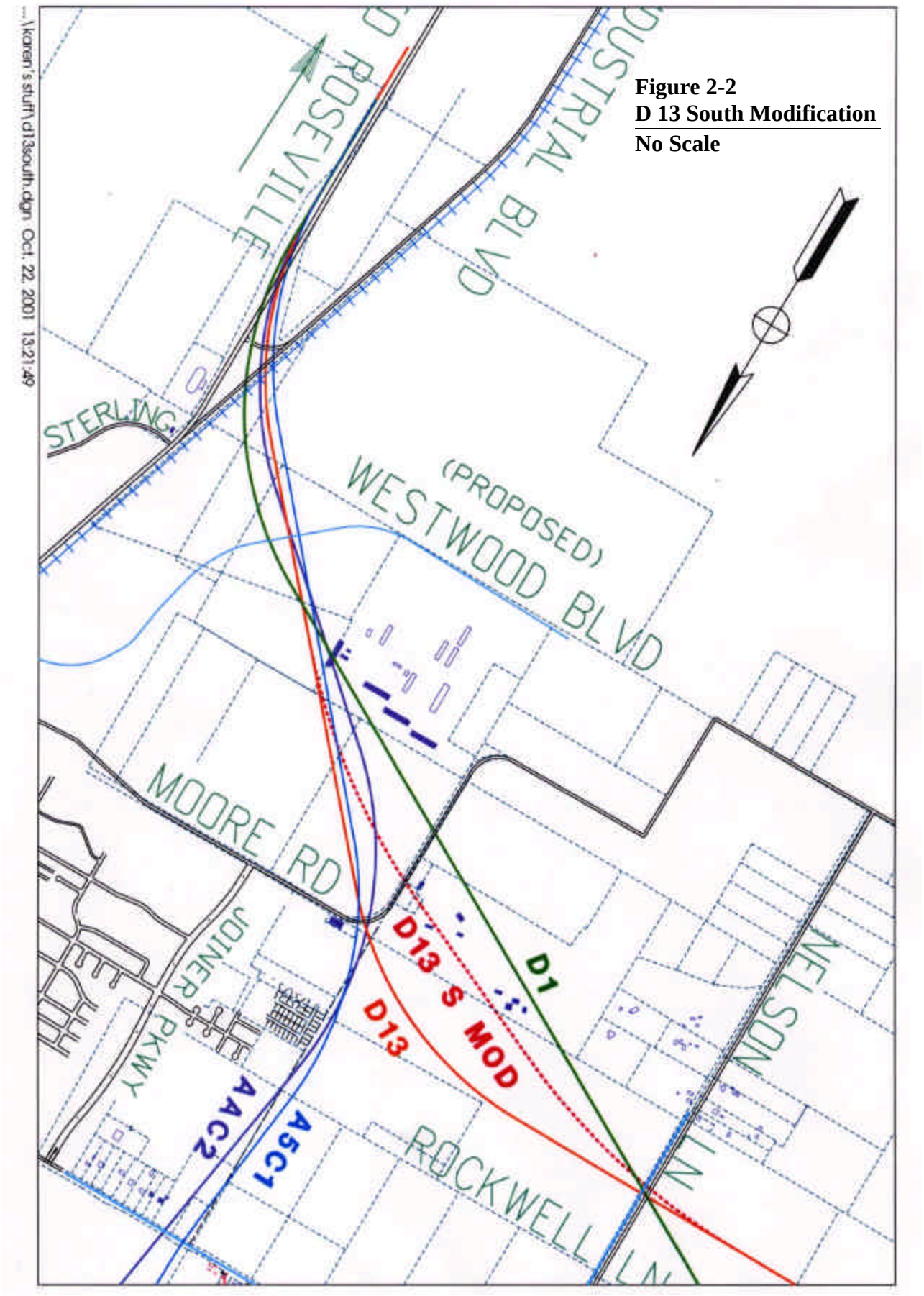


Figure 2-2
D 13 South Modification
No Scale

Figure 2-3 Park and Ride/Braided Ramps

Figure 2-4 D 13 North Modification

2.1.7 Non-Standard Features

There are several non-standard features associated with this project; the Industrial Boulevard interchange, the north connection to the existing SR 65, the project's first stage, minimum profile grade and minimum distance between two successive ramps or interchanges.

The interchange at Industrial Boulevard will be designed as a half diamond interchange. Constructing a full diamond interchange required an at-grade crossing of the railroad tracks for the northbound traffic. The existing and future alignment of Industrial Boulevard will remain just east of and parallel to the railroad. To be able to build a northbound on-ramp at the Industrial Blvd, a "U" shape northbound on-ramp should be configured. This requires a large amount of right-of-way to be acquired. This movement will be served by the future Westwood interchange. A study performed by the office of Traffic Forecasting & Modeling confirmed that without this half diamond interchange the quality of traffic operations in the south vicinity would diminish.

The temporary connection of the Lincoln Bypass to existing SR 65, north of Sheridan, will have a lower design speed than the adjacent freeway. The design speed would be reduced from 130 km/h to 110 km/h (80 mph-68 mph), which is clearly more than the allowable 15-km/h (9 mph) difference.

The project's first stage, consisting of 4-lanes from beginning to Nelson Lane and 2-lanes from Nelson Lane to the end, restricts the term of "Freeway" to be used to describe the entire project. The 2-lane portion of the project contains several at-grade intersections and areas of controlled access, therefore, this portion of the route will be a "Controlled Access Highway."

A design exception, regarding minimum distances between two successive ramps or interchanges, may be needed if the City of Lincoln maintains the position and location of their local roads where they intersect with the proposed bypass (e.g. Westwood Blvd). The minimum interchange spacing is 1.5 km in urban areas. Since the City of Lincoln proposed to build the Westwood Interchange, they are preparing their own Project Study Report (PSR). A design exception regarding this issue will be submitted concurrently with their PSR of the Westwood Interchange.

2.1.8 Phasing of Construction

Because of fierce competition for transportation dollars in Placer County, funding for this project has been limited. However, the need remains for some relief to the congestion in the city of Lincoln. In order to balance the need for the project and limited funding, construction will be phased to address the current need, then as congestion increases, funding will be allotted for the completion of the freeway.

There will be two phases to the project, the minimum build and ultimate project. The minimum build is to construct a four-lane freeway with interchanges from Industrial Boulevard to Nelson for the D corridor and Nicolaus for the A corridor. At that point, a two-lane highway will be built to the end of the project. As the need arises due to increased congestion and as funding becomes available, the additional two lanes will be added, and intersections will be converted to interchanges.

2.1.9 Relinquishment of Existing SR 65

The portion of existing SR 65, not re-designated Route 193, will be relinquished to Placer County according to Section 73 of the Streets and Highway (S&H) Code. The S&H Code requires the "highway" to be placed in a "state of good repair" prior to relinquishment. The cost of relinquishment varies by alternative. The relinquishment cost for AAC2, D13 and D13 North Modified is $3.9, $4.1 and $3.7 million, respectively. The cost of relinquishment for D13 South Modified is $4.1 million.

Coordination with the City and County will occur as information about funding becomes known. Permits required for relinquishment will depend on the nature of the work required as a condition of relinquishment. If a lump sum of money is given in lieu of Caltrans bringing the facility up to a good state of repair, then the permits are the responsibility of the City.

2.1.10 No Build

The “No Build” alternative would be to not build the project. However, routine maintenance and operational improvements would continue. If the “No Build” alternative were chosen, congestion would continue in the City of Lincoln. The Level of Service would continue to deteriorate to a LOS F within the city limits. The safety of the traveling public and the residents of the town would be compromised due to the continuing congestion.

The new developments occurring south and southwest of Lincoln that are currently approved will be built whether or not the bypass goes in. With the additional developments, traffic is expected to almost double by the year 2025. For more information on existing and future traffic, please see Chapter 1, Section 1.3.2.

The “No Build” alternative does not address the purpose and need of the project. Congestion will increase as the area develops. The already high accident rate can be expected to rise as congestion increases. Regional trips will be increasingly delayed and the level of service will decrease.

Two additional road connections between Industrial Blvd. and Auburn Ravine included in the City’s General Plan, Westwood Blvd. and Lincoln Parkway, will provide access to newly developing areas. These connections will result in a lower level of service on the existing facility.

2.1.11 Design Modification to avoid the 4 (f) property

Alternative D13, D13 North Modified, D13 South Modified, A5C1 and D1 would cross portions of the Fickewirth Ranch, which has been determined eligible for the NRHP by the consensus of SHPO. Section 4(f) of the Department of Transportation Act of 1966 (49 USC 303) protects historical properties by requiring that a project affecting historic resources can only be allowed if there are no feasible and prudent alternatives. For more information on Section 4(f) please see Chapter 4, Section 14.

Alternatives A5C1, D1, D13, D13 South Modification and D13 North Modification pass through the 104 ha (258 ac) agricultural parcel containing the Fickewirth Ranch. The proposed alignment for A5C1 lies approximately 457 m (1500 ft) from the ranch complex. D1 and D13 and its modifications are approximately 610 m (2000 ft) from the buildings. (See Figure 4-1, showing the location of the property, ranch complex and the alternatives.) The area required runs along the eastern edge of the property. In addition, the southeast corner of the property would be required for the interchange.

Figure 2-5 shows the modification of D13 that avoids the Section 4(f) property. The D-13 alternative is shifted east beginning before the curve at Nicolaus, and then gently curves back into the original D-13 after passing the Fickewirth property. This alternative was examined in some detail as shown on the table below. There would be 11 properties affected by this alternative. Four additional properties are affected, but three properties that would have been affected by D-13 are not affected by the D-13 4(f) alternative. An additional $300,000 would be required for right of way acquisition because of so many properties being landlocked by this alternative.

There would be an additional 2.6 ha (6.5 ac) of wetlands/waters of the U.S. affected by this alternative, including 0.8 ha (2 ac) of vernal pools. An additional 1.9 ha (4.7 ac) of oak woodlands would also be affected by this alternative.

This alternative meets good engineering standards, however, it affects more wetlands and oak habitat than the D 13 North Modified, therefore is not the "Least Environmentally Damaging Practicable Alternative" (LEDPA).

Table -2-2 Summary of Impacts; A5C1, D13 North Modified and D13 4(f)

	A5C1 Alignment	D13 North Modified	D13 4(f)
Wetlands/ Nonwetland Waters	9.4 ha (23.1 ac) wetlands/waters 6.5 ha (16.1 ac) vernal pool/swales 2.2 ha (5.4 ac) of marsh two high value vernal pool complexes	5.6 ha (13.8 ac) wetlands/waters 2.1 ha (5.2 ac) vernal pools/swales 3.1 ha (7.6) ac of marsh	8.2 ha (20.3 ac) wetlands/waters 2.9 ha (7.2 ac) vernal pools/swales 3.6 ha (9.0 ac) of marsh

	A5C1 Alignment	D13 North Modified	D13 4(f)
Special Status Species	Vernal pool fairy shrimp Ahart's dwarf rush Raptor foraging and potential nesting habitat two high value vernal pool complexes	Vernal pool fairy shrimp Raptor foraging and potential nesting habitat	Vernal pool fairy shrimp Raptor foraging and potential nesting habitat
Natural Communities Wildlife, Fisheries	80.1 ha (197.7 ac) grassland/ vernal pool 2.2 ha (5.4 ac) riparian forest 5.8 ha (14.3 ac) oak woodland	64.2 ha (158.7 ac) grassland/ vernal pool 1.3 ha (3.3 ac) riparian forest 3.5 ha (8.6 ac) oak woodland	86.8 ha (214.5 ac) grassland/ vernal pool 1.5 ha (3.6 ac) riparian forest 5.4 ha (13.3 ac) oak woodland
Water Quality	185.8 ha (59.0 ac) footprint with 11 stream crossings	172.6 ha (426.6 ac) footprint with 8 stream crossings	221.3 ha (546.7 ac) footprint with 8 stream crossings
Cultural Resources	Requires small amount of right-of-way from property eligible for National Register.	Requires small amount of right-of-way from property eligible for National Register.	None
Agricultural Land	54.4 ha (134.3 ac)	96.7 ha (238.8 ac)	87.9 ha (217.1 ac)
4(f) Involvement	Yes 1.5 ha (3.7 ac)	Yes 10.7 ha (26.5 ac)	No
Land Use/ Socio-economics	Residences: 91 Businesses: 5	Residences: 10 Businesses: 1	Residences: 11 Businesses: 1
Right of Way Costs	$56,000,000	$22,500,000	$25,500,000
Cost	$151,000.000	$156,647,000 Minimum project $185,402,000 ultimate project	$159,647,000 Minimum project $185,402,000 ultimate project

Table 2-3 Summary of Impacts A5C1, AAC2 and D1

	AAC2 Alignment	D13 Alignment	D13 South Modified	D1 Alignment
Wetlands/ Nonwetland Waters	6.3 ha (15.5 ac) wetlands/waters 3.3 ha (8.0 ac) vernal pool/swales 2.4 ha (6.0 ac) of marsh two high value vernal pool complexes	5.3 ha (13.1 ac) wetlands/waters 2.2 ha (5.4 ac) vernal pools/swales 2.8 ha (6.8) ac of marsh one high value marsh	6.8 ha (16.8 ac) wetlands/waters 2.4 ha (6.0 ac) vernal pool/swales 2.2 ha (5.5 ac) marsh	5.7 ha (14.1 ac) wetlands/waters 2.8 ha (6.8 ac) vernal pool/swales 2.6 ha (6.3 ac) of marsh one high value marsh
Special Status Species	Vernal pool fairy shrimp Ahart's dwarf rush Raptor foraging and potential nesting habitat two high value vernal pool complexes	Vernal pool fairy shrimp Raptor foraging and potential nesting habitat one high value marsh	Vernal pool fairy shrimp Raptor foraging and potential nesting habitat	Vernal pool fairy shrimp Raptor foraging and potential nesting habitat one high value marsh

	AAC2 Alignment	D13 Alignment	D13 South Modified	D1 Alignment
Natural Communities Wildlife, Fisheries	76.0 ha (187.7 ac) grassland/ vernal pool 1.1 ha (2.6 ac) riparian forest 10.2 ha (25.2 ac) oak woodland	50.4 ha (123.3 ac) grassland/ vernal pool 1.3 ha (3.3 ac) riparian forest 3.5 ha (8.6 ac) oak woodlan	52.5 ha (129.7 ac) grassland/ vernal pool 1.2 ha (3.0 ac) riparian forest 0.2 ha (0.4 ac) oak woodland	48.4 ha (119.4 ac) grassland/vernal pool 1.3 ha (3.2 ac) riparian forest 0.4 ha (0.9 acre) oak woodland
Water Quality	178.3 ha (440.6 ac) footprint with 11 stream crossings	198.9 ha (491.5 ac) footprint with 9 stream crossings	196.3 ha (485.2 ac) footprint with 9 stream crossings	182.8 ha (451.7 ac) footprint with 9 stream crossings
Cultural Resources	Requires small amount of right of way from property eligible for National Register. Impacts to recorded archeological site	Requires small amount of right-of-way from property eligible for National Register.	Requires small amount of right-of-way from property eligible for National Register.	Requires small amount of right of way from property eligible for National Register.
Agricultural Land	51.1 ha 126.1 ac	102.5 ha 253.2 ac	95.5 ha 235.7 ac	84.4 ha 208.5 ac
Section 4(f) Use	If the archaeological site were determined to warrant preservation in place, then this alternative would affect a Section 4(f) property.	Yes 10.7 ha (26.5 ac)	Yes 10.7 ha (26.5 ac)	Yes 10.7 ha (26.5 ac)
Land Use/ Socio-economics	Residences: 20 Businesses: 2	Residences: 10 Businesses: 2	Residences: 14 Businesses: 2	Residences: 20 Businesses: 2
Right of Way Costs	$34,000,000	$20,000,000	$20,500,000	$22,000,000
Cost	$159 million (min) $185 million (max)	$157 million (min) $185 million (max)	$186 million	$194 million

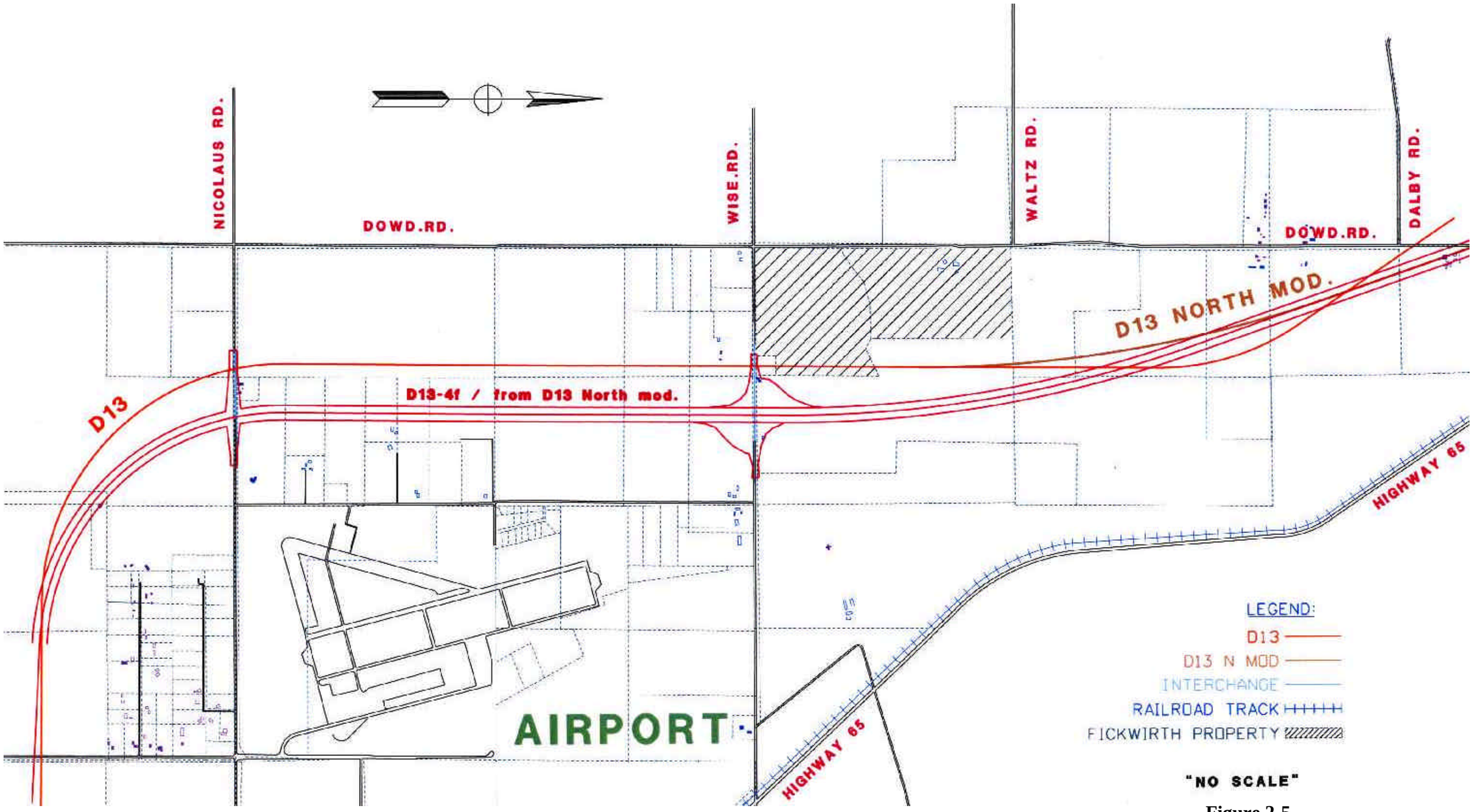


Figure 2-5
Shifting of D 13

2.1.12 Preferred Alternative

All reasonable alternatives were developed to a comparative level of detail so their comparative merits may be evaluated. Based on early coordination and environmental studies, the D13 North Modification appears to be the likely Preferred Alternative. However, the final selection of a preferred alternative will not be made until the alternative impacts and comments on the draft EIR/S and from the public meeting have been fully evaluated.

An Alternative Analysis based on the earlier alignments; AA, A5, AAC2, A5C1, D1 and D13 was completed in 1998 in accordance with the Section 404 (b)(1) Guidelines and the NEPA/404 Integration Process. The purpose of the analysis is to evaluate the reasonableness and practicability of a number of alternatives for meeting the objectives of the project and provide documentation for the preparation of the Section 404 permit. The Section 404 (b)(1) Guidelines require that this analysis be adequate to identify the "Least Environmentally Damaging Practicable Alternative" (LEDPA). This was accomplished by comparing the alternatives for practicability, project purpose and overall environmental effects.

Based on the analysis, the D corridor alignments are less damaging than the A/C alignments, and the D 13 is less damaging than the D 1. Since the Alternative Analysis was completed, a modification of the D13 alignment was developed. The D13 North Modified is compared with the D 13 in Table 2-1.

The Alternative Analysis was distributed to our NEPA partners; however, they had no comments on it.

2.2 ALTERNATIVES WITHDRAWN FROM CONSIDERATION

The following alternatives were eliminated from further study for a variety of reasons that are included in the description of the alternative. Figure 2-6 shows the location of these alternatives.

2.2.1 The AA and A5 Alternatives

Since the AA and A5 alternatives were first developed, numerous housing developments have been constructed in the path of these alternatives. Consequently, the A alternatives impact quite a few more residents than the D corridor. Additional soundwalls could be required to protect the residents not directly affected (relocated) by these alternatives.

In addition, the AA and A5 alternatives will not alleviate traffic within the project area as outlined by the Purpose & Need. The D and AC corridors offer approximately the same benefit while the A corridor offers considerably less benefit. This is because the A corridor ties back into the existing two lane SR 65 which cannot accommodate the

Figure 2-6 Alternatives Withdrawn from Consideration

future traffic. The A alternative ties into SR 65 much further south than the D and AC corridors. Northbound traffic flowing from the A alternative must pass through the Wise Road and Riosa Road intersections on existing SR 65. These intersections will need to be controlled with a traffic signal and cannot accommodate the future traffic demand. Traffic on existing SR 65 will become congested. This congestion will deteriorate to the point that traffic will backup onto the A Bypass alternative. The D and AC corridors connect back to existing SR 65 north of the Riosa Road intersection and will not be delayed by this intersection. In addition, the A alternative has much higher delay and lower speed than the other alternatives.

There are several protected resources that would be affected by these alternatives. The A corridor (including AA, A3, A4 and A5) crosses through areas of high quality vernal pools between Nicolaus Road and the UPTC railroad tracks. Near the north connection with existing SR 65, Bogg's Lake hedge hyssop (*Gratiola heterosepala)*, a California endangered plant species, has been found. In addition, a mature stand of oak trees is located within the A corridor near Nicolaus Road. A pair of nesting Swainson's hawks, a California threatened species, have been observed nesting in this stand of oaks.

In addition to not meeting the purpose of the project, the AA and A5 alternatives do not meet the design parameters that were agreed upon for this project. Below is a description of the AA and A5 alternatives.

Alternative AA

The "AA" line begins approximately 0.5 km (0.3 mi) south of Industrial Blvd. at KP 20 (PM12.5). The alignment curves in a northwesterly direction and proceeds over Industrial Blvd. and the Union Pacific Transportation Company (UPTC) tracks, intersecting Moore Road approximately 607 m (1992 ft.) from the Moore Road/Joiner Parkway intersection. The line turns in a northeasterly direction approximately 2.4 km (1.5 mi) west of the existing alignment. At Auburn Ravine, Alternative AA is just west of the (USGS topographical map) section line between sections 16 and 17.

At Nicolaus Road, the AA line was set approximately 335 m (1100 ft) east of Lakeside Drive. From Nicolaus Road, the A line continues on a north-northeast bearing until it nears the UPTC tracks where it curves to the left, proceeds over the railroad tracks and existing SR 65, tying back into the existing highway approximately 0.4 km (0.3 mi) south of Wise Road. The AA alignment is approximately 8.0 km (5 mi) long and terminates at KP 28 (PM17.3).

Alternative A5

The A5 alignment was created to avoid the Lincoln Airpark in the event it develops before the modified route is adopted. This alternative is 8.05 km (5.0 mi) long, beginning approximately 0.5 km (0.3 mi) south of Industrial Blvd. at KP 20 (PM12.5) and ending at

KP 28 (PM17.1). The alignment curves in a northwesterly direction and proceeds over Industrial Blvd. and the UPTC tracks. Near the section corner at Moore Road, the line turns in a northeasterly direction approximately 2.4 km (1.5 mi) west of the existing alignment. At Nicolaus Road the A5 line is approximately 247 m (810 ft) east of Lakeside Drive and 38 m (125 ft) east of the section line. At the north end of the project this alignment proceeds via grade separation over the railroad tracks and the existing highway, similar to the other A alternatives.

The A5 line impacts excellent quality wetlands near the beginning of the project, as well as an Oak woodland near Nicolaus Road. However, the A5 line does avoid the California Endangered Bogg's Lake hedge hyssop, located in vernal pools north of the existing highway.

2.2.2 Alternative A3

The A3 Alternative is another variation of the A line. A3 coincides with the A alignment in the southerly section of the project to Auburn Ravine. There it veers north, running parallel and west of the section line. North of Nicolaus Road, the A3 line continues on the west side of the section line. The alignment crosses over the railroad tracks and the existing highway, then turns in a northwesterly direction and conforms with existing SR 65. The A3 and A4 alignments were developed to minimize impacts on the biologically sensitive areas in the A corridor. This is based on the assumption that the area west of the section line has fewer protected resources than the area east of the section line. The A3 and A4 alternatives were dropped in favor of A5 which, at the time, affected less residential area.

From Auburn Ravine north, the A3 line impacts approximately the same amount of wetlands as the A line; however, the vernal pools are of lower quality. The A3 line avoids the area where the Bogg's Lake hedge hyssop was found.

At Nicolaus Road, the A3 line is approximately 168 m (551 ft) east of Lakeside Drive. Construction of Nicolaus interchange would require the closure of Lakeside Drive. Alternate access to the Lincoln Airpark could be provided by improving the connection to Fairway Drive located approximately 305 m (1000 ft) west of Lakeside Drive. Improvements to the interior streets in Lincoln Airpark would mitigate some of the effects of closing Lakeside Drive at Nicolaus Road.

Alternative A3 was withdrawn from consideration due to the need to close Lakeside Drive. The City of Lincoln strongly opposes the closure of Lakeside Drive. Closing Lakeside Drive would disrupt the planned subdivision including a loop golf course located just north of the Fairway Dr./Nicolaus Road intersection. Construction of Lakeside Drive was accomplished through an Assessment District. Relocating this road and utilities would alter existing easements and create a complex financial situation.

2.2.3 Alternative A4

The A4 alternative is a variation of the A line. South of the Auburn Ravine, the A4 line coincides with the A alignment. The A4 alignment generally runs to the west side of the section line, minimizing the impact on wetlands in the area. Approaching Nicolaus Road, the alignment shifts approximately 46 m (151 ft) east of the A3 line and 213 m (699 ft) east of Lakeside Drive. Construction of the A4 alignment would not require the closure of Lakeside Drive. A diamond/single loop interchange could be utilized at this location. The distance between the southbound ramps intersection and Lakeside Drive is 137 m (449 ft). Although this interchange configuration has less capacity than a partial cloverleaf, as in the A alternative, adequate capacity at the off-ramp intersection and nearby local intersections can be provided.

Alternative A4 removes more of the oak trees near Nicolaus Road than the A3 line, but substantially less than the A line, and wetland impacts are less than the A line. The A4 line has substantially less impact on vernal pools than the A line and also avoids the area where the Bogg's Lake hedge hyssop is found.

2.2.4 Alternative AFD

The AFD alternative considered future upgrading to an expressway/freeway from near Wise Road to north of Sheridan, if an A Corridor alternative was initially constructed. The AFD line would follow the entire A Corridor and rather than connecting with existing SR 65 at the north end of the A Corridor, the AFD line would proceed on a new alignment east of the existing highway. The AFD line would then cross the existing highway, approximately 3 miles south of Sheridan, where it would conform to the north end of the D Corridor alignments.

Another version of the AFD would be to upgrade the existing alignment from north of the A Corridor alignment to north of Sheridan. This alignment would require extensive frontage roads and right of way.

The AFD alignment was evaluated in the 1990 Stage II Project Work Program and was not considered feasible due to its high cost.

2.2.5 Alternative D2

The D2 alternative was developed in an attempt to reduce the impact on wetlands and residents in the southern portion of the project. This alignment begins 2 km (1.24 mi) south of the D1 line. The D2 line is roughly parallel to the D1 line upon leaving the existing alignment to near Nicolaus Road. North of Nicolaus Road, the D2 line coincides with the D1 alignment. The D2 alignment would require the removal of four to seven residential dwellings and possible soundwalls for approximately five dwellings. Based on a preliminary survey, the D2 line has a greater impact on dwellings and vernal pools than the D1 line. It is also longer and more remote from Lincoln and has a greater impact

on wetlands than the D1 line. For these reasons, the D2 was eliminated from further study.

2.2.6 Alternative D13 Dowd Modification

This alignment was developed in response to the Conservation Easement on the Canevari's property. The D 13 Dowd modification was developed at the same time as the D 13 North Modification. This alternative follows the D 13 alignment until it meets Dalby Road, where it curves east to join Dowd Road, meeting with SR 65 at Sheridan. Dowd Road would be widened and improved to accommodate the increased traffic, but would remain a two-lane road. The portion of the alternative along Dowd Road would not be access controlled.

The rejection of this alternative was based on safety and operation due to location of existing driveways which would interfere with the operation of the facility.

2.2.7 Alternative T

The T alternative upgrades the existing SR 65 alignment to four lanes. From Industrial Blvd. to Auburn Ravine and from Gladding Road to near Wise Road, a four lane expressway would be constructed on existing SR 65 alignment. From Auburn Ravine to Gladding Road, the T line proposed to provide four lanes plus a continuous left turn lane. This can generally be accomplished by eliminating on-street parking and narrowing the sidewalks from 3.6 m (12 ft) to 2.4 m (8 ft). One or two parking lots could be constructed on vacant land between the junction of SR 193 and Sixth Street, providing these properties do not develop first. Also, older houses on F Street (one block east) could be converted to parking.

Drainage throughout the downtown section would need to be updated to current standards. South of First Street, it is anticipated the entire structural section will need to be reconstructed.

Telephone poles throughout the town are located .9 m (3 ft) behind the face of the curb on the west side of the highway. In addition, a major natural gas junction valve is located east of the clay plant. This valve and possibly some of the gas line would require relocation. Railroad crossing gates would require reconstruction.

The primary disadvantage of this alternative is that it fails to satisfy the regional need for an adequate freeway system in the area. It does not alleviate the problems of numerous cross streets and driveways. Initially, widening to four lanes may reduce the accident rate at the numerous intersections in town. As Lincoln grows, traffic through the central business district will become more congested and it is anticipated the intersection accident rate will increase.

Constructing the four-lane section through the downtown area does not leave an option for future widening. The 10-year and 20-year LOS for four lanes downtown are

projected to be E and F respectively. After the 20-year design period, the only viable option to enhance the level of service and capacity will be to construct a bypass.

The Lincoln General Plan policy is to "promote and renew the existing central business district, in order to provide diversified business opportunities." Heavy traffic volumes associated with a four-lane facility, loss of parking and the removal of at least one existing business are not consistent with the General Plan.

Caltrans Transportation Concept Report (TCR) calls ultimately for a four-lane freeway on this section of highway. For the above reasons, this alternative does not satisfy the regional or local requirements for the State highway.

2.2.8 Alternative E

The E Alternative begins south of Industrial Blvd. similar to the A and D1 alignments. The E line turns in a northwesterly direction around the east side of Lincoln and proceeds through vacant land until it crosses SR 193. The terrain through this first section is flat to rolling hills and land use is primarily grazing. After crossing SR 193, the alignment proceeds northerly and crosses Auburn Ravine. North of Auburn Ravine, there are scattered houses and ranchettes. In this area the alignment turns in a westerly direction. The E line crosses Virginiatown Road and McCourtney Road in this area. The line passes along the north edge of the claybed prior to reconnecting with the existing facility. This alignment was developed as an alternative to the A alignment. The E alignment distance is approximately 4.2 km (2.6 mi) out of direction as compared to the existing facility. The traffic analysis indicates that a major portion of through traffic would exit the expressway and proceed through Lincoln to save time and distance travel. This alignment, therefore, does not satisfy the purpose and need of the project.

2.2.9 TSM (Transportation System Management) Alternative

The Transportation System Management and Travel Demand Management (TSM/TDM) Alternative was evaluated and eliminated as an isolated alternative in the Major Investment Study. This alternative covers a range of improvements and strategies that aim to reduce the demand on and increase the efficiency of the existing transportation system, including measures such as the expansion of park and ride facilities with connections to intercity transit bus service, ride matching, car/vanpooling and teleconferencing. The estimated cost is not available.

Other TSM measures include signal optimization, two way left turn lanes, right turn only lanes, parking prohibitions and outside the central core, shoulder widening, truck lanes, passing lanes and merge/ diverge lanes.

The TSM/TDM alternative received the fifth highest score in the evaluation of eight alternatives which included converting the existing highway to four lanes, a minimum bypass alternative, a two and four lane bypass alternative, commuter rail trip

diversion, intercity transit bus service and transportation system management and travel demand management (TSM/TDM). Given the City of Lincoln's low-density land uses and an economy of small business employers, TSM/TDM alternatives may only have limited applicability within the study area. Assuming five percent of the forecasted inter-regional commute traffic will divert from SR 65 to TSM/TDM applications within the study area, the benefits to SR 65 would be marginal.

Although the Intercity Bus Service and TSM/TDM alternatives scored low as independent alternatives, combined with an improvement such as the bypass alternatives, they would play an important role in the effective use of the overall transportation system.

A park and ride facility is included in the project, and will be located at the junction of Industrial Boulevard and SR 65. As a stand-alone project, the park and ride would not be capable of resolving the impacts from the projected increase in traffic.

3 AFFECTED ENVIRONMENT

This chapter describes the environment likely to be affected by the project. The purpose of this chapter is to give the reader background with which to evaluate the impacts of the project which are described in Chapter 4, Environmental Consequences.

3.1 SOCIAL, ECONOMIC AND LAND USE

A Community Impact Assessment Report (CIAR) was completed for this project. This report describes the socioeconomic environment and evaluates the socioeconomic impact of this project. Copies of this report are available for review at the Department of Transportation, District 3 Sacramento office, 2800 Gateway Oaks Dr., Sacramento, CA.

3.1.1 Study Area

The Study Area for the Community Impact Assessment includes the City of Lincoln and the Sheridan Community planning area in addition to the South Placer and Auburn-Foothills regions of Placer County. The City of Lincoln consists of an area of approximately 7891 ha (19,500 ac). The Sheridan Community planning area embodies an estimated 777 ha (1,920 ac) in Placer County's northwestern region. General information about the South Placer and Auburn-Foothills regions of Placer County is included to provide a greater understanding of the relative significance of the Lincoln Bypass to the West Placer County community. For purposes of this document, the South Placer and Auburn-Foothills regions of Placer County will be referred to as West Placer County.

3.1.2 Major Land Uses

The Placer County General Plan (1994) provides an overall framework of the County's land use plan (Figure 3-1), whereas, the City of Lincoln General Plan (1988) and Sheridan General Plan (1976) supplement and elaborate upon the Study Area. Figure 3-2 illustrates the major land uses for the City of Lincoln as adopted under the 1988 General Plan. Sheridan's land use designations adopted under the 1976 General Plan are depicted on Figure 3-3. Major land uses identified within the Study Area are: agriculture, residential, industrial, commercial and resource protection, greenbelt, open space, and recreation.

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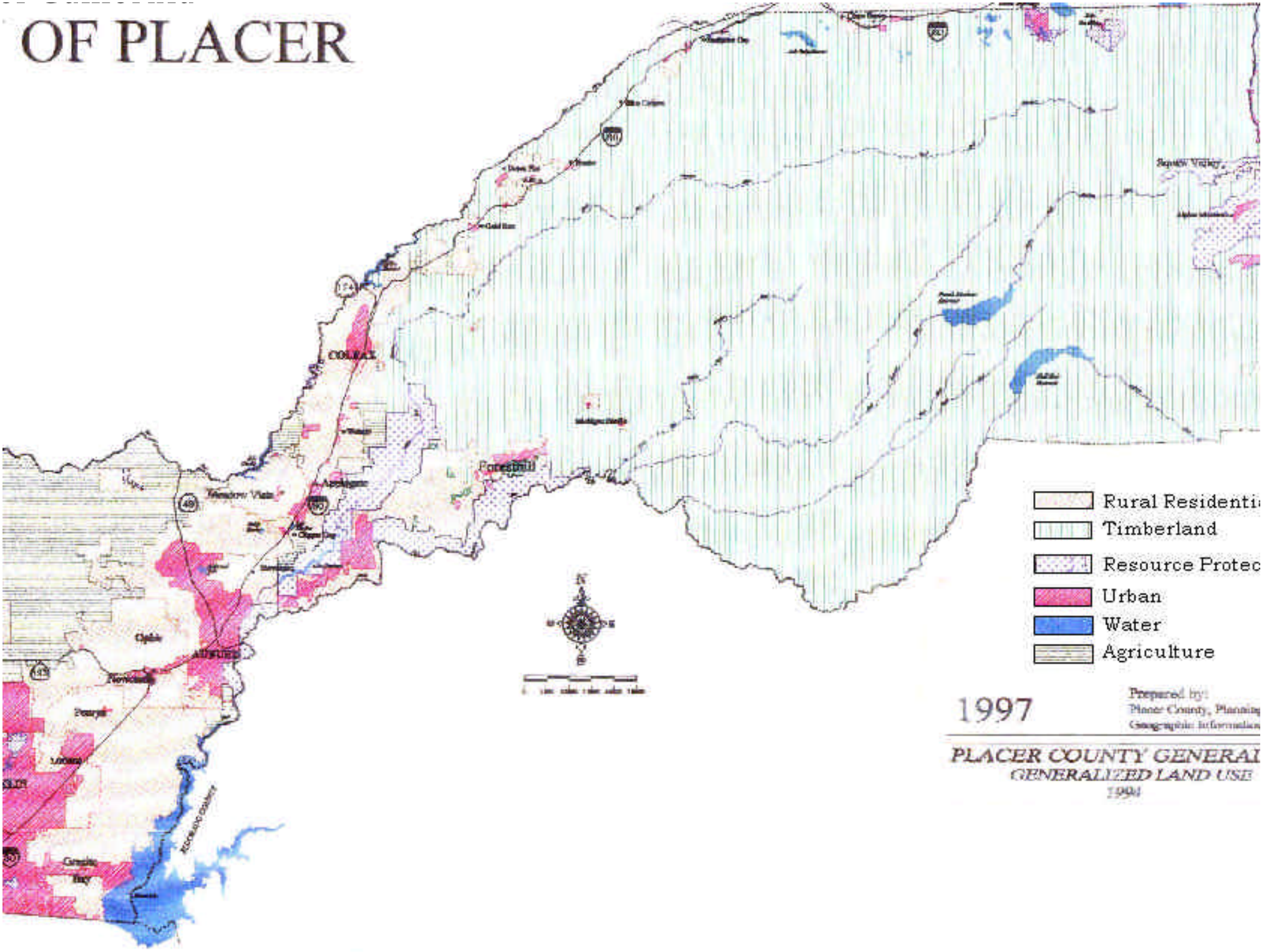

COLFAX
Forest Hill
Auburn
Rural Residenti
Timberland
Resource Protec
Urban
Water
Agriculture
1997
Prepared by:
Placer County, Planning
PLACER COUNTY GENERAL
GENERALIZED LAND USE
1997

Figure 3-2 Lincoln General Land Use Map

Figure 3-3 Sheridan Land Use Plan

Agriculture

Compared to other California counties, Placer County ranks in the lower 20% in terms of total farmland acreage; nevertheless, agriculture is an important component in Placer County's economy as substantiated by the $47.9 million value of production in 1996. Most of the agricultural use in the project area is within Placer County's jurisdiction and outside Lincoln's city limits.

An estimated 30% of Lincoln's planning area continues to be used for agriculture although zoned as urban reserve. Approximately 1813 ha (4,480 ac) lie in the southwestern region while an estimated 518 ha (1,280 ac) are located in the northwestern perimeter. With the exception of a turkey farm, the majority of the agricultural lands are used for cattle grazing; however, both irrigated and dry land farming do exist with rice being the dominant crop.

Unlike the City of Lincoln, the Sheridan planning area maintains approximately 84% of its land for agricultural uses, totaling an estimated 653 ha (1,613 ac). Agriculture within the Sheridan area has been highly dependent on the availability of water and the economy which has limited much of the area to dry grazing and irrigated pastures with moderate amounts of rice production.

Agricultural Preserves (Williamson Act Agreements)

As of January 1997, Placer County has 17 351 ha (42,876 ac) of farmland that are considered agricultural preserves, 6031 ha (14,903 ac) prime farmlands and 11 189 ha (27,973 ac) non-prime farmlands. A total of 9017 ha (22,275 ac) are currently slated for non-renewal of their contract; 4069 ha (10,173 ac) of prime farmlands and 4841 ha (12,102 ac) non-prime farmlands (Doleman, M., 1998).

Figure 3-4 shows the distribution of agricultural land. All of the alternatives will impact prime, unique, statewide, and locally important farmlands. Completion of the Farmland Impact Rating (See Chapter 7, Comments and Coordination and Appendix D) showed that alternatives, A5C1 and AAC2 had point values of 158, and 157, that fell below the 160-point threshold for the determination of significant impacts. The D1 and D13 point values were 162 and 161, respectively, necessitating the consideration of other alternatives or mitigation measures to reduce project impacts on farmland. The D13 South and North Modification values were both 147.

Figure 3-4 Williamson Act Lands

Residential

Rural residential areas in West Placer County have generally been limited to the agricultural areas while low, medium, and high density residential is essentially aggregated around the cities. Overall, the 1997 Placer County housing stock totaled 95,374 of which 75,955 were single family dwelling units, 14,167 were multiple family dwelling units and 5,252 were mobile homes/trailers.

Residential land uses in Lincoln occur primarily around the downtown area and project outward, generally concentrated south of Nicolaus Road and north of the Auburn Ravine. The housing stock of Lincoln is composed of approximately 2,874 single family residences, 849 multiple family units and 69 mobile homes.

Figure 3-5 Typical residential neighborhood in Lincoln (left) and Sheridan (right).





Sheridan's urban housing occurs within and on the immediate perimeters of the township. The core area is zoned for medium density residential housing while high and low density residential housing lies northwest of the core area on the east and west side of Camp Far West Road, respectively. Single family dwelling units primarily make up the housing stock, however one mobile home estate has been established within the township.

Industrial

There are approximately 1100 ha (2,750 ac) zoned for industrial, light industrial, and industrial planned development within Lincoln. Currently, an estimated 55% of the land zoned for industrial use is developed, primarily located along Lincoln's northern boundary. Undeveloped industrial land continues to be used for agricultural uses until development is necessary. The most prominent industrial companies include the Gladding-McBean clay manufacturing plant, Sierra Pacific Industries wood products, the American Poly-Therm aerospace plant, Weco aircraft gauges and D&D Cabinets. Sheridan's Sunset Industrial Park lies adjacent to the township, straddling SR 65.

Currently, 10 ha (26 ac) are zoned for industrial use in Sheridan and is not expected to expand in the near future.

Figure 3-6 Gladding McBean clay manufacturing plant and Sierra Pacific Lumber





Commercial

Lincoln's downtown business district is composed of mixed commercial, retail, professional offices, and service outlets. There is approximately 1.2 ha (3 ac) zoned for commercial use located in a corridor along SR 65 between "H" and "E" Streets. Some of the older buildings in the business district have been restored while new construction has primarily been comprised of fast food restaurants. Nevertheless, the downtown area has generally been maintained.

Figure 3-7 Typical downtown Lincoln and Sheridan businesses





Sheridan has set aside approximately 4 ha (10 ac) to be zoned for commercial uses. Resembling other rural communities, some businesses provide dual services such as the grocery/hardware store and the small market/bait store. Commercial zones are located along SR 65 and Camp Far West Road; however, many of the existing buildings are currently vacant.

Resource Protection, Greenbelt, Open Space, and Recreation

Placer County, the City of Lincoln and Sheridan have all identified agriculture as a major resource to be protected. Protection of agricultural land uses is generally in the form of buffer zones. These buffer zones can be greenbelts, open space and recreational facilities. Riparian vegetation along the Markham and Auburn Ravines as well as urban reserve in Lincoln's southeast region currently provide natural buffer zones. Buffer zones are not employed within the Sheridan planning area; however, Sheridan's land use designations have provided a "gradation" between the farmlands and urban development.

Placer Legacy Project

Recently, Placer County has implemented the Placer Legacy Project. The Placer Legacy Project is intended to develop specific, economically viable implementation programs that focus on the preservation of open spaces in order to maintain the abundance of the existing diverse natural habitats while supporting the economic viability of the County and enhancing property values. The Citizens Advisory Committee, the Interagency Working Group and the Scientific Working Group work under the umbrella of the Placer Legacy to develop programs where no programs currently exist and strengthen existing programs.

Placer Legacy proposes that Placer County put up to 75,000 acres of land into a preserve anticipated costing up to $183 million. How much land the Placer Legacy program can acquire will be based on the resources available to the county, including tax revenues, State or Federal grants and donations.

3.1.3 Developable Land

Generally, development in Placer County has been concentrated around the major cities, consistent with the land use zoning specified in the General Plan. Conversely, the City of Lincoln has zoned much of the agricultural land and open space as urban reserve.

Sheridan, being under the jurisdiction of Placer County with a strong agricultural influence, has not set aside additional areas as urban reserve. Moreover, empty lots are still available for development scattered within the already developed areas.

Development Trends

Within the Study Area, Lincoln is generally the only area that is experiencing growth or expects growth in the near future. Lincoln has steadily been growing from the existing city limits outward into its sphere of influence. As of May 2001, the City of Lincoln has approved eleven new subdivisions of which six are under construction throughout the city. Table 3-1 identifies current development in Lincoln. As development progresses outward, Lincoln has adopted the use of planned developments

as a means to prevent urban sprawl. Table lists the current projects for the City of Lincoln.

Table 3-1 Current Projects for the City of Lincoln

Residential Projects		
Brookview IV	209 Single Family Residential	23.4 ha (58 ac)
Lakeside Dr. Estates	98 Single Family Residential	Not available
Teal Hollow Subdivision	341 Single Family Residential	36.8 ha (91 ac) ±
Glenmoor	207 Single Family Residential	Not available
Terra Cotta Village	7 Single Family Residential	Not available
Aspen Meadows	87 Single Family Residential SFRS	Not available
Twelve Bridges Area A	4,331 Unit Planned Development	1209.6 ha (2,989 ac)
Twelve Bridges Sun City Lincoln Hills	6,800 Unit Planned Development	1191.8 ha (2,945 ac)
Twelve Bridges Area C	100 Unit Planned Development	20.23 ha (50 ac)
Lincoln Crossing	2,985 Unit Planned Development	433.0 ha (1,070 ac)
Three D	322 Unit Planned Development	42.1 ha (104 ac)
Industrial/Commercial Projects		
Lincoln Hills Town Center Shell Station	Gas Station and Car Wash	Not available
Sterling Pointe	Commercial/Industrial property	31.1 ha (76.83 ac)
Lincoln Center Chevron Facility	Gas Station, Convenience Store, Fast food Restaurant, Car Wash, Card Lock	0.91 ha (2.25 ac)
Joiner Parkway Self Storage Facility	28499 m^2 of storage (93,500 ft^2)	1.86 ha (4.6 ac)
Joiner Parkway Plaza	Commercial, food mart, gas station, car wash	0.88 ha (2.18 ac)
Eskaton	230 unit Senior Housing	Not available
Crosswinds Hangars	5 Hangars	1.73 ha (4.28 ac)
AB Tools Facility	7681 m^2 (25,200 ft^2) Industrial Facility	0.97 ha (2.4 ac)

Figure 3-8 Development Within the Lincoln City Limits

Current Planned Development Projects

Please see Figure 3-8 for locations of these projects. The **Lincoln Crossing** planned development is located in the southwest region of Lincoln's planning area. In addition to the residential neighborhoods, at build-out, the Lincoln Crossing will consist of a 80 ha (201 ac) of natural preserve area, a 65 ha (162 ac) golf course, 18 ha (44 ac) for business/professional and commercial uses, nine neighborhood parks totaling 17 ha (42 ac), two elementary schools, one junior high school and other public facilities.

The **Three D** planned development is located in the southwest region of Lincoln's planning area and west of the Lincoln Crossing planned development. The project includes 322 single family residences and floodplain and wetland preserves.

Twelve Bridges Areas A, B (aka Sun City Lincoln Hills) and C are located in the southeast region of Lincoln. The project includes 11,231 homes, commercial buildings, open space and recreational uses and public facilities. The unique feature of the Twelve Bridges development is the designation of 5,300 homes as age-restricted for an "active-adult community."

Sterling Pointe is a commercial/industrial park, which includes office warehouses and retail commercial and nature preserve areas on 31 ha (76.83 ac).

3.1.4 Federal, State, County and City Adopted Goals and Policies

Agriculture

Federal Policies

In accordance with the National Environmental Policy Act (NEPA) and the provisions of the Farmland Protection Policy Act (7 USC 4201-4209; and its regulations, 7 CFR Part 658), Federal actions that would result in a conversion of prime, unique, statewide, or local important farmland to non-farm use must examine the effects of the action using the criteria set forth in the Act, and, if there are adverse effects, must consider alternatives to lessen them. Early consultation with the Natural Resource Conservation Service (NRCS) and completion of a Farmland Conversion Impact Rating (Form AD 1006) was conducted on June 22,1999.

State Policies

The State of California has a voluntary program by which owners of farmland or open space can define their land as an Agricultural Preserve through the use of California Land Conservation (Williamson) Act contracts. Landowners are offered a preferential tax rate based on a property's agricultural value, rather than its full market value. In return, the landowner is required to sign a contract with the appropriate local jurisdiction

stipulating that the owner will not develop the land for a minimum of a ten-year period. Each year the contract is automatically renewed for a new ten-year period, unless the landowner notifies the local government of the desire not to renew. In that case, the land use restrictions remain in effect until the remaining nine years of the contract have passed. There are also provisions for canceling the contract if cancellation is consistent with the purposes of the Williamson Act or otherwise found to be in the public interest.

The Department of Conservation Farmland Mapping and Monitoring Program has tracked protected farmland under the California Land Conservation (Williamson) Act Figure 3-4 depicts the farmland in Placer County and farmland under the Williamson Act.

Table 3-2 distinguishes the number of affected farmlands that are under Williamson Act contracts, farmlands that have opted to not renew the Williamson Act contracts but are still subject to land use restriction for the remainder of the contract, irrigated farmland that is under normal ownership and vacant or dry farmland under normal ownership.

Table 3-2 Affected Farmland Parcels by Alternative

Alternative	CLCA Restriction (Williamson Act)		Farms Under Normal Ownership		Total Affected Farmland
	Under Contract[1]	Non-Renewal[2]	Irrigated Farm[3]	Vacant, Dry Farm[4]	
A5C1	8	7	1	6	22
AAC2	9	7	1	5	22
D1	14	13	3	7	37
D13	17	13	3	8	41
D13 South Modification	15	7	1	5	28
D13 North Modification	16	8	1	4	28

Source: Dept. of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program, Placer County 1996 Land Conservation Act Enrollment.

[1] Under Contract means that these farmlands are under an automatically renewable contract provided by the California Land Conservation Act (Williamson Act) for a ten-year period.

[2] Non-Renewal means that the landowners had previously signed a ten-year contract provided by the California Land Conservation Act (Williamson Act) but have opted not to renew. Therefore, the farmland is subject to land use restrictions for the remaining nine years of the contract.

[3] Irrigated Farm means that the land is considered irrigated farmland under normal ownership. Therefore, the farmland is under no land use restrictions.

[4] Vacant, Dry Farm means that the land is either vacant but previously farmed or is dry farmed and is under normal ownership. Therefore, the farmland is under no land use restrictions.

Placer County Policies

Recognizing the importance of agriculture, the Placer County Board of Supervisors adopted the Placer County Agricultural Element (1989) to supplement the Countywide General Plan in order to "establish policies that will improve the viability of agricultural operations and promote the conservation of agricultural land."

City of Lincoln Policies

Although agriculture does not occupy a large amount of the area within the City of Lincoln, there are policies outlined in the General Plan to retain rural agricultural areas until the need for development emerges. These agricultural policies are meant to ensure that agriculture will continue to be a significant land use by implementing planned development based on economic and population needs. Additionally, Lincoln has adopted the policy to require that agricultural land uses be buffered from urban land uses through the use of greenbelts, open space setbacks, soundwalls, fencing and berming.

Sheridan Community Policies

Sheridan's economy is strongly influenced by the agricultural presence; consequently, the General Plan emphasizes the preservation of agricultural land uses. Sheridan's goal for agriculture as an environmental resource specifies that "more productive agricultural soils be put to agricultural uses rather than being converted to non-agricultural activities." Additionally, Sheridan's community development goal also encourages the "continued and increased agricultural activity on lands conducive to agricultural uses."

Residential

Placer County Policies

According to the Placer County General Plan the goal for residential land use is "to provide adequate land in a range of residential densities to accommodate the housing needs of all income groups expected to reside in Placer County." This is accomplished by promoting new residential development in higher-density residential areas located along major transportation corridors and transit routes.

City of Lincoln Policies

The goal for residential land use outlined in the Lincoln General Plan is "to designate, protect and provide land to ensure sufficient residential development to meet community needs." The city seeks to accomplish this by providing a variety of land use designations that will meet the future needs of the city and promote flexibility and innovation in residential land use through the use of planned unit developments, developer agreements, specific plans, mixed use projects and other innovative development and planning techniques.

Sheridan Community Policies

The Sheridan Community General Plan has adopted a residential land use goal to provide sound and adequate housing and positive living experience for all residents in the

plan area. However, there have not been any policies implemented to support Sheridan's land use goal.

Industrial

Placer County Policies

The Placer County adopted goal for industrial land use states that it will "designate adequate land for and promote development of industrial uses to meet the present and future needs of Placer County residents for jobs and maintaining economic vitality."

Additionally, the County shall designate specific areas suitable for industrial development and reserve such lands in a range of parcel sizes to accommodate a variety of industrial uses.

City of Lincoln Policies

The industrial land use goal for the City of Lincoln is "to designate sufficient land for existing and new industrial uses that is compatible with the existing community." Policies supporting industrial land uses in the City of Lincoln include designating land sufficient to meet future needs by promoting planned mixed use developments.

Sheridan Community Policies

Sheridan's industrial land use goal and policies encourage the development of industry where suitable lands and public services are available. Additionally, the Sheridan General Plan emphasizes that industrial land uses should not conflict with adjacent uses.

Commercial

Placer County Policies

Similar to Placer County's industrial land use goal, the adopted commercial land use goal is "to designate adequate commercial land for, and promote development of, commercial uses to meet the present and future needs of Placer County residents and visitors and maintain economic vitality."

The diversion of "through" traffic from the downtown business district will likely promote pedestrian circulation from nearby residential areas. The mixed-use planned development projects will also encourage pedestrian circulation since they include both residential and commercial land uses. Furthermore, it is likely that a majority of the commercial land uses will be located near the chosen alignment to avoid noise impacts on residential areas.

City of Lincoln Policies

The City of Lincoln has adopted a commercial land use goal "to retain and renew existing commercial land uses and designate sufficient new commercial areas to meet future city needs." To support Lincoln's land use goal, policies address issues of land use incompatibilities by implementing planned mixed use development projects.

Sheridan's Policies

Sheridan's goal for commercial land use is to "provide convenient and sufficient commercial facilities for the daily needs of residents and travelers through the area." The Sheridan General Plan implements a commercial land use policy of expanding commercial areas on routes of major traffic; however, the County would be responsible for new commercial development and the remodeling of existing commercial structures.

Resource Protection, Greenbelt, Open Space, and Recreation

Placer County Policies

Placer County's goal for resource protection, greenbelts, open space and recreation is to establish and maintain interconnected greenbelts and open spaces for the protection of native vegetation and wildlife and for the community's enjoyment. This goal is accomplished by identifying significant natural, open space and cultural resources in advance of development to allow incorporation into the project design. In addition, the County requires that development avoid areas rich in wildlife or of a fragile ecological nature.

The Placer Legacy Citizens Advisory Committee (Placer Legacy) has been formed to help develop a long-range comprehensive open space protection plan. Along with the formation of the Placer Legacy, an open space trust fund has been established to ensure the protection and maintenance of open space lands in Placer County.

City of Lincoln Policies

The City of Lincoln's goal is to designate, protect, and conserve natural resources, open space and recreation lands in the City; and provide opportunities for recreational activities to meet citizen needs.

Sheridan Policies

Sheridan's goal for resource protection, greenbelts, open space and recreation is to plan for adequate recreational facilities. However, there have not been any policies adopted to support this goal.

3.1.5 Demographic Profile and Trends

The 2000 data was not used for the preparation of the document. The document was in progress as the 2000 data was made public and not all the data was made public at the same time. In order to have comparable data, the 1990 census was used exclusively.

The Study Area is composed of census tracts 213.01, 213.02, and 214 (Figure 3-9). Information regarding the Study Area's demographic profile and trends were compiled from the 1990 United States Census (U.S. Census). The 2000 Census data was not available. Census tracts 213.01 and 213.02 include the Sheridan community as well as the outlying rural agricultural areas. Projections and estimates regarding the more urban area of Lincoln has been provided whenever available to establish trends of the Study Area.

Population

The population totals for census tracts 213.01, 213.02, and 214 were 1,724, 4,675, and 7,410, respectively, totaling 13,809 people. Current estimates show that the City of Lincoln's population increased to 8,250 people in 1999. Projections show that Lincoln is expected to experience an 81.5% increase in population between 1997 and 2005, from 8,100 to almost 15,000.

Age Distribution

The median age range for tracts 213.01 and 213.02 in 1990 was 35-39 while tract 214 median age range was 25-29. The median age range may increase for tract 214 once the Twelve Bridges development is constructed due to the 5,300 age-restricted dwelling units.

Ethnic Mix

Table 3-3 shows that White residents dominated the 1990 population (74.2%) in the Study Area with 10,251 persons. Data for the Placer County ethnic make-up show analogous trends and are projected to maintain a similar ethnic mix. Based on Community Impact Assessment, tract 214 block group 2 does have a high concentration of minorities. Census tract 214 block groups 4 and 5 are above the mean but are within the standard deviation. These areas straddle the existing alignment and are not expected to incur direct impacts from any of the proposed alignments. A potential indirect impact could include a decrease in accessible public transportation. Although minor changes to the current bus route are inevitable due to access changes, local transit authorities anticipate that the areas serviced will increase as the needs change due to development.

Figure 3-9 Census Tracts

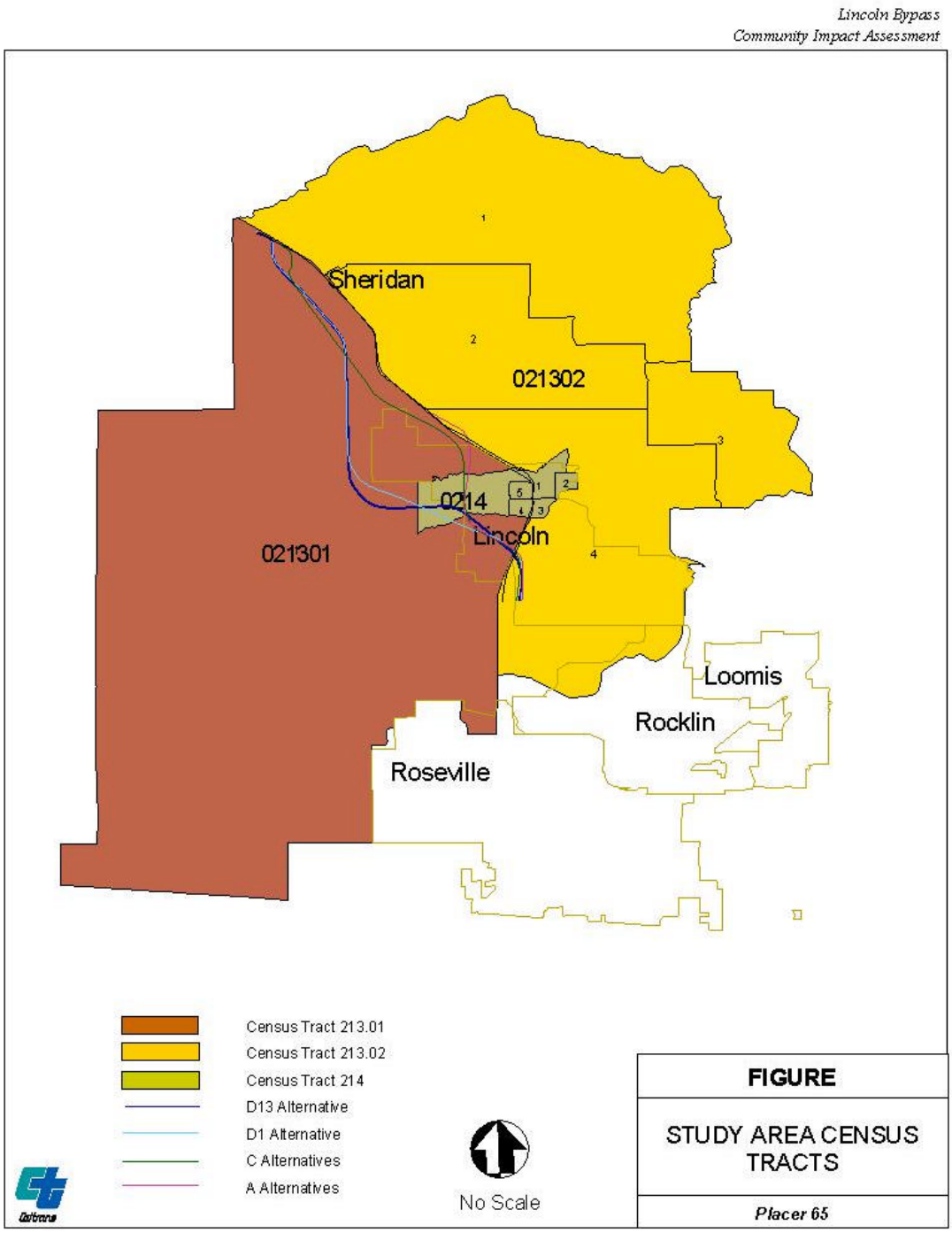


Table 3-3 Ethnic Composition of the Study Area Population for 1990

Ethnicity	Tract 213.01 (% of tract total)	Tract 213.02 (% of tract total)	Tract 214 (% of tract total)	Study Area Total	Percentage of Study Area
White	1445 (83.8%)	4,066 (87.0%)	4,740 (64.0%)	10,251	74.2%
Black	16 (0.9%)	13 (0.3%)	12 (0.2%)	41	0.3%
American Indian, Eskimo, Aleutian, Asian, Pacific Islanders, and other	118 (6.9%)	254 (5.4%)	842 (11.3%)	1,214	8.8%
Hispanic	145 (8.4%)	342 (7.3%)	1,816 (24.5%)	2,303	16.7%
Total	1,724	4,675	7,410	13,809	100%

3.1.6 Household Size and Composition

Table 3-4 shows the number of households, number of families, and the persons per family found in the Study Area in 1990. Tract 213.02 had the highest percentage of families (83.3%) living together, followed by tract 213.01 (81.2%), and tract 214 (76.4%). For the Study Area, 79.3% of the households were home to families. The family size ranged from 3.17 to 3.25 persons per family in the area. Similar to the age distribution of the Study Area, the average family size may decrease due to an influx of older persons projected to move into the age-restricted homes currently planned.

Table 3-4 Household Population in Study Area (1990)

	Tract 213.01	Tract 213.02	Tract 214	Total
Households	590	1,548	2,565	4,703
Families	479	1,290	1,960	3,729
Persons/Family	3.17	3.23	3.25	-

3.1.7 Personal Income

Table 3-5 outlines income levels for the Study Area. The mean percentage of persons living below the poverty rate in 1989 was 7.1% with a standard deviation of 3.1. Therefore, areas that displayed percentages greater than 10.2% may be considered high concentration areas of low-income people. Census tract 214 block group 6 has 11.2% of its population living below the poverty rate. However, since 1989, this area has experienced a large concentration of new homes that would potentially attract people with higher incomes and would change the income profile of the block group. Furthermore, the region has benefited from a surge of hi-tech industries that has contributed to lowering the unemployment rate and potentially decreasing the amount of people living below the poverty rate. Nevertheless, impacts to census tract 214 block group 6 should be closely analyzed to determine if low-income people are being disproportionately impacted by the proposed alternatives.

Table 3-5 Income and Poverty Data for Study Area (1989)

Census Tract	213.01			213.02			214		
Block Group	1	2	4	1	2	3	4	5	6
Median Household Income	40,862	27,083	44,769	31,691	27,656	33,889	34,706	29,866	28,194
Median Family Income	41,336	31,667	46,339	35,417	29,688	35,625	41,711	35,417	30,294
Per Capita Income	17,130	10,071	18,502	12,727	9,569	11,132	13,734	12,842	11,072
Persons Below Poverty Status*	98	63	25	53	67	34	16	81	379
Percentage of Persons Below Poverty Status	5.7%	8.7%	2.3%	4.8%	8.8%	8.4%	3.5%	10.2%	11.2%

**Poverty guidelines for 1989 are $12,100 for a family of four.*

Housing Characteristics

Housing Stock

In 1996, Lincoln had a total of 2,998 housing units composed of 78% single family residents, 19% multiple unit complexes, and 3% mobile homes (Table 3-6). The housing vacancy rate was 3.40% which was the second lowest in Placer County. Neighboring cities such as Rocklin and Roseville experienced higher vacancy rates of 6.57% and 6.65% respectively. The high 16.77% vacancy rate for Placer County is likely due to the popularity of vacation homes in the resort areas of the county.

Table 3-6 Placer County Housing Estimates (1996)

Area	Total Housing	Single Family	Multiple Unit	Mobile Home	Occupied	Percent Vacant	Persons/ Household
Placer County	92,649	73,392	14,027	5230	77,114	16.77	2.645
Auburn	5,480	3,651	1,822	7	5,258	4.05	2.142
Colfax	684	426	221	37	602	11.99	2.412
Lincoln	2,998	2,334	582	82	2,896	3.40	2.704
Loomis	2,188	1,954	120	114	2,116	3.29	2.820
Rocklin	10,463	8,179	1,827	457	9,776	6.57	2.758
Roseville	23,877	17,549	5,849	479	22,289	6.65	2.652
Unincorporated	46,959	39,299	3,606	4,054	34,177	27.22	2.673

Source: California Department of Finance, Demographic Research Unit

The Draft Relocation Impact Report (DRIR) indicates that the available single family residences, multiple family units, and mobile homes for rent and for sale was estimated at 3.4% for each category. Although the numbers of multiple-family dwellings are increasing to meet the increased demand for rental units, the overall ratio of multi-family to single family units remains low.

3.1.8 Economic Conditions

Employment

Table 3-7 shows that in 1996 the leading employment sectors in Placer County were services, trade, government, manufacturing and construction. Although the services and trade sectors expect to see a slight decline by 2000, they will still remain the leading employment industries. Manufacturing and government are projected to experience the largest increase of jobs between 1996 and 2000 in addition to being two of the leading employers. Construction expects to decline, however, transportation/public utilities and finance/insurance/real estate are projected to see an increase of jobs available.

Table 3-7 Placer County Employment & Projected Percent Change (in $1000's)

Industry	1996	2000 (Projected)	Percent Change
Mining	0.1	0.2	100.0
Construction	6.0	5.5	-8.3
Manufacturing	9.6	13.3	38.5
Transportation and Public Utilities	3.4	4.2	23.5
Trade	21.9	21.2	-3.2
Finance, Insurance, and Real Estate	4.0	4.5	12.5
Services	22.2	22.0	-0.9
Government	13.4	15.6	16.4
Total Industries	80.8	86.4	6.9

Source: California Employment Development Department, Labor Market Information Division, December 1997.

Employers

Table 3-8 shows that, in 1997, the largest employers in Placer County were located in Roseville, including Hewlett-Packard, PRIDE Industries and NEC Electronics, Inc. As the county seat, Auburn has a high concentration of government workers while Rocklin's prominent employer is Sierra Joint Community College. Lincoln's leading employer, Sierra Pacific Industries, ranks in the lower spectrum of major employers in Placer County.

Table 3-8 Largest Employers in Placer County (1997)

Rank by Number of Employees		Name of Company	Number of Employees
Auburn	2	Placer County	2,195
	8	Sutter Auburn Faith Hospital	740
	12	Coherent Auburn Group	480
	18	Pacific Gas and Electric Company	215
Lincoln	15	Sierra Pacific Industries	300
	17	Gladding McBean	224
	20	American Poly-Therm	140

Rank by Number of Employees		Name of Company	Number of Employees
Rocklin	5	Sierra Joint Community College	1,377
	13	Formica Corporation	429
	16	Herman Miller Corporation	248
	19	Reynolds Metal Company	170
Roseville	1	Hewlett-Packard	4,900
	3	PRIDE Industries	2,100
	4	NEC Electronics, Incorporated	2,000
	6	Sutter Roseville Hospital	1,375
	7	City of Roseville	751
	9	Kaiser Permanente Medical Center	709
	10	Roseville Telephone Company	545
	11	Roseville City School District (Elem.)	534
	14	Roseville Joint High School District	302
Roseville/Rocklin	21	Doorcraft (Jeld-Wen)	100

Source: Sacramento Region Major Manufacturers and Processors Guide, SACTO, July 1997.

Labor Force

As shown in Table 3-9, the 1998 civilian labor force in Placer County was 110,600 with a 3.8% unemployment rate. Unemployment in Placer County has been steadily dropping since its peak of 8.0% in 1992. Of the communities in the vicinity of the Study Area, Lincoln's unemployment rate was the highest at 4.5% followed by Roseville at 4.0%.

Table 3-9 Placer County Civilian Labor Force and Employment Rates (8/98)

Area Name	Labor Force	Employment	Unemployment	Unemployment Rate
Placer County	110,600	106,400	4,200	3.8%
Auburn	6,370	6,160	210	3.3%
Lincoln	4,200	4,010	190	4.5%
Loomis	3,540	3,410	130	3.7%
Rocklin	12,880	12,420	460	3.6%
Roseville	29,090	27,920	1,170	4.0%

Source: California Employment Development Department, Labor Market Information Division

Personal Income

Table 3-10 outlines income levels for tracts 213.01, 213.02, and 214. In 1989, 6.6% of the population in the Study Area lived below the poverty level. Poverty guidelines for 1989 are $12,100 for a family of four. Tract 214 had the highest percentage (8.5%) of people living under the poverty guidelines followed by tract 213.01 that had 5.7% people while tract 213.02 had 3.9%.

Table 3-10 Income and Poverty Data for 1989

	Tract 213.01	Tract 213.02	Tract 214	Total
Median Household Income	$40,862	$42,620	$29,648	-
Median Family Income	$41,336	$45,477	$33,892	-
Per Capita Income	$17,130	$14,705	$11,716	-
Persons Below Poverty Status*	98	179	630	907
Households with Public Assistance Income	51	101	219	371

*Poverty guidelines for 1989 are $12,100 for a family of four.

Fiscal Conditions

Placer County collected $24.0 million in property taxes for the 1998-99 fiscal year in comparison to the $35.1 million collected in the 1995-96 fiscal year. Property taxes in the City of Lincoln increased between 1980 ($218,353) and 1990 ($503,320); however, since 1992 Lincoln property taxes have experienced a slow increase. Because of the rise in new residential units in the Study Area, property taxes are expected to continue to increase.

Based on the Study Area's sales tax figures, business activity has decreased over the past few years. Many of the companies now located in Lincoln are of a manufacturing and service nature. There has been a steady decline in sales tax revenue due to the fact that many shopping centers have emerged in Rocklin and Roseville. Sales oriented business in Lincoln are expected to rise by 15% to 20% over the next five to ten years which would potentially increase the sales tax revenue.

3.1.9 Jobs/Housing Balance

Regional Jobs/Housing Conditions

Although employment in the Study Area is expected to increase by 10% by 2015 from 1995 figures, the population between 1995 and 2015 is expected to increase by 12%. The expected increase in population is likely due to the 16,929 dwelling units proposed for the Study Area that are primarily concentrated in and around the City of Lincoln. However, the largest planned residential development, Twelve Bridges, will consist of 5,300 age-restricted dwelling units that will potentially increase the percentage of the retired population. However this is not likely impact regional jobs or commuting traffic. Although the planned developments have included approximately 86.4 ha (213.4 ac) of commercial land use and there is still an abundance of vacant industrial land available, it is likely that a large portion of the population will continue to commute to the outlying areas.

3.1.10 Existing Travel Patterns

Currently, SR 65 is the main street serving the community of Lincoln. Most of the businesses in Lincoln are located either on or just off SR 65. City Hall is one block down from SR 65 and the Library and the Pavilions; a community hall, are both generally accessed via SR 65 or SR 193. Outside the business core of the city of Lincoln are residential areas. Figure 1-4, in Chapter 1, shows the circulation system as found in the Lincoln General Plan.

SR 193 provides a link with the community of east Rocklin and Sierra College, a community college.

Bicycles & Pedestrians

Bicycle routes are discussed in Chapter 1, Section 3.6. SR 65 is not included in the adopted bicycle plan for Lincoln; however, the portion of SR 65 from Roseville to SR 193 is included in the Placer County Master Bikeways Plan. This would remain the same after the Bypass was constructed.

SR 65 is a busy road, and pedestrians generally only use this road when their car breaks down. Through the town, however, pedestrian traffic is common.

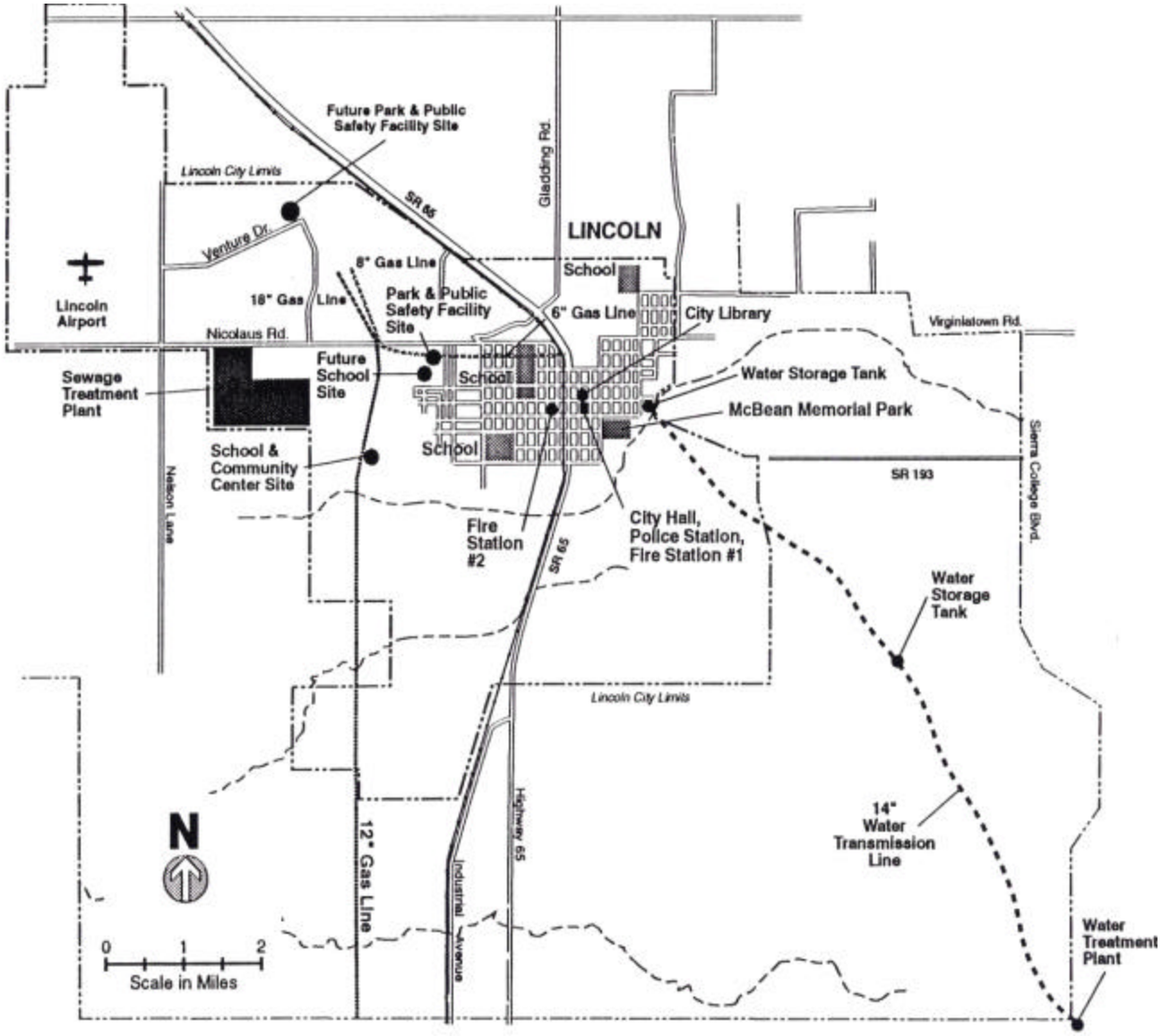
3.1.11 Community Facilities and Services

Figure 3-10 shows the community facilities such as schools, libraries and fire departments. The town of Sheridan has no facilities such as a Fire Department or library, instead relying on Lincoln's facilities and services.

Schools

Carlin C. Coppin Elementary, Valley View Elementary, Creekside Oaks Charter Elementary and Heritage Elementary Schools are located in Lincoln and Sheridan Elementary School is located in Sheridan. The Glen Edwards Middle School in located in Lincoln as well as three high schools, Lincoln High School, Lincoln High North, and Phoenix High School. The Horizon Instruction Systems independent correspondence study program serves K-12 students that generally do not live in Placer County although it is located in Lincoln.

Figure 3-10 Community Services & Public Facilities



Police and Fire Protection

The area under Placer County's jurisdiction is patrolled by the Placer County Sheriff's Department. The Sheriff's Department is responsible for general law enforcement activities throughout the County. Similarly, the City of Lincoln Police Department has jurisdiction within the City limits and provides general law enforcement.

The South Placer Fire Protection District provides services to areas under the County's jurisdiction. The City of Lincoln's volunteer Fire Department is housed with the City of Lincoln Police Department.

3.2 GEOGRAPHY AND TOPOGRAPHY

3.2.1 Topography

The SR 65 project is located near the eastern edge of the lower Sacramento Valley. The Sacramento Valley is a broad lowland, approximately 80 km (50 mi) wide in the project area. The Coast Range on the west and the Sierra Nevada Range to the east border the valley. The project area is characterized by gently rolling hills, ranging in elevation from 24 to 46 m (80-150 ft) above sea level, sloping to the north and west toward the Bear and Feather Rivers. Prominent topographic features within the project area include the Auburn Ravine, Markham Ravine and Ingram Slough.

3.2.2 Climate

The climate in Lincoln is characterized by hot, dry summers and cool, wet winters, which is typical of the California Central Valley. Average temperatures range from about 27° C (80° F) in summer to 7° C (45° F) in winter, with temperature extremes of 47° C (110° F) in summer and -7° C (20° F) in winter. Annual rainfall averages about .56 m (22 in) per year, with most of it falling between October and March (Lincoln General Plan, 1988).

3.2.3 Soils

The soils within the Study Area are predominately of the Fiddyment-Trigo-Rocklin association. The soils in this association occur on gently sloping terraces and strongly sloping sideslopes.

To the east they adjoin the bedrock areas of the lower foothills. These soils are mostly well drained and developed in granitic alluvium and outwash from the Sierra Nevada Mountains. They are mostly shallow, meeting with claypans or hardpans and have medium runoff and moderate erosion hazard (SACOG 1988b). Soils in this area include Cometa-Fiddyment Complex, Cometa-Ramona Sandy Loams, Kilaga Loam, San

Joaquin Sandy Loam, and Xerofluvents (EIP Associates 1992b). The erosion hazard of the soils varies from slight erosion hazard in the floodway fringes to high erosion hazard in the recent alluvium deposits adjacent to stream channels (Caltrans 1999).

The Placer County Natural Resources Conservation District completed a survey of productive soils for Placer County, and identified areas within the Lincoln planning area having prime soils. Major prime soil areas exist adjacent to the Auburn Ravine, north of the Gladding McBean plant, and in the southwestern portion of the planning area. All alternatives will pass through some of the prime soils with Alternatives D1 and D13 passing through a greater amount of the prime soils (Caltrans 1999).

3.2.4 Geology

The project site is located in the Sacramento Valley portion of the Great Valley Geomorphic Province on California. This portion of the valley is underlain by unconsolidated older alluvium of Pleistocene and Holocene age. Pliocene to Pleistocene deposits of continentally derived sand, silt, clays and poorly sorted gravel underlie older alluvial deposits. Marine sedimentary rocks yielding saline waters may underlie continental derived sedimentary rocks at depth. The geologic basement of the region is composed of meta-sedimentary and meta-volcanic rocks. Structurally, the consolidated sediments have been folded into a west-dipping homocline formed by the westward tilting of the Sierra Nevada structural block (Ross and Gannaway, 1999).

3.2.5 Seismic

Faults in the general region with a moderate to high potential for surface rupture include the San Andreas Fault, approximately 162 km (100 mi) to the west, the Dunnigan Hills Fault located approximately 57 km (35 mi) to the northwest and the Foothills Fault Zone located approximately 16 km (10 mi) to the east. The relevant seismic data is presented in Table 3-11.

Table 3-11 Faults in Area

Fault	Estimated distance from project	Maximum credible earthquake magnitude on Richter Scale
Foothills Fault Zone	16 km East (10 mi)	6.5
San Andreas Fault	162 km West (100 mi)	8.0
Dunnigan Hills Fault	57 km Northwest (35 mi)	6.5

There is no evidence to indicate that the proposed project is located on identified active faults. Therefore, the potential risk of damage due to fault rupture is considered to be low.

Liquefaction

Soil liquefaction is a process by which water-saturated sediment temporarily loses strength and acts as a fluid, like when you wiggle your toes in the wet sand near the water at the beach. This effect can be caused by earthquake. Soils most susceptible to liquefaction are loose, clean and uniformly graded, fine grained sands. Silty sands also liquefy during strong shaking. As noted earlier, the underlying soil is a clay material. Therefore, the potential for liquefaction is considered to be low.

3.3 AIR QUALITY

Weather and topography both influence air quality. This region is subject to temperature inversions, trapping pollutants at ground level. Surface inversions 0-152 m (0-500 ft) are most frequent during the winter, while subsidence inversions 305-610 m (1,000-2,000 ft) are more frequent during the summer. Generally, the lower the inversion base height and the greater the rate of temperature increase from the base to the top, the more pronounced will be the effect of the inversion on inhibiting dispersion of pollutants.

This project is located in the Sacramento Valley Air Basin, which is under the jurisdiction of the Placer County Air Pollution Control District (PCAPCD) at the local level and the California Air Resources Board (CARB) at the State level. The U.S. Environmental Protection Agency (EPA) is responsible at the Federal level for the implementation of the Federal Clean Air Act of 1970 and amendments in 1977 and 1990. This act requires the EPA to establish National Ambient Air Quality Standards (NAAQS) in order to protect the public health. These standards as well as State standards are shown in Table 3-12. The Placer County portion of the Sacramento Air Basin is classified as follows: ozone is listed as serious non-attainment for Federal and State level, sulfur dioxide, and nitrogen dioxide are in attainment with both the Federal and State standards; and PM_{10} is listed as in attainment for the Federal standard and non-attainment for the State standards.

Ozone

Ozone is made up of reactive organic gases (ROG) and oxides of nitrogen (NOx) which react in the atmosphere when exposed to 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. New air quality standards were announced by the EPA in July 1997. The new ozone standard reduces allowable

concentrations from 0.12 parts per million (PPM) averaged over one hour to a standard of 0.08 PPM averaged over an eight hour period.

Table 3-12 Federal and State Ambient Air Quality Standards

Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards [1]		Federal Standards [2]		
		Concentration [3]	Method [4]	Primary [3,5]	Secondary [3,6]	Method [7]
Ozone (O_3)	1 Hour	0.09 ppm (180 µg/m³)	Ultraviolet Photometry	0.12 ppm (235 µg/m³)[8]	Same as Primary Standard	Ethylene Chemiluminescence
	8 Hour	—		0.08 ppm (157 µg/m³)		
Respirable Particulate Matter (PM_{10})	Annual Geometric Mean	30 µg/m³	Size Selective Inlet Sampler ARB Method P (8/22/85)	—	Same as Primary Standard	Inertial Separation and Gravimetic Analysis
	24 Hour	50 µg/m³		150 µg/m³		
	Annual Arithmetic Mean	—		50 µg/m³		
Fine Particulate Matter ($PM_{2.5}$)	24 Hour	No Separate State Standard		65 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetic Analysis
	Annual Arithmetic Mean			15 µg/m³		
Carbon Monoxide (CO)	8 Hour	9.0 ppm (10 mg/m³)	Non-dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m³)	None	Non-dispersive Infrared Photometry (NDIR)
	1 Hour	20 ppm (23 mg/m³)		35 ppm (40 mg/m³)		
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m³)		—		
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	—	Gas Phase Chemiluminescence	0.053 ppm (100 µg/m³)	Same as Primary Standard	Gas Phase Chemiluminescence
	1 Hour	0.25 ppm (470 µg/m³)		—		
Lead	30 days average	1.5 µg/m³	AIHL Method 54 (12/74) Atomic Absorption	—	—	High Volume Sampler and Atomic Absorption
	Calendar Quarter	—		1.5 µg/m³	Same as Primary Standard	
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	—	Fluorescence	0.030 ppm (80 µg/m³)	—	Pararosoaniline
	24 Hour	0.04 ppm (105 µg/m³)		0.14 ppm (365 µg/m³)	—	
	3 Hour	—		—	0.5 ppm (1300 µg/m³)	
	1 Hour	0.25 ppm (655 µg/m³)		—	—	
Visibility Reducing Particles	8 Hour (10 am to 6 pm, PST)	In sufficient amount to produce an extinction coefficient of 0.23 per kilometer—visibility of ten miles or more (0.07—30 miles or more for Lake Tahoe) due to particles when the relative humidity is less than 70 percent. Method: ARB Method V (8/18/89).		No Federal Standards		
Sulfates	24 Hour	25 µg/m³	Turbidimetric Barium Sulfate-AIHL Method 61 (2/76)			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m³)	Cadmium Hydroxide STRactan			

See footnotes on next page...

California Air Resources Board (1/25/99)

1. California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, suspended particulate matter—PM_{10}, and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

   In addition, Section 70200.5 lists vinyl chloride (chloroethene) under "Ambient Air Quality Standards for Hazardous Substances." In 1978, the California Air Resources Board (ARB) adopted the vinyl chloride standard of 0.010 ppm (26 $\mu g/m^3$) averaged over a 24-hour period and measured by gas chromatography. The standard notes that vinyl chloride is a "known human and animal carcinogen" and that "low-level effects are undefined, but are potentially serious. Level is not a threshold level and does not necessarily protect against harm. Level specified is lowest level at which violation can be reliably detected by the method specified. Ambient concentrations at or above the standard constitute an endangerment to the health of the public."

   In 1990, the ARB identified vinyl chloride as a Toxic Air Contaminant and determined that there was not sufficient available scientific evidence to support the identification of a threshold exposure level. This action allows the implementation of health-protective control measures at levels below the 0.010 ppm ambient concentration specified in the 1978 standard.

2. National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when 99 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. For $PM_{2.5}$, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact U.S. EPA for further clarification and current federal policies.

3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 mm of mercury. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 mm of mercury (1,013.2 millibar); ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

4. Any equivalent procedure which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.

5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

7. Reference method as described by the EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the EPA.

8. New federal 8-hour ozone and fine particulate matter standards were promulgated by U.S. EPA on July 18, 1997. The federal 1-hour ozone standard continues to apply in areas that violated the standard. Contact U.S. EPA for further clarification and current federal policies.

California Air Resources Board (1/25/99)

Carbon Monoxide

Carbon monoxide (CO) is a public health concern because it combines readily with hemoglobin thus reducing the amount of oxygen transported in the blood stream. Motor vehicles are the dominant source of CO emissions and produce localized pollution problems. The Sacramento region is currently in attainment for CO.

Particulate Matter

Particulate matter of 10 and 25 microns or less (PM_{10} and $PM_{2.5}$ also known as PM fine) is a health concern because few particles larger than 10 microns actually reach the lungs when inhaled. Those smaller particles reflect a mix of rural and urban sources, including agricultural activities, industrial emissions and dust suspended by automobiles and trucks.

The EPA has set a new standard for $PM_{2.5}$, the first time the Federal government has set a standard for PM fine, considered to be more damaging to human health than PM_{10}. Table 3-12 reflects the new standards; however, areas have not been designated as non-attainment at this time.

3.4 NOISE

3.4.1 Federal and State Regulations, Standards, & Policies

Federal and state regulations, standards and policies relating to traffic noise are discussed in detail in the Department's Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects (Protocol). Transportation projects affected by the Protocol are referred to as Type I projects. A Type I project is defined in 23 CFR 772 as highway construction on a new location, or the physical alteration of an existing highway that significantly changes either the horizontal or vertical alignment or increases the number of through traffic lanes and is either fully or partially federally funded. FHWA has clarified its interpretation of Type I projects by stating that such a project is one that has the potential to increase noise levels at adjacent receivers. The Department's extends this definition to include state-funded highway projects. The proposed project evaluated in this report is considered to be a Type I project because it involves the construction of a highway on a new location.

National Environmental Policy Act

NEPA is a federal law that establishes environmental policy for the nation, provides an interdisciplinary framework for federal agencies to prevent environmental damage and contains "action-forcing" procedures to ensure that federal agency decision-makers take

environmental factors into account. Under NEPA, impacts and measures to mitigate adverse impacts must be identified; this includes the identification of impacts for which no mitigation or only partial mitigation is available. The FHWA regulations discussed below constitute the federal noise standard. Projects complying with this standard are also in compliance with the requirements stemming from NEPA.

Federal Highway Administration Regulations

Title 23, Part 772 of the Code of Federal Regulations (23 CFR 772) provides procedures for conducting highway-project noise studies and implementing noise abatement measures to help protect the public health and welfare, supply noise abatement criteria, and establish requirements for information to be given to local officials for use in planning and designing highways. Under this regulation, noise abatement must be considered for a Type I project if the project is predicted to result in a traffic noise impact. A traffic noise impact is considered to occur when the project results in a *substantial noise increase* or when the predicted noise levels *approach* or *exceed* the noise abatement criteria (NAC) specified in the regulation. 23 CFR 772 does not specifically define what constitutes a "substantial increase" or the term "approach" and leaves interpretation of these terms to the individual states.

Noise abatement measures that are *reasonable* and *feasible* and that are likely to be incorporated into the project, as well as noise impacts for which no apparent solution is available, must be identified and incorporated into the project's plans and specifications. Table 3-13 summarizes the FHWA noise abatement criteria.

Table 3-13 FHWA Noise Abatement Criteria (NAC)

Activity Category	NAC, Hourly A-weighted Noise Level, dBA Leq(h)	Description of Activities
A	57 Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 Exterior	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 Exterior	Developed lands, properties, or activities not included in Categories A or B above
D	--	Undeveloped lands.
E	72 Interior	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

California Environmental Quality Act

CEQA is the foundation of environmental law and policy in California. CEQA's main objectives are to disclose to decision makers and the public the significant

environmental effects of proposed activities and the ways to avoid or reduce those effects by requiring implementation of feasible alternatives or mitigation measures. Under CEQA, a substantial noise increase may result in a significant adverse environmental effect and, if so, must be mitigated or identified as a noise impact for which it is likely that only partial abatement measures (or none) are available. Specific economic, social, environmental, legal and technological conditions may make additional noise attenuation measures infeasible.

California Streets and Highways Code, Section 216

Section 216 of the California Streets and Highways code relates to the noise level produced by the traffic on, or by the construction of, a state freeway measured in the classrooms, libraries, multipurpose rooms and spaces used for a public or private elementary or secondary school. The code states that if the interior noise level produced in any of these locations by freeway traffic, or the construction of a freeway, exceeds 52 dBA Leq, the department shall undertake a noise abatement program to reduce the freeway traffic noise level to 52 dBA Leq or less by measures such as installing acoustical materials, eliminating windows, installing air conditioning and constructing sound baffle structures.

Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects

The Protocol (California Department of Transportation 1998a) specifies the policies, procedures, and practices for use by agencies that sponsor new construction or reconstruction projects. Noise abatement criteria specified in this document are the same as those specified in 23 CFR 772. The document defines a noise increase as substantial when the predicted noise levels with project implementation exceed existing noise levels by 12 dBA Leq(h). The protocol also states that a sound level is considered to approach an NAC level when the sound level is within 1 dB of the NAC identified in 23 CFR 772. For example, a sound level of 66 dBA is considered to approach the NAC of 67 dBA, whereas 65 dBA is not.

3.4.2 FIELD MEASUREMENTS

Ambient noise measurements were conducted to provide an understanding of the existing noise levels at the sensitive receptor locations. These noise levels will be used as a reference noise level to assess the noise impact to the residential area adjacent to the project site. Thirty-one sites were selected for monitoring to represent existing sensitive receptor locations. The measurement sites were selected when one or many residences were either within or close to the project boundaries. Figure 3-11 illustrates the 31

measurement locations and Table 3-15 summarizes the receptors. Ambient noise levels are listed in Table 3-14.

Table 3-14 Noise Level Measurements[1] on October 5th and 6th 1999

Noise Level Location	*Existing Noise (Monitored) Leq dBA*	*A5C1*	*AAC2*	*D1*	*D13*
NR-1	49.1	60.6	60.5	56.8	56.8
NR-2	45.6	*60.6*	*62.6*	57.3	57.3
NR-3	54	55.2	55.2	52.9	55.0
NR-4	45.6	53.4	55.5	*60.5*	*60.5*
NR-5	51.3	57.8	*64.6*	63.1	63.1
NR-6	49.6	50.3	50.7	56.6	56.6
NR-7	38.1	*58.2*	*51.2*	*55.2*	*57.6*
NR-8	48.1	62.0	59.1	N/A	N/A
NR-9	36.4	*53.0*	*52.4*	N/A	N/A
NR-10a	54.4	64.3	63.6	N/A	N/A
NR-10b	52.7	63.8	63.2	N/A	N/A
NR-11	36.6	N/A	N/A	*54.7*	*51.6*
NR-12	46	N/A	N/A	*60.5*	56.2
NR-13	43.3	N/A	N/A	***68.2***	*57.9*
NR-14	43.4	N/A	53.0	***68.6***	*60.1*
NR-15	45.6	*62.4*	*60.5*	N/A	53.1
NR-16a	47.7	***65.9***	*60.7*	N/A	N/A
NR-16b	47.9	***66.2***	*60.1*	N/A	N/A
NR-17[5] (8)	48.1	59.6	*61.3*	58.6	58.1
NR-18[5] (10a)	54.4	***70.4***	***70.0***	***65.7***	***69.5***
NR-19[5] (10a)	54.4	***66.6***	***65.9***	***73.7***	***68.0***
NR-20[5] (14)	43.4	***70.4***	***70.3***	*59.1*	*63.2*
NR-21[5] (15)	45.6	***73.9***	***69.6***	57.0	55.6
NR-22[5] (16b)	47.9	***72.5***	***66.4***	N/A	N/A
NR-23[5] (10b)	52.7	***72.2***	*65.2*	N/A	N/A
NR-24[5] (8)	48.1	*65.0*	*63.0*	N/A	N/A
NR-25[5] (6)	49.6	*63.4*	*62.2*	N/A	N/A
NR-26[5] (14)	43.4	N/A	N/A	N/A	N/A
NR-27[5] (14)	43.4	N/A	N/A	*60.2*	***73.6***
NR-28[5] (14)	43.4	N/A	N/A	*59.7*	***65.9***
NR-29[5] (14)	43.4	***71.0***	***69.6***	***67.9***	***65.8***
NR-30[5] (14)	43.4	***70.7***	***68.7***	***69.1***	***67.8***
NR-31[5] (15)	45.6	***68.6***	***64.6***	N/A	N/A

[1] The L_{eq} represents the equivalent continuous sound level and is the numeric value of a constant level that, over the given period of time, transmits the same amount of acoustic energy as the actual time varying sound level. The L_{min} and L_{max} represent the minimum and maximum noise levels obtained over a period of one second.

The ambient noise was partly due to either remote or sparse traffic on the existing SR 65, Dowd Road, Riosa Road, Wise Road, Nicolaus Road, Moore Road and Lakeside Drive. Other sources of noise were birds, barking dogs, hens, water flow, wind in branches, remote aircraft and minor carpentry work. Noise levels remain below the allowable noise exposure required by Placer County.

The measured L_{eq} shown in Table 3-14 is documented as existing ambient noise level. The modeled noise is the noise contribution of the new Lincoln bypass traffic to each receptor location. The modeled future traffic noise was then compared to the measured existing ambient noise. Noise impacts are addressed in Chapter 4, Environmental Consequences.

Table 3-15 Summary of Receptors

Noise Level Location	Location Description	Type of Development	No. of Residences	Status of Development
NR-1	6355 North Route 65	Residential	1	Existing
NR-2	100m north of Riosa Road	Residential	9	Existing
NR-3	100 feet from Existing Route 65	Residential	1	Existing
NR-4	4710 North Dowd Road	Residential	1	Existing
NR-5	4221 North Dowd Road	Residential	2	Existing
NR-6	700 feet from Existing Route 65	Residential	1	Existing
NR-7	2780 Dowd Road	Residential	1	Existing
NR-8	2000 feet from Existing SR 65, 1000 feet from C1 and C2 Alignments	Residential	4	Existing
NR-9	200m south of Wise Road	Residential	1	Existing
NR-10a	Along Wise Road	Residential	2	Existing
NR-10b	Along Wise Road	Residential	4	Existing
NR-11	Along Airport Road	Residential	6	Existing
NR-12	Along Nicolaus Road	Residential	1	Existing
NR-13	On Rockwell Lane	Residential	28	Existing
NR-14	Along Moore Road	Residential	1	Existing
NR-15	400 feet east of C1 and C2 Alignments	Residential	1	Existing
NR-16a	North end of El Camino Verde Dr.	Residential	17	Existing
NR-16b	1245 Cobblestone Dr	Residential	12	Existing
NR-17	2000 feet from Route 65	Residential	1	Existing
NR-18	Lincoln Crossing	Residential	60	Planned, Programmed, Approved
NR-19	Lincoln Crossing	Residential, Park	54	Planned, Programmed, Approved
NR-20	Lincoln Crossing	Residential, School, Park	20	Planned, Programmed, Approved
NR-21	50 feet from Existing SR 65	Residential	54	Existing
NR-22	50 feet from Existing SR 65, south of Nicolaus Rd.	Residential	6	Under Construction
NR-23	50 feet south of Nicolaus Road	Residential	28	Under Construction
NR-24	50 feet from C1 Alignment	Residential	1	Existing
NR-25	50 feet from Existing Route 65	Residential	1	Existing

Noise Level Location	Location Description	Type of Development	No. of Residences	Status of Development
NR-26	NW corner of Route 65/Westwood Blvd	Commercial	0	Planned, Programmed, Approved
NR-27	100 feet North of D13 Alignment	Residential	1	Existing
NR-28	100 feet North of D13 Alignment	Residential	1	Existing
NR-29	3-D Development	Residential	23	Planned, Progrm, Approved (Fall 2001)
NR-30	3-D Development	Residential	40	Planned, Progrm, Approved (Fall 2001)
NR-31	Lincoln West Development	Residential	25	Planned, Programmed, Approved

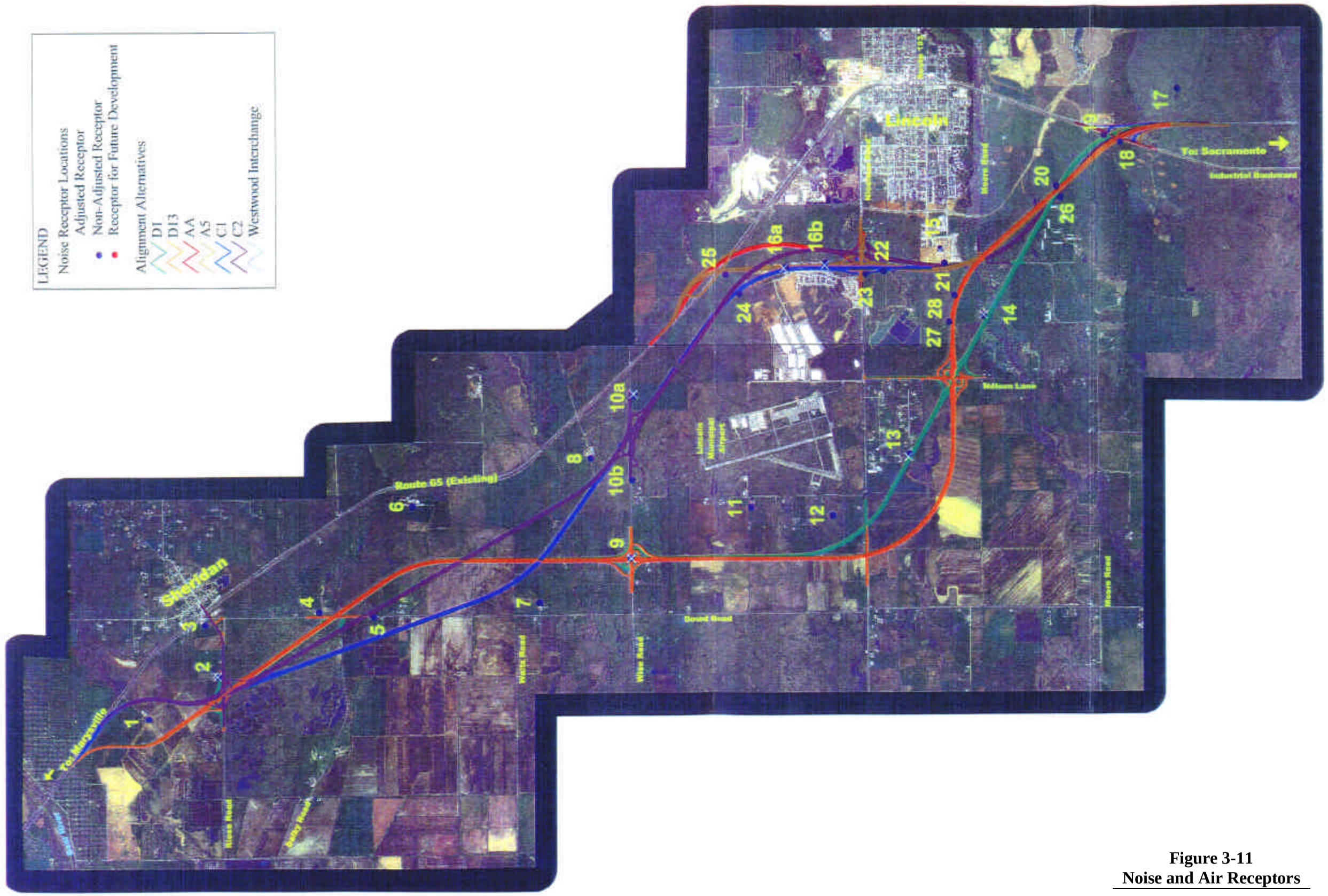


Figure 3-11
Noise and Air Receptors

3.5 WATER QUALITY

The Water Quality Assessment examines the receiving waters associated with each of the alternatives for the project and the potential impacts linked to the construction and maintenance of each alternative. The location of these waters is shown in Figure 3-12. Following is a summary of the Water Quality Assessment. The entire document may be reviewed at the Department's District 3 office, 2800 Gateway Oaks Dr., Sacramento, CA.

The City of Lincoln is located between Auburn Ravine and Markham Ravine, both tributaries to the Sacramento River watershed. The receiving waters within the proposed project area include: Auburn Ravine, Markham Ravine, Coon Creek, an unnamed tributary to Orchard Creek (all tributaries to the Sacramento River), Ingram Slough (a tributary to Orchard Creek), Yankee Sough (a tributary to the Bear River, which flows into the Sacramento River), and an aqueduct that supplies water for agricultural use. Alternatives AAC2 and A5C1 will cross over Orchard Creek, Ingram Slough, Auburn Ravine and Markham Ravine. Alternatives D1 and D13 also cross an aqueduct operated by the South Sutter Water District. The aqueduct supplies water for agricultural use.

3.5.1 Surface Water Resources

Vernal Pools

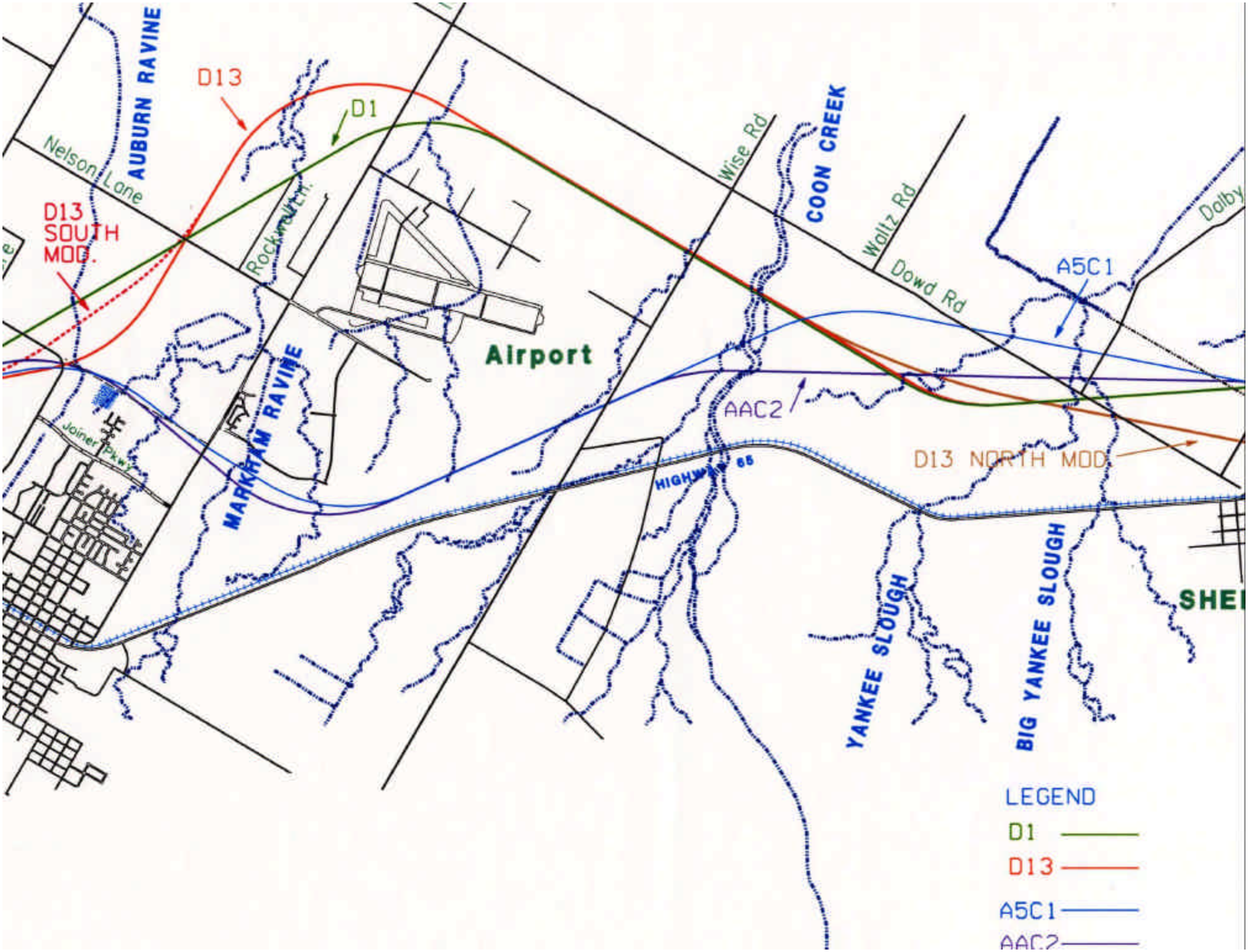
Several areas within the project are relatively flat and water collects in vernal pools during the wet part of the year. The pools dry during the spring and summer months unless agricultural watering is sufficient to keep the pools wet. During very wet periods the pools may overflow and drain into the surrounding waterways. All alternatives will effect vernal pools as discussed in the Natural Resources section under "Wetlands."

Streams, Creeks and Sloughs

Orchard Creek originates just east of the project area, flows westerly across the project area and into Auburn Ravine. Caperton Canal brings some irrigation water to Orchard Creek keeping the flows during a portion of the year higher than the natural flow of the creek.

Ingram Slough, which is channeled in the project area, is one of the tributaries to Orchard Creek. The proposed Lincoln Crossing development will divide Ingram Slough into two waterways at the west side of SR 65 to a point west of the proposed bypass. A retention pond is also planned along the northern portion of the slough just west of the proposed bypass (EIP Associates 1992a).

Auburn Ravine originates in the foothills east of the project area and flows westerly across the project area. It drains into the Cross Canal and then into the


AUBURN RAVINE
D13
D1
Nelson Lane
D13
SOUTH
MOD.
Rockmoor Dr.
Wise Rd
COON CREEK
Waltz Rd
Dowd Rd
Dalby
A5C1
Airport
MARKHAM RAVINE
AAC2
Joiner Pkwy
D13 NORTH MOD.
HIGHWAY 65
YANKEE SLOUGH
BIG YANKEE SLOUGH
SHE
LEGEND
D1
D13
A5C1
AAC2

Sacramento River. It meanders through the project area and has a high density of trees lining it.

Currently, Auburn Ravine receives water from the Wise Powerhouse, the City of Auburn Wastewater Treatment Plant and from stormwater runoff. Nevada Irrigation District (NID), Placer County Water Agency and the South Sutter Water District all use Auburn Ravine for transmitting water to agricultural users. During the spring and summer months, April through September, agricultural water is added into the flow of Auburn Ravine. Flows in Auburn Ravine will increase when the City of Auburn expands their wastewater treatment plant capacity from 1.67 million gallons per day (MGD) to 2.5 MGD (Jones & Stokes, 1996).

Stream flow is the lowest in Auburn Ravine between October and December when irrigation is not needed and demands for hydropower are low. This varies from a natural flow that would be lowest during the summer months: June, July, August and September. Flow data has been recorded by the NID where SR 65 crosses Auburn Ravine.

Markham Ravine originates in the in the rolling hills to the east of the project area. Markham Ravine is a fairly narrow watercourse that meanders through the project area. Some eroding hillsides along the creek suggest greatly increased flows during the winter months. Markham Ravine also carries irrigation water, making flows higher than normal at some times of the year.

Coon Creek originates in the Sierra foothills, flowing westerly across the project area, draining into the Cross Canal and then into the Sacramento River. The creek is heavily wooded in some areas and only sporadic trees line the creek in other areas. Water is supplied to Coon Creek by canals and water is taken from Coon Creek by other canals. It is difficult to know how closely the current flows resemble natural flows.

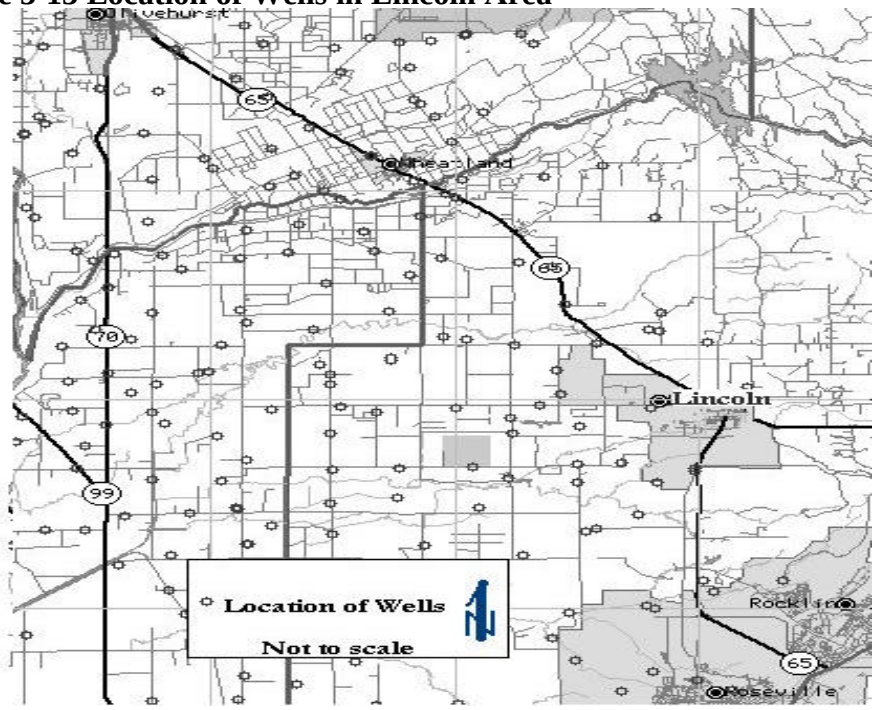
Yankee Slough roughly parallels the Bear River, originating in the rolling hills east of the project. Yankee Slough flows into the Bear River and then to the Sacramento River. The slough does not have trees along its banks. Some of the water flowing in Yankee Slough comes for the Camp Far West canal, affecting seasonal flows.

Orchard Creek, Auburn Ravine, Markham Ravine, Coon Creek and Yankee Slough all receive water from an irrigation canal and/or provide water for irrigation. Consequently, flows no longer conform to natural flows. The watersheds for each of these creeks are relatively small, Coon Creek being the largest. Due to the seasonal nature of precipitation, flow fluctuates significantly from the high flow periods (October through May) to the dry summer months.

3.5.2 Groundwater Hydrology

Available information indicates that groundwater elevation within the City of Lincoln is declining. A study conducted for the Coon Creek/Auburn Ravine watershed show that the average depth to groundwater has increased dramatically from only 7 m (22.9 ft) in 1929, to more that 18 m (59 ft) in 1967, due to overdrafting for agricultural irrigation purposes. Present data indicates that groundwater levels have continued to drop at a rate of approximately 0.3 m (one foot) per year since 1967, or about 9 m (29.5ft) (SACOG 1988b). Some agricultural wells may be affected by the proposed project. A map of wells in the area is shown in Figure 3-13.

Figure 3-13 Location of Wells in Lincoln Area



3.5.3 Municipal Water Supply

Municipal water for the City of Lincoln is supplied through a long-term contract with the Placer County Water Agency (PCWA). Lincoln purchases treated water wholesale from PCWA and distributes the water through its own system. PCWA receives the water from Lake Spaulding and treats the water at PCWA's Sunset Treatment Plant. The plant has a capacity of 5.0 million gallons per day, and supplies water to both the City of Lincoln and the Sunset Industrial Park south of the city. In addition the city has developed two wells east of the Lincoln Municipal Airport and expects to develop more wells as the demand increases (SACOG 1998a).

3.5.4 Beneficial Uses of the Water Resources

Beneficial uses are critical to water quality management in California. State law defines beneficial uses of California's waters that may be protected against quality degradation to include (but not limited to) "…domestic, municipal, agricultural and industrial supply, power generation, recreation, aesthetic enjoyment, navigation and preservation and enhancement of fish, wildlife and other aquatic resources or preserves" (Water Code Section 13050(f)). Protection and enhancement of existing and potential beneficial uses are primary goals of water quality planning (Regional Water Quality Control Board Central Valley Region 1998).

The beneficial uses, and abbreviations, listed below are the standard Basin Plan designations (RWQCBCVR 1998).

Municipal and Domestic Supply (MUN) - Includes uses of water for community, military, or individual water supply systems including, but not limited to, drinking water supply.

Agricultural Supply (AGR) - Includes uses of water for farming, horticulture, or ranching including, but not limited to, irrigation, stock watering, or support of vegetation for range grazing.

Industrial Service Supply (IND) - Includes uses of water for industrial activities that do not depend primarily on water quality including, but not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, or oil well re-pressurization.

Industrial Process Supply (PRO) - Uses of water for industrial activities that depends primarily on water quality.

Groundwater Recharge (GWR) - Includes uses of water for natural or artificial recharge of groundwater for purposes of future extraction, maintenance of water quality, or halting of saltwater intrusion into freshwater aquifers.

Freshwater Replenishment (FRSH) - Includes uses of water for natural or artificial maintenance of surface water quantity or quality (e.g., salinity).

Navigation (NAV) - Uses of water for shipping, travel, or other transportation by private, military, or commercial vessels.

Hydropower Generation (POW) - Uses of water for hydropower generation.

Water Contact Recreation (REC-l) - Includes uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing,

skin and SCUBA diving, surfing, white water activities, fishing, or use of natural hot springs.

Non-Contact Water Recreation (REC-2) - Includes the uses of water for recreational activities involving proximity to water, but not normally involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tidepool and marine life study, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities.

Commercial and Sport Fishing (COMM) - Uses of water for commercial or recreational collection of fish, shellfish, or other organisms including, but not limited to, uses involving organisms intended for human consumption or bait purposes.

Aquaculture (AQUA) - Includes the uses of water for aquaculture or mariculture operations including, but not limited to, propagation, cultivation, maintenance, or harvesting of aquatic plants and animals for human consumption or bait purposes.

Warm Freshwater Habitat (WARM) - Includes uses of water that support warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish or wildlife, including invertebrates.

Cold Freshwater Habitat (COLD) - Includes uses of water that support cold water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish or wildlife, including invertebrates.

Estuarine Habitat (EST) - Uses of water that support estuarine ecosystems including, but not limited to, preservation or enhancement of estuarine habitats, vegetation, fish, shellfish, or wildlife (e.g., estuarine mammals, waterfowl, shorebirds).

Wildlife Habitat (WILD) - Includes uses of water that support terrestrial ecosystems including, but not limited to, preservation and enhancement of terrestrial habitats, vegetation, wildlife (e.g., mammals, birds, reptiles, amphibians, invertebrates), or wildlife water and food sources.

Preservation of Biological Habitats of Special Significance (BIOL) - Uses of water that support designated areas or habitats, such as established refuges, parks, sanctuaries, ecological reserves, or Areas of Special Biological Significance (ASBS), where the preservation or enhancement of natural resources requires special protection.

Rare, Threatened, or Endangered Species (RARE) - Includes uses of water that support habitats necessary, at least in part, for the survival and successful maintenance of plant or animal species established under State or Federal law as rare, threatened or endangered.

Migration of Aquatic Organisms (MIGR) - Uses of water that support habitats necessary, at least in part, for the survival and successful maintenance of plant or animal species established under State or Federal law as rare, threatened or endangered.

Spawning, Reproduction, and/or Early Development (SPWN) – Uses of water that support high quality aquatic habitats suitable for reproduction and early development of fish.

Shellfish Harvesting (SHELL) – Uses of water that support habitats suitable for the collection of filterfeeding shellfish (e.g. clam, oysters, and mussels) for human consumption, commercial or sports purposes.

The beneficial uses of the Sacramento and Bear Rivers are listed in Table 3-16.

Table 3-16 Beneficial Uses

Surface Water Bodies	MUN	AGRI	AGRS	POW	REC-1	REC-2	WARM	COLD	MIGR(W)	MIGR(C)	SPWN(W)	SPWN(C)	WILD
Sacramento River Colusa Basin to I Street Bridge	E	E	~	E	E	E	E	E	E	E	E	E	E
Bear River	E	E	E	E	E	E	E	E	P	P	P	P	E

MUN = Municipal
AGR I = Agricultural Irrigation
AGR S = Ag. Stock Watering
POW = Industry Power
REC-1 = Recreation Contact
REC-2 = Other Non-Contact
WARM = Freshwater Habitat Warm
COLD = Freshwater Habitat Cold
MIGR(W) = Migration Warm
MIGR(C) = Migration Cold
SPWN(W) = Spawning Warm
SPWN(C) = Spawning Cold
WILD = Wildlife Habitat
E = Existing Beneficial Uses
P = Potential Beneficial Uses
Source: RWQCBCVR, 1999

3.5.5 Beneficial Uses for Groundwater

Unless otherwise designated by the Regional Water Board, all ground waters in the Region are considered as suitable or potentially suitable, at a minimum, for municipal and domestic water supply (MUN), agricultural supply (AGR), industrial service supply (IND) and industrial process supply (PRO) (RWQCBCVR, 1998).

3.5.6 Water Quality Objectives

The Basin Plan lists water quality objectives for a number of constituents. General water quality objectives for surface waters are presented in Table 3-17. Objectives for inorganic and organic chemicals are listed Table 3-18.

Table 3-17 General Water Quality Objectives for Surface Waters

Constituent	Description
Bacterio-logical	In no case shall coliform concentrations in waters of the Sacramento River Basin or the Bear River exceed the following: In waters designated for contact recreation (REC-1), the median fecal coliform concentration based on a minimum of not less than five samples for any 30 day period shall not exceed 200/100ml, not shall more than ten percent of total samples during any 30 day period exceed 400/1000ml.
Chemical Constituents	Waters designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the limits specified in the California Code of Regulation, Title 22 and listed in the Basin Plan. Waters designated for use as agricultural supply (AGR) shall not contain concentrations of chemical constituents in amounts that adversely affect such beneficial use. Numerical water quality objectives for individual waters are listed in the Basin Plan.
Dissolved Oxygen	Dissolved oxygen concentrations shall conform to those limits listed in the Basin Plan. The monthly median of the mean daily dissolved oxygen (D) concentration shall not fall below 85 % of saturation in the main water mass, and 95 percentile concentration shall not fall below 75 % of saturation. For waters not listed and where dissolved oxygen objectives are not prescribed, the dissolved oxygen concentrations shall not be reduced below the following minimum levels at any time: Waters designated COLD 7.0 ml/L Waters designated SPWN 7.0 ml/L Waters designated WARM 5.0 ml/L
Floating Material	Water shall not contain floating material in amounts that cause nuisance or adversely affect beneficial uses.
Oil and Grease	Waters shall not contain oils, waxes, or other materials in concentrations that cause nuisance, result in a visible film or coating on the surface of the water or on objects in the water or otherwise adversely affect beneficial uses.
Pesticides	No individual pesticide or combination of pesticides shall be present in concentrations that adversely affect beneficial uses. Discharges shall not result in pesticide concentrations in bottom sediments or aquatic life that adversely affect beneficial uses. Total identifiable persistent chlorinated hydrocarbon pesticides shall not be present in the water column at concentrations detectable within the accuracy of analytical methods approved by the Environmental Protection Agency or the Executive Officer. Pesticide concentrations shall not exceed those allowable by applicable anti-degradation policies (see State Water Resources Control Board Resolution NO. 68-16 AND 40 C.F.R. § 131.12. Pesticide concentrations shall not exceed the lowest levels technically and economically achievable. Waters designated for use as domestic or municipal supply (MUN) shall not contain concentration of pesticides in excess of the Maximum Contaminant Levels set forth in California Code of Regulations, Title 22, Division 4, Chapter 15.
pH	The pH shall not be depressed below 6.5 nor raised above 8.5
Radioactivity	Radionuclides shall not be present in concentrations that are harmful to human, plant, animal, or aquatic life nor result in the accumulation of radionuclides in the food web to the extent that presents a hazard to human, plant, animal, or aquatic life.
Sediment	The suspended sediment load and suspended sediment discharge rate of surface waters shall not be altered in such a manner as to cause nuisance or adversely affect beneficial uses.
Settleable Materials	Waters shall not contain substances in concentrations that result in the deposition of material that causes nuisance of adversely affects beneficial uses.

Constituent	Description
Suspended Solids	Waters shall not contain suspended material in concentration that cause nuisance or adversely affect beneficial uses.
Taste and Odor	Water shall not contain taste and odor producing substances in concentration that impart undesirable tastes or odors to domestic or municipal water supplies or to fish flesh or other edible products of aquatic origin, or that cause nuisance or otherwise adversely affect beneficial uses.
Temperature	The natural receiving water temperature of intrastate waters shall not be altered unless it can be demonstrated to the satisfaction of the Regional Water Board that such alteration in temperature does not adversely affect beneficial uses.
Toxicity	All waters must be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal or aquatic life. This objective applies regardless of whether the toxicity is caused by a single substance of the interactive effect of multiple substances. Analysis of indicator organisms, species diversity, population density, growth anomalies and biotoxicity tests of appropriate duration or other methods as specified by the Regional Water Board will determine compliance with this objective.
Turbidity	Waters shall be free of changes in turbidity that cause nuisances or adversely affect beneficial uses. Increases in turbidity attributable to controllable water quality factors shall not exceed the following limits: Where natural turbidity is between 0 and 5 Nephelometric Turbidity Units (NTUs), increases shall not exceed 1 NTU. Where natural turbidity is between 5 and 50 NTUs, increases shall not exceed 20%. Where natural turbidity is between 50 and 100 NTUs, increases shall not exceed 10%. Where natural turbidity is greater than 100 NTUs, increases shall not exceed 10%. In determining compliance with the above limits, appropriate averaging periods may be applied that beneficial uses will be fully protected.

Source: Regional Water Quality Control Board, Central Valley Region Basin Plan, 1998

Table 3-18 Water Quality Objectives for Inorganic and Organic Chemicals for the Bear River Hydrologic Unit

Chemical	Maximum contamination Level	Detail
1,1,1-Trichloroethane	0.2 mg/L	NA
1,1,2,2-Tetrachloroethane	0.001 mg/L	NA
1,1,2-Trichloro-1,2,2-Trifloroet	1.2 mg/L	NA
1,1,2-Trichloroethane	0.005 mg/L	NA
1,1-Dichloroethane	0.005 mg/L	NA
1,1-Dechloroethylene	0.006 mg/L	NA
1,2,4-Trichlorobenzene	0.07 mg/L	NA
1,2-Trichlorobenzene	0.6 mg/L	NA
1,2-Dichloroethane	0.0005 mg/L	NA
1,2-Dichloropropane	0.005 mg/L	NA
1,3-Dichloropropene	0.0005 mg/L	NA
1,4-Dichlorobenzene	0.005 mg/L	NA
2,3,7,8-TCDD (Dioxin)	0.0000003 mg/L	NA

Chemical	Maximum contamination Level	Detail
2,4,5-TP (Silvex)	0.05 mg/L	NA
2,4-D	0.07 mg/L	NA
Alachlor	0.002 mg/L	NA
Aluminum	1 mg/L	NA
Antimony	0.006 mg/L	NA
Arsenic	0.005mg/L	NA
Asbestos	7 MFL	NA
Atrizine	0.003 mg/L	NA
Barium	1 mg/L	NA
Bentazon	0.018 mg/L	NA
Benzene	0.001 mg/L	NA
Benzo(a)pyrene	0.0002 mg/L	NA
Beryllium	0.004 mg/L	NA
Cadmium	0.0005 mg/L	NA

Chemical	Maximum contamination Level	Detail
Carbofuran	0.018 mg/L	NA
Carbon Tetrachloride		NA
Chlordane	0.0001 mg/L	NA
Chromium	0.05 mg/L	NA
Cis-1,2-Dichloroethylene	0.006 mg/L	NA
Copper	1.3 mg/L	NA
Cyanide 0.2	0.2 mg/L	NA
Dalapon	0.2 mg/L	NA
Diphthalate (2-ethylhexyl)	0.004 mg/L	NA
Dibromochloropropane	0.0002 mg/L	NA
Dichloromethane	0.005 mg/L	NA
Dinoseb	0.007 mg/L	NA
Diquat	0.02 mg/L	NA
Endothall	0.1 mg/L	NA
Endrin	0.002 mg/L	NA
Ethylbenzene	0.7 mg/L	NA
Ethylene Dibromide	0.00005mg/L	NA
Fluoride	2.4 mg/L	<53.7F
Fluoride	2.2 mg/L	53.8F-58.3F
Fluoride	2 mg/L	58.4F-63.8F
Fluoride	1.8 mg/L	63-9F-70.6F
Fluoride	1.6 mg/L	70.7F-79.2F
Fluoride	1.4 mg/L	79.3F-90.5F
Glyphosate	0.7 mg/L	NA
Heptachlor	0.00001mg/L	NA
Heptachlor Epoxide	0.00001mg/L	NA
Hexachlorobenzene	0.001 mg/L	NA
Hexachlorocyclopentadiene	0.05 mg/L	NA
Lead	0.015 mg/L	NA
Lindane	0.0002 mg/L	NA
Mercury	0.002 mg/L	NA
Methoxychlor	0.04 mg/L	NA
Molinate	0.02 mg/L	NA
Monochlorobenzene	0.07 mg/L	NA
Nickel	0.1 mg/L	NA
Nitrate (as NO3)	45 mg/L	NA
Nitrate + Nitrate (sum as nitogen)	10 mg/L	NA
Nitrate (as nitrogen)	1 mg/L	NA
Oxamyl	0.2 mg/L	NA
PCBs	0.0005 mg/L	NA
Pentachlorophenol	0.001 mg/L	NA
Picloram	0.5 mg/L	NA
Selenium	0.05 mg/L	NA
Simazine	0.004 mg/L	NA
Styrene	0.1 mg/L	NA
Tetrachloroethylene	0.005 mg/L	NA
Thallium	0.002 mg/L	NA
Thiobencarb	0.07 mg/L	NA
Toluene	0.15 mg/L	NA
Toxaphene	0.003 mg/L	NA
trans-1,2-Dichloroethylene	0.01 mg/L	NA
Trichloroethylene	0.005mg/L	NA
Trichlorofluoro-methane	0.15 mg/L	NA
Vinyl Chloride	0.0005 mg/L	NA
Xylenes	1.75 mg/L	NA

Source: RWQCBCVR 1998
NA = Not Applicable

3.5.7 Existing Water Quality

The City of Auburn's Wastewater Treatment Plant (WWTP) has been operating under a cease-and-desist order since 1994 for discharging effluent that exceeded the WWTP's permit limitations into the Auburn Ravine. Recent water quality studies to assess the effects of the City of Auburn's WWTP discharge found that the effluent has little impact on ambient water quality in Auburn Ravine. Significant dilution and high capacity to assimilate organic matter are results of the high dissolved oxygen concentration maintained in the stream as it flows to Lincoln (Jones & Stokes, 1996).

Water quality studies have been conducted on Auburn Ravine in conjunction with the City of Lincoln Wastewater Treatment and Reclamation Facility Draft Environmental Impact Report. Data collected between December 1998 through February 1999 at the Joiner Parkway Bridge in Lincoln showed that stormwater runoff and higher flows influence water quality. Although there was low biological oxygen demand, neutral pH, low hardness and dissolved oxygen (DO) typically above 7.0 mg/L, there was moderate turbidity that varied with stream flow conditions and rainfall. Data collected during the summer and fall 1995, shown in Table 3-19, reflect the influences of urban runoff, agricultural activities, septic tanks and other factors (Jones & Stokes, 1999).

Table 3-19 Concentrations of Conventional Constituents of Concern in Auburn Ravine

	BOD (mg/L)	**NO^3** (mg/L N)	**NH^3** (mg/L N)	**TKN** (mg/L N)	**TP** (mg/L P)	**TURB** (NTU)	**FC** (#/100 ml)	**pH**	**Temp** (°C)	**DO** (mg/L)
Samples Collected from Auburn Ravine 7/24/95										
Above town	<3	0.13	<0.05	<0.5	<0.5	3.9	50	6.8-6.9	14.7-16.9	10.0-10.4
mid reach	<3	0.12	<0.05	<0.5	0.6	6.6	--	6.7-7.6	15.9-17.3	9.6-9.8
Lower reach	<3	<0.11	0.052	0.6	0.9	4.6	500	6.0-7.4	20.4-22.7	8.0-8.3
Samples Collected from Auburn Ravine 9/14/95										
Above town	<3	0.71	0.064	<0.5	0.04	1.8	50	--	--	--
mid reach	<3	0.93	0.053	<0.5	0.05	2.0	--	--	--	--
Lower reach	<3	0.58	0.064	<0.5	0.05	3.4	500	--	--	--
Samples Collected from Auburn Ravine 10/20/95										
Above town	<3	--	<0.05	<0.5	0.05	0.72	30	6.9-7.2	15.5-15.7	7.2-9.3
mid reach	<3	--	<0.05	<0.5	0.08	1.8	--	6.8-7.4	15.5-17.0	7.6-8.5
Lower reach	<3	--	<0.05	<0.5	0.09	4.7	90	7.2	17.0-17.0	6.2-7.0

BOD = biological oxygen demand DO = dissolved oxygen NH^3 = ammonia (un-ionized)
NO^3 = nitrates FC = fecal coliform Temp. = Temperature
TKN = total Kjehldahl nitrogen TP = total Phosphorous Turb = Turbidity

The city has recently undertaken an intensive sampling effort to gain a better understanding of the variability of the trace metal priority pollutants in Auburn Ravine (at Joiner Parkway Bridge). Several trace metals (i.e., cadmium, copper, lead, nickel, and zinc) were present during the various sampling periods at levels that exceed proposed water quality criteria. The May 1998 and January-February 1999 samplings were

conducted immediately following storm events and the levels of pollutants in these samples may be characteristic of transient storm-related inputs of urban pollutants. More recent data using clean techniques show much lower values for dissolved metals, with none of the values exceeding proposed regulatory criteria (Jones & Stokes, 1999).

Sources of pollutants in the Auburn Ravine watershed include both point sources of pollutants (e.g., the City of Auburn's WWTP) and non-point sources of pollutants (e.g., agricultural and urban runoff). The City of Auburn's wastewater discharge constitutes the largest single known source of wastewater effluent entering directly into Auburn Ravine. The percentage contribution from Auburn's WWTP is lower in the dry season as a result of larger releases of water into the channel by PG&E and PCWA. In the dry season, Auburn's effluent has typically accounted for 6.8% of the flow in October and 1.8% in July (Jones & Stokes, 1999).

In the Sacramento Valley there is a natural weather pattern of a long dry period from May to October. During this seasonal dry period, pollutants contributed by vehicle exhaust, vehicle and tire wear, crankcase drippings, spills and atmospheric fallout accumulate within a watershed. Precipitation during the early portion of the wet season (November to April) displaces these pollutants into the storm water runoff, resulting in high pollution concentrations in the initial wet weather runoff. A study conducted by the RWQCB in Sacramento, California revealed that during the rainy season, the first flush of heavy metals and hydrocarbons occurred during the first five inches of seasonal rainfall. Trace metal and hydrocarbon concentrations then remained largely static in subsequent storm events. Some sources of dry weather runoff constituent pollutants included commercial and domestic irrigation, general washoff, groundwater infiltration and illegal discharges (EIP Associates 1992a).

The State of California, in accordance with Section 303(d) of the Clean Water Act, has submitted to the U.S. Environmental Protection Agency (EPA) a draft list of impaired waters. EPA is currently reviewing the list and may make further changes. The 1998 list includes survey information, but no specific information on the Upper Coon-Upper Auburn, Lower Bear and the Lower Sacramento watersheds.

For the section of the Sacramento watershed where the project is located, parameters of concern include unknown toxicity, mercury and Diazinon. The pollution sources were listed as agriculture and resource extraction.

3.6 FLOODPLAIN

During times of high flows, water backs up along man made barriers such as the existing railroad and highway bridges on Auburn Ravine. The low area along the

railroad tracks and SR 65 fills with water during wet winters. FEMA has mapped 100-year floodplains along all of the creeks in the project area (See Figure 4-12, in the Environmental Consequences Chapter for a map of floodplain encroachments.). The levee on the north side of Auburn Ravine, on the Scheiber Ranch, attests to the potential for flooding in the low sloping flat areas. In addition, the FEMA maps show SR 65 as a major impediment to the flow of water for a 100-year flood event for Markham Ravine. Flooding may occur downstream in Sutter County during wet events (SACOG 1988b, FEMA maps).

Natural and beneficial floodplain values exist at Auburn Ravine and Coon Creek due to their perennial flow. These values are relatively diverse. The primary values that exist in the vicinity of the proposed project alternate alignments are as follows:

- Natural habitat for fish, wildlife, and native riparian vegetation
- Open space
- Recreation
- Ground water recharge
- Scenic beauty

These values also exist at Markham Ravine and Yankee Slough, but to a lesser degree due to the absence of significant surface flow during the summer and fall of most years.

3.7 NATURAL RESOURCES

3.7.1 Introduction

The Lincoln Bypass Study Area has been substantially altered during a long history of agricultural and industrial land use. Figure 3-14 outlines the Study Area. About 9 % of the Study Area is developed and about 43 % has been converted to some form of agricultural production (row crops, rice, orchards, etc.) Many of the drainage through the area have been channelized or otherwise altered. Levees have been constructed to contain floodwaters or to retain water for rice farming. Many drainage appear to be conveying supplemental irrigation water. Cattle grazing have also taken a toll on the natural environment in the Study Area.

More recently, residential development has accelerated in the project area, especially in the vicinity of Joiner Parkway. New housing is also under construction south of Nicolaus Road at the intersection of Lakeside Drive and north of Nicolaus Road to the east of Nelson Lane. Many areas now being developed as residential subdivisions were likely in some form of agricultural use previously.

3.7.2 Agency Coordination

This section summarizes the responsibilities of key agencies involved in the review of the NESR and related project documents for this project. Coordination with the agencies is also discussed. Copies of correspondence with the agencies are included in the Comments and Coordination Chapter, Chapter 7.

Environmental Protection Agency (EPA)

EPA has primary responsibility for administration of the Clean Water Act and oversight authority on 404 permitting issues. EPA's 404(b)(1) guidelines are the substantive criteria used by the Corps in evaluating discharges of dredged or fill material into waters of the United States. EPA is also a signatory agency to the 1993 NEPA/404 Integration Memorandum of Understanding (MOU).

EPA has been involved in the development of the draft Alternatives Analysis for the Route 65 Lincoln Bypass, and has concurred with the proposed project purpose and range of alternatives. EPA will continue to be involved both in review of environmental documents and in the 404 permit process.

U.S. Army Corps of Engineers (ACOE)

Under Section 404 of the Clean Water Act, the ACOE regulate the discharge of dredged or fill material into waters of the U.S. A Section 404 permit from the ACOE will be required for the project to authorize the discharge of dredged or fill material into vernal pools and other wetlands and regulated waters associated with roadway construction. The ACOE is also a signatory agency to the NEPA/404 Integration MOU.

The extent to which the recent U.S. Supreme Court decision of SWANCC (Solid Waste Agency of North Cook County) v. United States Army Corps of Engineers (ACOE) (No. 99-1178 [January 9, 2001]) regarding the ACOE's jurisdiction of isolated, non-navigable, intrastate waters used as habitat for non-migratory birds may ultimately be interpreted as rendering non-navigable, isolated, intrastate waters beyond the scope of the Clean Water Act (CWA) has yet to be determined. The SWANCC decision only invalidates the Migratory Bird Treaty Rule. Hence, a determination of what, if any, isolated wetlands on the project site may no longer be subject to ACOE's jurisdiction (as defined by the SWANCC decision) will at the ACOE's discretion and will require consultation with the ACOE.

If the ACOE no longer takes jurisdiction over an isolated wetland that supports a federally threatened or endangered species, or a species proposed for listing federally as threatened or endangered (such as a listed fairy shrimp), required Section 7 consultation will be initiated by other federal agencies involved, such as FHWA.

Regardless of the SWANCC decision's affect on federal authority under the federal CWA, the State retains its independent authority over wetlands, under State laws and federal waivers to regulate vernal pools and other wetlands.

The ACOE verified the original wetland delineation for the study area in 1991, and has provided direction on updating the delineation and reverifying the findings. The ACOE has concurred with the proposed project purpose and range of alternatives evaluated for the project. The ACOE will need to verify the final wetland delineation for the selected project alternative.

Regional Water Quality Control Board (RWQCB)

A Section 401 Water Quality Certification or Waiver from the RWQCB is required in conjunction with the Section 404 permitting process. A 401 Certification or waiver will be required before the 404 permit is considered valid. Application to the RWQCB is generally made after the environmental document is complete.

U.S. Fish and Wildlife Service (FWS)

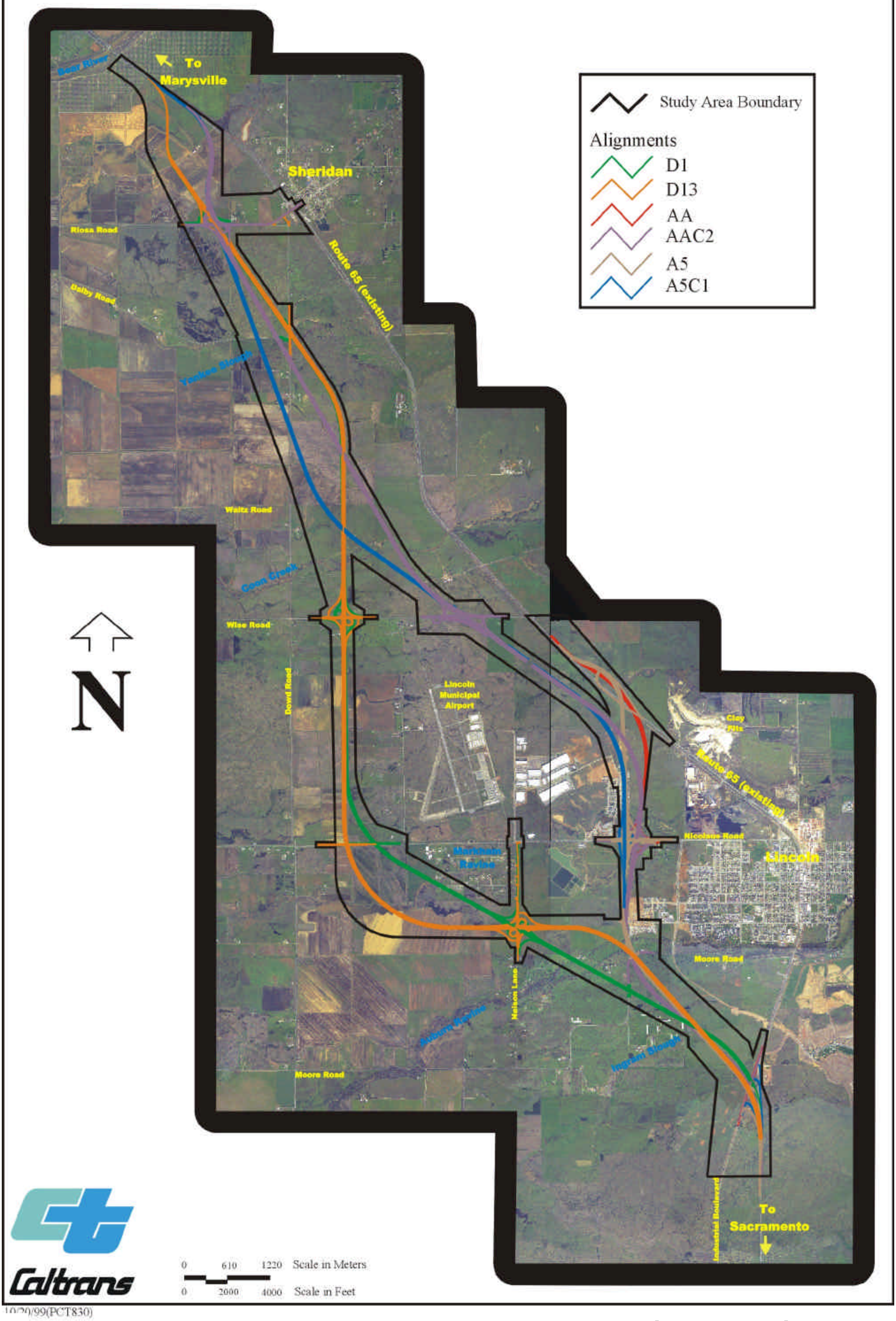
Under the Fish and Wildlife Coordination Act of 1958, Federal agencies are required to coordinate during project planning stages with FWS and with the State agency responsible for fish and wildlife resources on activities that modify any body of water. Under Section 7 of the Federal Endangered Species Act, Federal agencies are required to consult with FWS on any action that "may affect" a Federally listed threatened or endangered species or designated critical habitat. FWS is also a signatory agency to the NEPA/404 Integration MOU and has concurred with the proposed project purpose and range of alternatives evaluated for the project.

FWS will continue to be involved in the project through review of environmental documents, participation in the 404 permitting process and in Section 7 consultation for potential project effects on listed species.

California Department Of Fish and Game (CDFG)

CDFG, through provisions of Sections 1601-1603 of State of California Administrative Code, is empowered to issue agreements for any alteration of a river, stream or lake where fish or wildlife resources may adversely be affected. Streams (and rivers) are defined by the presence of a channel bed and banks, and at least an intermittent flow of water. CDFG regulates wetland areas only to the extent that those wetlands are part of a river, stream or lake as defined by CDFG.

Coordination with CDFG will be necessary under the Fish and Wildlife Coordination Act, as described above, and under the California Endangered Species Act for potential impacts to State listed species. In addition, a Section 1601 Agreement will



10/20/99(PCT830)

Source: Mapping/GIS - LSA Associates, Inc., 1999
Base Photo - Andregg, Inc., March 1999

Natural Resources Study Area
Figure 3-14

be required from CDFG to authorize work in streams and other waterbodies. CDFG will also be involved in the review of project environmental documents and in the 404 permitting process.

National Marine Fisheries Service (NMFS)

Under Section 7 of the Federal Endangered Species Act, Federal agencies are required to consult with NMFS on any action that "may affect" a Federally listed threatened or endangered species or designated critical habitat for which NMFS has responsibility. For the Route 65 Lincoln Bypass project, NMFS has responsibility for reviewing project effects to anadromous fish.

3.7.3 Fish and Wildlife

The plant communities in the Study Area provide habitat for a variety of fish and wildlife resources. The following sections describe the wildlife habitats and species expected to occur in these habitats. A complete list of fish and wildlife species observed in the project area can be found in Appendix F.

Aquatic Habitat

Aquatic habitats in the Study Area include open water associated with creeks, reservoirs and stock ponds, flooded rice fields, backwater sloughs, vernal pools/marshes and permanent/seasonal marsh and irrigation canals. The best developed aquatic habitat in the Study Area is associated with the large marsh complexes at the west end of Markham Ravine and Bull Marsh, and along the primary drainage's (Auburn Ravine, Markham Ravine, Coon Creek, Yankee Slough). The hydrology of most of the aquatic habitats in the Study Area is influenced to some degree by agricultural diversions, irrigation pumping and return flows and wastewater discharges.

Vertebrate species observed, or expected to occur, in aquatic habitats in the Study Area include beaver, river otter, muskrat, northern pond turtle, common garter snake, Pacific tree frog and bullfrog. Aquatic habitats in the Study Area also support a resident warm water fishery including both introduced and native species. Based on sampling conducted by Beak in 1990, Auburn Ravine and Coon Creek are dominated by native fish species including Sacramento squawfish and Sacramento sucker. Green sunfish, carp and Pacific lamprey were also recorded. Markham Ravine, Ingram Slough and Yankee Slough support a primarily introduced fishery including mosquito fish, green sunfish, carp and bigscale logperch.

Freshwater marsh is important for many wildlife species, particularly waterfowl and shorebirds. Freshwater marsh and flooded rice fields in and near the Study Area provide habitat for thousands of migrating waterfowl during the winter. Biologists

observed between 15,000 and 20,000 birds, primarily ducks, in these areas during the early March surveys. Marsh areas are also important in nutrient absorption functions that improve water quality.

Small numbers of chinook salmon were observed in Auburn Ravine, Coon Creek and Ingram Slough. Although believed to be stocked fish, it is possible that fall run chinook salmon and Central Valley steelhead migrate through the Study Area. The Study Area does not provide suitable spawning habitat (gravel beds) for these species.

Terrestrial Habitat

Terrestrial habitats in the Study Area include buildings and other structures, agricultural fields, rice fields, orchards, grasslands, oak woodlands, mixed riparian forest and marsh. Structures, buildings and landscaped areas provide low-quality wildlife habitat, primarily exploited by those species adapted to human disturbances. Barns and other outbuildings may provide habitat for bats (big brown bat, Mexican free-tailed bat) and barn owls, while a variety of structures provide nesting sites for swallows.

Agricultural land provides habitat for small mammals and birds, including many of the species listed above. Once harvested, agricultural fields provide foraging opportunities for raptors, such as northern harrier, white-tailed kite and Swainson's Hawk. Rice fields, which are extensive both within and west of the project area, pond large areas of water and provide good quality waterfowl and wading bird habitat. Orchards may provide cover and foraging habitat for many bird species also commonly found in woodlands and other habitats in the Study Area, however, mowing, plowing, spraying, and harvesting are activities which will deter normal cover and foraging by bird species.

Wildlife use of non-native grasslands is similar to agricultural lands, providing habitat for a wide variety of small mammals, songbirds, raptors and reptiles. Mixed oak woodland provides high-value wildlife habitat for a variety of bird species and some mammals.

Mixed riparian forest, especially where well developed, is one of the most important habitats for wildlife in the project area. The structural complexity of the habitat provides a variety of foraging, resting and nesting opportunities for many species, including a number of special status species. Many of the species found in oak woodlands also occur in the riparian forest.

The riparian communities along Auburn Ravine and Coon Creek provide relatively unobstructed wildlife corridors through the Study Area. These corridors are likely used by a number of wildlife species for crossing through the developed areas around Lincoln. Existing SR 65, the UPTC tracks and a number of secondary roads and farm roads cross

these corridors. Existing SR 65 is immediately adjacent to the UPTC tracks through most of the Study Area. The main drainage: Auburn Ravine, Markham Ravine and Coon Creek, run under the highway and railroad via culverts.

3.7.4 Plants

Table 3-20 provides a breakdown of the plant communities and other land uses occurring in the overall Study Area. The percentage of each community relative to the total acreage within the Study Area is also given. A list of all plant species observed in the Study Area in included in the Appendix. Figure 3-15 provides an aerial overview of the plant communities in the Study Area.

Table 3-20 Plant Communities Occurring in the Study Area

Comm-unity	Area in Hectares *(acres)*	% of Study Area	Description
Developed Disturbed	175.0 ha *432 ac*	8.7 %	Included in this category are developed areas such as roadways, buildings and other structures, adjacent lots as well as undeveloped areas that have been severely disturbed by grading or other earth-disturbing activity. Vegetation is typically limited to ruderal species.
Agricultural Lands	855.0 ha *2,111 ac*	42.7 %	Agricultural land, a dominant community type in the Study Area, includes all row crops, rice fields and orchards. Also included in this category are irrigation canals, ditches, small reservoirs and ponds and similar areas directly associated with production of rice or other crops. Fallow fields are included in this community provided they are obviously part of an ongoing agricultural operation. Agricultural land occurs throughout the project area with the largest contiguous expanses located west of the Lincoln Airport and north of Wise Road.
Nonnative Grassland	257.3 ha *635 ac*	12.8 %	Nonnative grassland is common in the Study Area. Vegetation in nonnative grassland is dominated by annual grasses and forbs including wild oats, soft chess, ripgut brome, medusa grass, filaree and yellow star-thistle. Included in this community type are fallow agricultural fields that have been fallow for so long as to be indistinguishable from nonnative grassland. Annual grassland that contain vernal pools and vernal pool complexes are not included in this category.
Mixed Oak Woodland	49.5 ha *122 ac*	2.5 %	Valley oak and blue oak are the dominant trees, with interior live oak also common. Mixed oak woodland in the project area is generally open and contains an understory of nonnative grassland. These woodlands are often found on high terraces near drainage features, but also occur independent of any significant water source. The largest contiguous oak woodland in the Study Area occurs just west of Joiner Parkway, both north and south of Nicolaus Road. Oak woodland also occurs further west along Nicolaus Road and south of Auburn Ravine near Moore Road.

Comm-unity	Area in Hectares *(acres)*	% of Study Area	Description
Mixed Riparian Forest	22.6 ha *60 ac*	1.1 %	The major drainage in the project area (Auburn Ravine and Coon Creek) support a mixed riparian forest typically dominated by valley oak but also including several other tree species, often as codominants. Dominant overstory species include valley oak, California black walnut and Goodding's willow. Other tree species include English walnut, Fremont cottonwood, black cottonwood, white alder, interior live oak, sandbar, arroyo and red willow. Understory species in the mixed riparian forest include Himalayan blackberry, mugwort, creeping wildrye, California wild grape, Baltic rush, buttonwillow, California rose and others. The vegetative complexity of the riparian community depends on the structural complexity of the floodplain, which often varies along the drainage's. Where stream banks are deeply incised (typical in many reaches); oaks, walnuts and other trees typically occur in a narrow band along upper banks with nominal understory; the streambed supports little vegetation in these areas. In reaches with well-developed terraces, sandbar and other willows typically occupy the lower terraces with a variety of riparian species on the middle terraces and oaks along the upper banks. These areas generally support a well-developed understory. Riparian corridors in the project area are heavily used by cattle, and the plant community reflects this use. In the more intensively grazed areas, the understory is significantly reduced and few seedling trees occur. Deeply incised banks may also be a result of cattle grazing. None of the riparian corridors are free of impacts; Auburn Ravine appears to be the most highly degraded.
Valley Freshwater Marsh	56.0 ha *138 ac*	2.8 %	Perennial or nearly perennial slow-moving or standing water is the common element of all freshwater marsh habitat. In deeper water areas, this community is dominated by cattail and bulrush, often associated with floating mats of water primrose. In shallower water, and on saturated banks, several species of rush, spikerush and sedge are common along with nutsedge, smartweed, dallis grass and Bermuda grass. Thickets of willow occur occasionally within marsh areas and are considered part of the marsh habitat. Valley freshwater marsh intergrades with open water in deeper waterbodies and with vernal marsh in shallower water areas. Valley freshwater marsh habitat in the project area occurs naturally in slow-moving creeks and sloughs (e.g., Yankee Slough), ponds, irrigation and roadside ditches and backwater areas of the larger drainages. The most extensive areas of valley freshwater marsh occur in Markham Ravine south of Nicolaus Road and at Bull Marsh in the northwest portion of the project area. Due to the long history of grazing and water diversions in the project area, much of the valley freshwater marsh habitat is degraded and thoroughly invaded by nonnative plant species. Portions of the Study Area support vegetation characteristic of valley freshwater marsh but are truly agricultural lands or disturbed areas that support this vegetation due to artificial water sources. Areas fitting this description were mapped as agricultural land or disturbed areas since they are not true valley freshwater marsh communities.
Great Valley Willow Scrub	1.1 ha *2.8 ac*	0.06 %	Great Valley willow scrub only occurs in a few locations within the project area. Vegetation in this community generally consists of thickets of willow and Fremont cottonwood with little to moderate understory. Understory vegetation can include annual grasses and forbs, as well as shrub cover such as California rose and California blackberry. This community is always associated with a water source and often occurs adjacent to valley freshwater marsh.

Comm-unity	Area in Hectares *(acres)*	% of Study Area	Description
Grassland/ Northern Hardpan Vernal Pool Complex	561.4 ha *1,386 ac*	28.0 %	Vernal pools are seasonal wetlands that pond water for short periods during the winter and early spring due to an impermeable, subsurface layer that retards percolation. Vernal pools generally occur in nonnative grassland as part of a complex that includes the pools and contributing watershed interconnected through a series of vernal swales. They support plant and wildlife species specially adapted to the seasonal fluctuations such as the Federally threatened vernal pool fairy shrimp (*Branchinecta lynchi*) and Federally endangered vernal pool tadpole shrimp (*Lepidurus packardi*). Two types of vernal pools occur in the project area, northern hardpan vernal pools and volcanic mudflow vernal pools. The impermeable layer in northern hardpan vernal pools consists of an iron-silicate cemented hardpan. This type of vernal pool is by far the most common in the project area. Northern hardpan pools are generally associated with iron oxidized soils such as San Joaquin series. Dominant vegetation in northern hardpan vernal pools includes annual hairgrass, coyote thistle, downingia and popcorn flower. The largest concentrations of northern hardpan vernal pools in the project area are located in the extreme southern end between SR 65 and Industrial Boulevard and in the eastern portion of the project area between Nicolaus Road and Wise Road.
Grassland/ Northern Volcanic Mudflow Vernal Pool Complex	4.7 ha *11.7 ac*	0.2 %	Northern volcanic mudflow vernal pools are created by cemented volcanic mudflows forming an impermeable layer. They are much less common than northern hardpan vernal pools and are limited to the Exchequer soil series within the project area. Volcanic mudflow pools are typically smaller and shallower than hardpan pools. As a result, they dry up sooner than hardpan pools and the flowering times are usually several weeks earlier. Typical plant species in northern volcanic mudflow vernal pools include yellow carpet, Fremont goldfields, coyote thistle and wooly marbles. Northern volcanic mudflow vernal pools only occur in two locations within the project area. One complex is located northeast of existing SR 65 between Nicolaus Road and Wise Road. A second, smaller complex is located in the southern portion of the project area, between SR 65 and Industrial Boulevard.
Vernal Marsh	10.0 ha *24.7 ac*	0.5 %	Vernal marsh is a community type transitional between vernal pools and valley freshwater marsh. Vernal marsh areas are generally deeper, and stay wet longer, than vernal pools. Consequently, many typical vernal pool plant species do not occur in vernal marshes. Vernal marsh areas typically dry out in the summer; thus, many of the typical freshwater marsh species described previously are precluded. Common species found in vernal marshes include rushes and spike rushes in the deeper areas and vernal buttercup and popcorn flower in the shallows.
Open Water	11.4 ha *28.2 ac*	0.6 %	Open waters are unvegetated areas of ponds, channels or other aquatic areas that are not included in another natural community. Open water is typically associated with valley freshwater marsh communities in the deeper water where marsh species cannot grow. The largest expanse of open water is located in Markham Ravine south of Nicolaus Road where the drainage has been partially dammed.
Total	**2,004.0 hectares (4,948.3 acres)**		

Source: Mapping/GIS - LSA Associates, Inc., 1999
Base Photo - Andregg, Inc,. March 1999

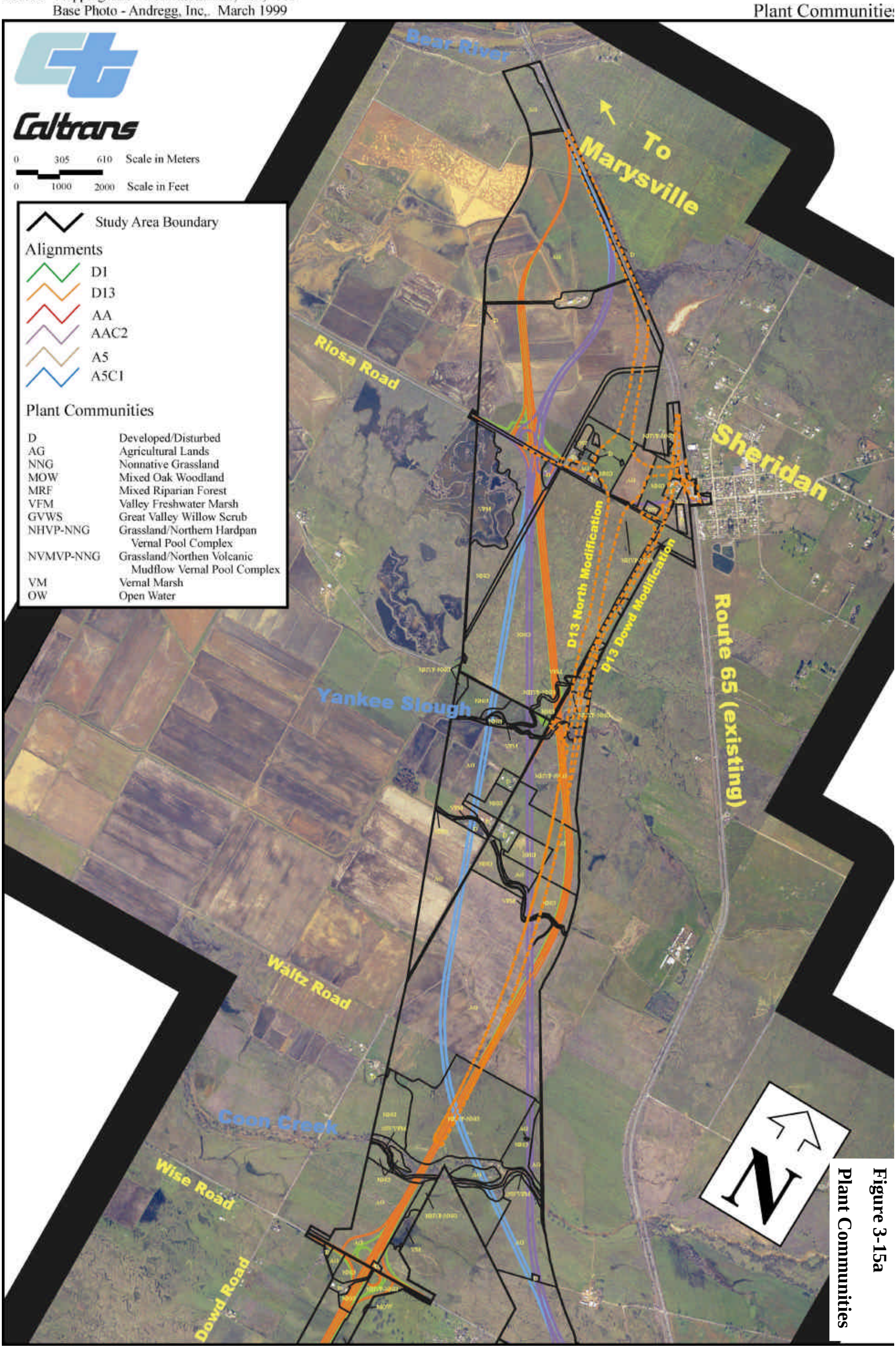


Figure 3-15a
Plant Communities

3.7.5 Special Status Species

An annotated list of special status species potentially occurring in the project area was generated based on California Natural Diversity Data Base (CNDDB), California Native Plant Society (CNPS) and FWS lists, coordination with agency biologists, review of previous project documents and input from biologists. The annotated list is included in Table 3-21. Below are definitions of the terms used in Table 3-20;

- *Endangered (state and federal)*: A species that is in danger of extinction throughout all or a significant portion of its range.
- *Threatened (state and federal)*: A species that that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.
- *Proposed Threatened or Endangered (federal)*: Any species that is proposed in the Federal Register to be listed under Section 4 of the Endangered Species Act.
- *Candidate (federal)*: Species for which the USFWS has on file sufficient information on biological vulnerability and threat(s) to support issuance of a proposal for listing, but issuance of a proposed rule is currently precluded by higher priority listing actions.
- *Species of Concern (federal)*: A species that was a former federal Category 2 Candidate for listing, which is a species for that the USFWS has concerns about, but has insufficient information on file on vulnerability and threats to support issuance of a proposal for listing.
- *Species of Concern (state)*: California species of special concern are those that the California Department of Fish and Game is concerned about because of declining population levels, limited ranges, and/or continuing threats have made them vulnerable to extinction.
- *Migratory Nongame Birds of Management Concern*: Species of migratory nongame birds that are considered to be of concern in the United States because of: 1) documented or apparent population declines; 2) small or restricted populations, or; 3) dependence on restricted or vulnerable habitats.
- *CNPS List 1B*: Plants that the California Native Plant Society (CNPS) considers to be rare, threatened or endangered in California and elsewhere.
- *CNPS List 2*: Plants that the CNPS considers to be rare, threatened or endangered in California, but are more common elsewhere.

Figure 3-16 shows locations where special status species have been recorded in the Study Area. Letters documenting coordination with the U.S. Fish and Wildlife Service are located in Chapter 7.

This section provides an overview of the special status species that are known to occur, or may potentially occur, within the Study Area. Additional detailed information on State and Federal listed species potentially affected by this project is included in the Natural Environment Study, available by request.

The streams present within the project site will likely be considered Critical Habitat for the Central Valley steelhead. Because the fall/late fall-run chinook salmon is a candidate for listing as threatened or endangered, Critical Habitat, and Essential Fish Habitat, could be designated for this ESU if it is listed prior to implementation of the project.

Table 3-21 Special Status Species Potentially Occurring in the Project Area

Common Name ***Latin Name***	**Status**[1]	**Potential in Project Area / Results of Previous Studies**	**Notes**
Mammals			
River otter *Lutra canadensis*	Protected furbearer	River otters have been observed in Markham Ravine, and it is expected that this species periodically occurs in the Study Area.	This uncommon species occurs along streams and lake borders throughout the Central Valley. Although primarily aquatic, otters will travel several kilometers over land to reach another stream or lake.
Spotted bat *Euderma maculatum*	FSC CSC	Suitable roosting habitat does not occur in the project area. This species is not expected to occur.	The spotted bat occupies a wide range of habitats, from arid deserts and grasslands to coniferous forest. Spotted bats need cliff crevices or caves for roosting.
Greater western mastiff bat *Eumops perotis californicus*	FSC CSC	This species was not observed during previous surveys, but could potentially occur in the project area since suitable roost trees are most likely present.	This species occurs in a variety of arid to semi-arid habitats including grassland, chaparral and deciduous woodlands, and is known to utilize trees as roost sites.

Federal
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FT - Threatened
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FPT - Proposed Threatened
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California Native Plant Society
CNPS 1B – Rare or Endangered in California and elsewhere
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Common Name ***Latin Name***	**Status**[1]	**Potential in Project Area / Results of Previous Studies**	**Notes**
Small-footed myotis bat *Myotis ciliolabrum*	FSC	Could potentially occur. Buildings in project area may provide roost sites. Not observed during previous surveys.	This species utilizes buildings as roost sites and could potentially occur in the project area.
Long-eared myotis bat *Myotis evotis*	FSC	Although not observed during previous surveys, the long-eared myotis bat may utilize buildings for nursery or roost sites and may occur in the project area.	This species occurs in a wide variety of habitats to 2,743 m (9,000 ft) elevation, but prefers coniferous woodlands and forests.
Fringed myotis bat *Myotis thysanodes*	FSC	Although not observed during previous surveys, the fringed myotis bat may occur in the project area.	This species occurs in a wide variety of habitats and may utilize buildings as nursery or roost sites.
Long-legged myotis bat *Myotis volans*	FSC	This species was not observed during previous surveys. Suitable roost trees are most likely present in the project area; as a result, this species could potentially occur.	It is most common in woodland and forest habitats above 1,219 m (4,000 ft).
Yuma myotis bat *Myotis yumanensis*	FSC CSC	Could potentially occur. Buildings in project area may provide roost sites. Not observed during previous surveys.	This species occurs in open forests and woodlands, and its distribution is strongly tied to water sources. Although not observed during previous surveys, buildings in the project area may provide roost or nursery sites and this species could potentially occur.
Pale Townsend's big-eared bat *Plecotus townsendii pallescens*	FSC CSC	Although not observed during previous surveys, the pale big-eared bat could potentially occur in the project area, as existing buildings could be utilized as roost sites.	This species occurs in a variety of habitats.
Pacific western big-eared bat *Plecotus townsendii townsendii*	FSC CSC	Although not observed during previous surveys, Townsend's western big-eared bat may utilize buildings in the project area as roost sites, and consequently could potentially occur.	This species occurs in a variety of habitats

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Common Name ***Latin Name***	**Status**[1]	**Potential in Project Area / Results of Previous Studies**	**Notes**
San Joaquin pocket mouse *Perognathus inornatus*	FSC	Although not observed during previous surveys, the San Joaquin pocket mouse could potentially occur in the project area.	This species occurs in grassland and blue oak savanna.
Birds			
Cooper's hawk *Accipiter cooperii*	CSC	Cooper's hawks have been observed foraging in the project area. No nests were identified during previous surveys; however, nesting habitat does occur on the project site.	This species occurs in woodlands and generally nests in riparian communities.
Sharp-shinned hawk *Accipiter striatus*	CSC	Sharp-shinned hawks have been observed foraging in the project area. Nesting habitat is present in the project area, but no nests have been identified.	This species breeds in coniferous and riparian deciduous forests, and prefers riparian areas.
Swainson's Hawk *Buteo swainsoni*	ST	At least eight Swainson's Hawks were observed in and around the project area during a two-day survey in May 1999. At least three of the eight hawks were observed within the Study Area. The other observations were outside of the project area, but within an approximate 16.1 km (10 mi) radius of the project area.	This species requires fields or grasslands for foraging and breeds in stands with few trees in juniper-sage flats, riparian areas and oak savanna. Swainson's Hawk nesting habitat in, and in the vicinity of, the project area consists of the taller trees in the Coon Creek, Auburn Ravine and Pleasant Grove Creek riparian corridors. The grasslands and fallow agricultural lands that are not planted in rice or orchards provide suitable foraging habitat.
American peregrine falcon *Falco peregrinus anatum*	SE; State Fully Protected, MNBMC	Although some potential foraging habitat occurs in the project area, no nesting habitat is present. This species is not expected to occur in the project area.	This species nests on high cliffs or human-made structures and generally forages near water.
Prairie falcon *Falco mexicanus*	CSC	Prairie falcons have been observed in the project area. No nesting habitat present.	This species forages in dry, open country and nests on cliffs. Foraging habitat for prairie falcon occurs in the project area but no nesting habitat is present.

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California Native Plant Society
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Common Name ***Latin Name***	**Status**[1]	**Potential in Project Area / Results of Previous Studies**	**Notes**
Bald eagle *Haliaeetus leucocephalus*	FT SE State Fully Protected	Some potential foraging habitat is present but no bald eagle nesting habitat occurs in the project area, and this species is not expected to occur.	This species occurs near ocean shorelines, lake margins and rivers where it forages. Bald eagles nest in tall trees or on cliffs near large bodies of water.
Tricolored blackbird *Agelaius tricolor*	FSC CSC MNBMC	Suitable nesting habitat (i.e., freshwater marsh) occurs in the project area. Tricolored blackbirds have been observed in the project area but no nesting colonies have been identified.	This species nests colonially, usually in cattail and tule marshes, but is also known to nest in thistle and blackberry patches and other dense vegetation.
Golden eagle *Aquila chrysaetos*	Federally Protected; CSC, State Fully Protected	Although no nesting habitat is present, golden eagles have been observed foraging in the project area.	This species forages in open country and nests in trees or on cliffs.
Northern harrier *Circus cyaneus*	CSC	Northern harriers have been observed foraging in the project area, and one nest was identified.	Suitable habitat for this species includes coastal salt marsh, fresh-water marsh and open grassland, where it both forages and nests.
White-tailed kite *Elanus caeruleus*	State Fully Protected, MNBMC	White-tailed kites have been observed foraging in the project area, and one nest was identified.	This species occurs in open groves, river valleys, marshes and grasslands.
Double-crested cormorant *Phalacrocorax auritus*	CSC	This species was observed in the project area near Markham Ravine. Nesting habitat occurs in the project area, but no nesting colony has been identified.	This species nests colonially on coastal cliffs and offshore islands, and along lake margins in the interior of the state.
Aleutian Canada goose *Branta canadensis leucopareia*	FT	Wintering (foraging) habitat is present in the project area for Aleutian Canada goose, and this species could occur	This species breeds in the Aleutian Islands and winters in lower latitudes including areas of the U.S. This species generally winters on or near lakes or other bodies of fresh water, often foraging in pastures or fields.

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California Native Plant Society
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Common Name ***Latin Name***	**Status**[1]	**Potential in Project Area / Results of Previous Studies**	**Notes**
Mountain plover *Charadrius montanus*	FTP CSC MNBMC	This species could potentially forage in the project area during the winter.	The mountain plover breeds in short-grass prairie in the mid-western U.S. and winters in semi-arid and arid grasslands and agricultural areas in the southwestern U.S. and Mexico.
Western burrowing owl *Athene cunicularia hypugea*	FSC CSC MNBMC	Although not observed in the Study Area, suitable habitat for the burrowing owl is present, and this species could potentially occur.	The burrowing owl inhabits open, dry grasslands, deserts and scrublands with low-growing vegetation and is commonly observed in agricultural areas. The burrowing owl nests below ground, utilizing abandoned burrows of other species, especially ground squirrels.
Ferruginous hawk *Buteo regalis*	FSC CSC MNBMC	Ferruginous hawks could potentially forage in the project area during the winter.	This species breeds in the Great Plains region from the mid-western U.S. to southern Canada. Ferruginous hawks winter in open grasslands, sagebrush flats, desert scrub and other open country in the southwestern portion of their breeding range and extending into the southwestern U.S. and Mexico.
White-faced ibis *Plegadis chihi*	FSC CSC MNBMC	Although not observed during surveys, the white-faced ibis could utilize marsh habitat within the project area for breeding and/or foraging.	This species occurs in freshwater marsh habitats.
California horned lark *Eremophila alpestris actia*	CSC	Observed on the project site during previous surveys. Suitable nesting habitat present; no nesting observed.	This species nests in grassland.
Grasshopper sparrow *Ammodramus savannarum*	FSC MNBMC	Grasshopper sparrows have been observed in the project area but no nests were identified.	They occur in dense grasslands, lowland plains, and in valleys and on hillsides on lower mountain slopes. The project area could support breeding populations of this species.

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Common Name *Latin Name*	Status[1]	Potential in Project Area / Results of Previous Studies	Notes
Lark sparrow *Chondestes grammacus*	FSC	Although not observed during surveys, suitable habitat for the lark sparrow is present in the project area and this species could occur.	The lark sparrow occurs in pastures, farmlands and roadsides.
American bittern *Botaurus lentiginosus*	FSC, MNBMC	This species has been observed in the project area but no nesting was observed.	They occur in freshwater and slightly brackish marsh habitat, as well as coastal saltwater marsh. Suitable nesting habitat for the American bittern occurs in the project area.
Amphibians			
Foothill yellow-legged frog *Rana boylii*	FSC CSC State Protected	The foothill yellow-legged frog is thought to be extinct in the Sacramento Valley and is not expected to occur in the project area.	This species occurs in shallow, partly-shaded streams and riffles with rocky substrates. This frog prefers substrates that are at least cobble-sized and requires open areas where it can bask on rocks.
Mountain yellow-legged frog *Rana muscosa*	FSC CSC State Protected	No suitable habitat is present in the project area, and this species is not expected to occur.	This species occurs in montane habitats, often in riparian areas.
California red-legged frog *Rana aurora draytonii*	FT CSC State Protected	This species has not been observed in the Study Area and there are no records for the project vicinity. Although suitable habitat for the California red-legged frog is present in the project area, due to the presence of large numbers of non-native predators (i.e., bullfrog, crayfish, largemouth bass, etc.), this species is not expected to occur.	The red-legged frog inhabits lowlands and foothills in or near permanent sources of deep water. The frog prefers ponds or creeks with extensive shoreline vegetation but will disperse 1.6 km (1 mi) or more during and after rain events.
Western spadefoot toad *Scaphiopus hammondii*	FSC CSC State Protected	Suitable habitat for the western spadefoot occurs in the project area, and this species could potentially occur.	Spadefoots occupy a variety of lowland habitats including washes, alluvial fans and river floodplains. Areas of sandy soil and open vegetation are preferred.

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Common Name *Latin Name*	Status[1]	Potential in Project Area / Results of Previous Studies	Notes
California tiger salamander *Ambystoma californiense*	FC CSC State Protected	Suitable habitat for California Tiger Salamander is present in the project area, but the project area is well north of its known range. Consequently, this species is not expected to occur.	This species occurs near water sources in grasslands and open woodland habitats.
Reptiles			
Northwestern pond turtle *Clemmys marmorata marmorata*	FSC CSC State Protected (full species)	Northwestern pond turtles have been observed in the project area.	This species occurs in permanent or nearly permanent bodies of water in a variety of habitats.
California horned lizard *Phrynosoma coronatum frontale*	FSC CSC State Protected	Although not observed during previous surveys, this species occurs in a wide variety of habitats and could potentially occur in the project area.	A variety of habitats.
Giant garter snake *Thamnophis gigas*	FT ST State Protected	Suitable giant garter snake habitat is present in the project area, but the project is well east of its known distribution. The giant garter snake is not expected to occur in the project area.	It occurs in freshwater marsh and low gradient streams and has adapted to similar habitat provided by drainage canals and irrigation ditches.
Fish			
Chinook salmon *Oncorhynchus tshawytscha*	The chinook salmon (*Oncorhynchus tshawytscha*) is an anadromous species that spends part of its life in freshwater and part in salt water. These species spawn in small, freshwater streams where the young remain for a time before migrating to the ocean. Adults return to their natal streams to spawn and complete their life cycle. Chinook salmon require clean gravel beds in which to spawn. The reaches of the drainage's that flow through the project area do not contain suitable spawning habitat for chinook salmon. However, upstream reaches of Auburn Ravine and Coon Creek do contain potential spawning habitat. In addition, drainage's and tributaries within the project area could provide non-natal rearing habitat for salmon fry in early stages of development.		

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Common Name ***Latin Name***	**Status**[1]	**Potential in Project Area / Results of Previous Studies**	**Notes**
Winter-run chinook salmon	FE SE	Winter-run salmon have not been observed in the project area, and are not expected to occur.	
Central Valley spring-run chinook salmon	FT	Spring run salmon have not been observed in the project area, and are not expected to occur.	
Central Valley fall-run chinook salmon	FC	Fall-run chinook salmon have been observed in low numbers in Auburn Ravine, Coon Creek and Ingram Slough.	
Delta smelt *Hypomesus transpacificus*	FT ST	No suitable habitat for this species occurs in the project area and it is not expected to occur.	It occurs in sloughs and backwater areas of the Sacramento-San Joaquin Delta.
Central Valley steelhead *Oncorhynchus mykiss*	FT	The Central Valley steelhead could potentially spawn in upstream reaches of Auburn Ravine or Coon Creek, and consequently could occur in the project area.	Like the chinook salmon, this species is anadromous and migrates from the ocean to its spawning grounds. Its spawning habitat requirements are similar to those of salmon.
Sacramento splittail *Pogonichthys macrolepidotus*	FT CSC	Sacramento splittail has not been observed in the Study Area and is not expected to occur due to absence of suitable habitat.	This species occurs in slow-moving sections of large river systems.
Green sturgeon *Acipenser medirostris*	FSC CSC	It has not been observed in the Study Area and is not expected to occur.	This species is only known to spawn in the Sacramento and Klamath Rivers.
Longfin smelt *Spirinchus thaleichthys*	FSC CSC	This species has not been observed in the Study Area and is not expected to occur.	Longfin smelt occur in sloughs and backwater areas of the Sacramento-San Joaquin Delta.
River lamprey *Lampetra ayresi*	FSC CSC	The river lamprey has not been observed in the Study Area but could potentially occur.	This species occurs in the lower Sacramento River, San Joaquin River, and Russian River, and in coastal streams north of the San Francisco Bay.
Pacific lamprey *Lampetra tridentata*	FSC	This species has been identified in the Study Area.	The Pacific lamprey in known from most coastal streams from Alaska south to southern California.

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Common Name *Latin Name*	Status[1]	Potential in Project Area / Results of Previous Studies	Notes
Invertebrates			
Vernal pool fairy shrimp *Branchinecta lynchi*	FT	Vernal pool fairy shrimp have been identified in vernal pools throughout the project area.	This species inhabits vernal pools in grasslands in the Central Valley and central and southern coast mountains.
Vernal pool tadpole shrimp *Lepidurus packard*	FE	Although not previously recorded in the Study Area, vernal pool tadpole shrimp are known to occur at the west edge of the project and could potentially occur in the project area.	This species inhabits vernal pools and swales in the Sacramento Valley.
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	FT	Elderberry plants occur in the Study Area, and Valley elderberry longhorn beetle could potentially be present.	This species occurs only in the Central Valley in close association with blue elderberry (*Sambucus mexicana*). The larvae of the beetle feed and mature within the stems of elderberry plants with a diameter of one inch or greater.
Plants			
Slender Orcutt grass *Orcuttia tenuis*	FT SE CNPS 1B	Slender Orcutt grass was not recorded during previous focused surveys or during 1999 sampling. There are no known records from the project vicinity.	This species occurs in vernal pools from Sacramento County in the south to Siskiyou County.
Sacramento Orcutt grass *Orcuttia viscida*	FE SE CNPS 1B	Could potentially occur. Associated with Bogg's Lake hedge-hyssop, which was identified on the project site. Not identified during previous surveys.	This species is only known from vernal pools in Sacramento County.
Ahart's dwarf rush *Juncus leiospermus var. ahartii*	FSC CNPS 1B	This species was observed in ungrazed pools in the "A" alignments northwest of Lincoln during previous surveys. Ahart's dwarf rush could potentially occur elsewhere in the Study Area.	Ahart's dwarf rush occurs in vernal pools.

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Common Name ***Latin Name***	**Status**[1]	**Potential in Project Area / Results of Previous Studies**	**Notes**
Hispid bird's-beak *Cordylanthus mollis ssp. hispidus*	FSC CNPS 1B	The closest known occurrence of this species is approximately 6.4 km (4 mi) southeast of the project area. Hispid bird's beak was not observed in the project area during previous surveys, but could potentially occur.	This species occurs in damp, alkaline soils in meadows, playas, and valley and foothill grasslands.
Red Bluff dwarf rush *Juncus leiospermus var. leiospermus*	CNPS 1B	This species was not recorded in the Study Area during previous focused surveys.	This species occurs in margins of vernal pools and in wet places in chaparral and woodland communities.
Bogg's Lake hedge-hyssop *Gratiola heterosepala*	SE CNPS 1B	Bogg's Lake hedge-hyssop was observed in one vernal pool east of the "A" alignments and could occur elsewhere within the Study Area.	This species occurs in vernal pools and freshwater marshes and swamps.
Dwarf downingia *Downingia pusilla*	CNPS 2	Dwarf downingia was observed in the deeper vernal pools throughout the Study Area.	This species occurs in vernal pools and roadside ditches in valley and foothill grasslands.
Big-scale balsam root *Balsamorhiza macrolepis var. macrolepis*	CNPS 1B	Could potentially occur. Not identified during previous surveys.	This species occurs in valley and foothill grassland habitat.
Legenere *Legenere limosa*	FSC CNPS 1B	Legenere was not recorded in the Study Area during previous focused surveys but has been recorded in the general vicinity.	This species occurs in wet areas and vernal pools.
Valley oak *Quercus lobata*	Protected by Senate Concurrent Resolution No. 17		Riparian areas and isolated stands.

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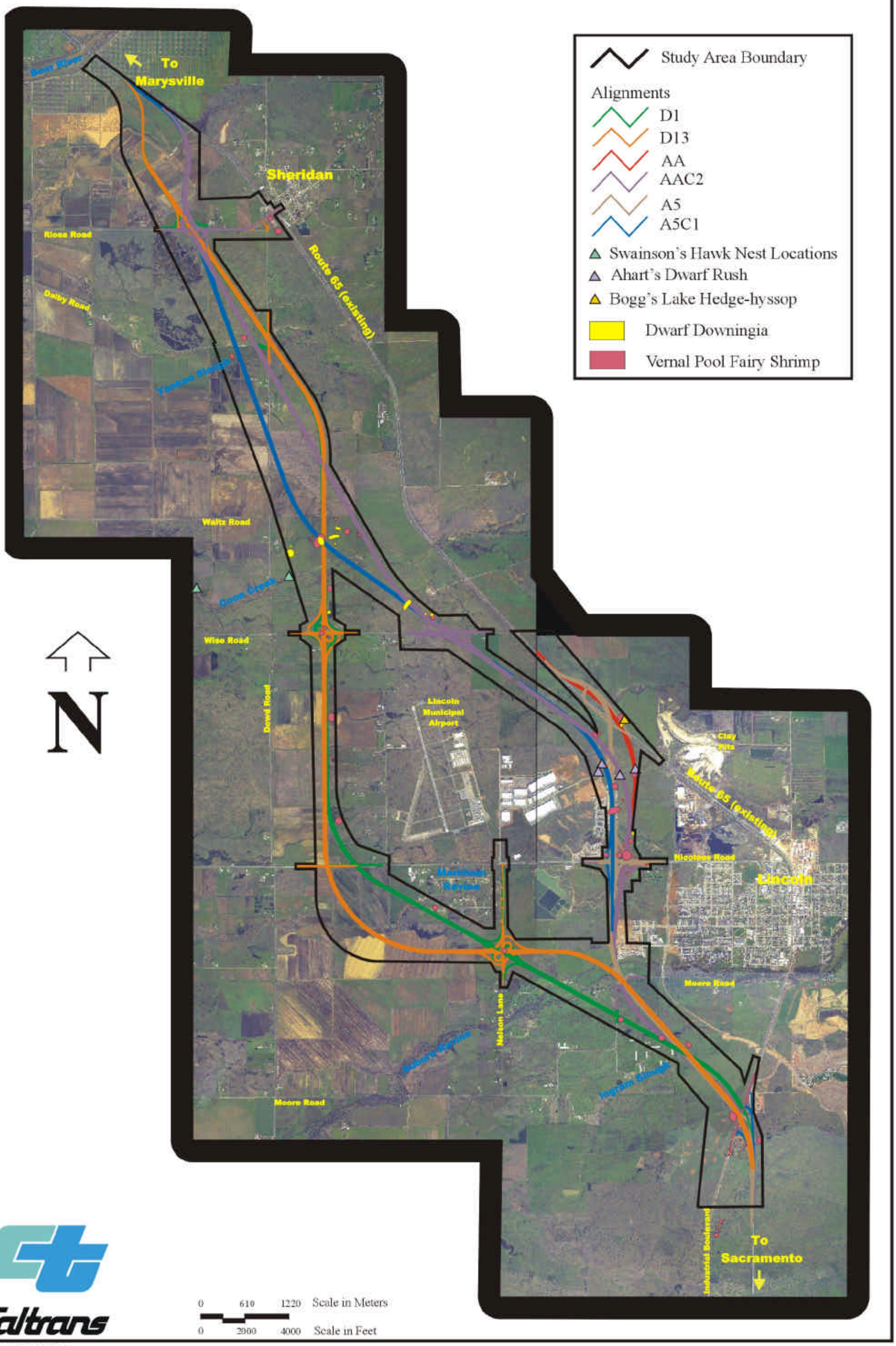


Caltrans

PCT830)

Mapping/GIS - LSA Associates, Inc., 1999

Figure 3-16

Special Status Species Locations

3.7.6 Wetlands/Jurisdictional Waters Assessment

Wetlands and non-wetland waters (streams and lakes) that are subject to California Department of Fish and Game and/or U.S. Army Corps of Engineers jurisdiction present in the project study area are summarized in Table 3-21.

California Department of Fish and Game (CDFG)

CDFG, through provisions of Sections 1601-1603 of the California Administrative Code, is empowered to issue agreements for any alteration of a river, stream or lake where fish or wildlife resources may be adversely affected. The presence of a channel bed and banks, and at least an intermittent flow of water define streams (and rivers). The agreement generally includes, within the jurisdictional limits of streams and lakes, any riparian habitat present. In most situations, wetlands associated with a stream or lake would fall within the limits of riparian habitat.

For purposes of this evaluation, CDFG waters include mixed riparian forest habitat associated with Auburn Ravine and Coon Creek, willow scrub and marsh habitat (most of which is associated with drainage's or ponds) and other waters (primarily ponds). Vernal pools and swales are not included, as these features are not regulated by CDFG.

The project will result in the alteration of lakes and streambeds subject to CDFG regulation. Consequently, a Section 1601 Streambed Alteration Agreement will be required. Notification to CDFG is generally made after the environmental process is complete and final plans are being prepared.

Table 3-22 Jurisdictional Waters Occurring in the Study Area

Jurisdictional Waters	Area *(acres in italics)*	Percentage of total wetlands
ACOE – Wetlands		
Willow scrub	11.0 ha (*2.8 ac)*	1.1%
Freshwater marsh	56.0 ha (*138.3 ac)*	55.9%
Vernal marsh	10.0 ha *(24.7 ac)*	10.0%
Vernal pool	31.0 ha (*76.5 ac)*	30.9%
Vernal swale	2.1 ha (*5.2 ac)*	2.1%
Total - ACOE Wetlands		100.2 ha (*247.5 ac)*
ACOE – Non-wetlands		11.4 ha (*28.2 ac)*
Total - ACOE Wetlands and Non-wetland Waters		111.6 ha (*275.7 ac)*
CDFG Jurisdictional Waters (Estimated)		91.1 ha (*225.2 ac)*

U.S. Army Corps of Engineers (ACOE)

Creeks, marshes, vernal pools and other waters within the Study Area are subject to ACOE permitting authority under Section 404 of the Clean Water Act. A Section 404 permit from the ACOE is required for discharges of dredged or fill material into vernal pools and swales, creeks, marshes and other regulated waters of the U.S. These discharges will occur as a result of roadbed construction, bridge and culvert construction and other similar activities. Based on preliminary impact determinations, an individual 404 permit will likely be required. Riparian communities may not fall under ACOE jurisdiction unless they are below the ordinary high water mark (OHWM) or classified as wetlands.

Both NEPA and Section 404 of the Clean Water Act require a thorough evaluation of project alternatives as part of the review process. NEPA regulations require that an EIS "rigorously explore and objectively evaluate all reasonable alternatives." EPA regulations, which apply to ACOE permitting authority under Section 404, stipulate that only the least environmentally damaging practicable alternative (LEDPA) may be permitted. The NEPA/404 Integration MOU was adopted in 1993 in order to improve interagency coordination and integrate the NEPA and Section 404 procedures. Section 404(b)(1) requires an Alternatives Analysis in order to document the evaluation and identification of the LEDPA.

The project is subject to the NEPA/404 Integration Memorandum of Agreement (MOU); consequently, coordination with the ACOE regarding permitting requirements has been ongoing for some time. Documentation of the NEPA/404 coordination can be found in Chapter 7. A draft Alternatives Analysis, pursuant to Section 404(b)(1) requirements, also has been prepared, which is available for review at the The Department's District 3 Sacramento office, 2800 Gateway Oaks Dr. Sacramento, CA.

California Regional Water Quality Control Board

As part of the 404 permitting process, a Section 401 Certification from the Regional Water Quality Control Board is required. Application to the Regional Board is generally made after the environmental document is complete. A 401 Certification will be required before the 404 permit is considered valid.

Federal Wetland Delineation

The wetland delineation consists of a review and updating of the previous wetland delineation that was completed in 1994. The delineation is preliminary and intended to support the evaluation of project alternatives. Once an alignment is selected, a final delineation of wetlands and other waters will be prepared and provided to the ACOE for verification. In order to be considered a jurisdictional wetland by the ACOE and therefor

subject to regulatory authority under Section 404 of the Clean Water Act, an area must possess three wetland characteristics: hydrophytic vegetation, wetland hydrology and hydric soils. Wetland vegetation, hydrology and soils each have specific criteria that must be satisfied in order for that particular wetland characteristic to be met. There are, however, exceptions to requirement of satisfying all three parameters, especially for atypical wetlands and "problem wetlands."

Wetland Value Assessment

Wetlands and other waters in the Study Area provide a variety of functions and values typical of these aquatic ecosystems. The objective of the wetland value assessment is to provide a useful means for comparing project alternatives based on the relative quality of wetland resources present.

There are two primary wetland types in the Study Area: vernal pool/swale complexes and freshwater marsh. Separate evaluation factors were developed for each type. The acreage of other wetland types such as willow scrub and vernal marsh is relatively limited; consequently, a value assessment of these types was not performed. Locations of the wetlands evaluated are shown in Figure 3-17.

Vernal Pool/Swale Complexes

These wetlands are characterized by a seasonal cycle of flooding and saturation during the winter and early spring and desiccation during the summer and fall. Most vernal pool wetlands support specialized plant and invertebrate communities adapted to this hydrologic regime. Vernal pools often occur in complexes consisting of a number of pools interconnected by swales. The wetland value assessment for the vernal pool complexes depicted in Figure 3-17 is presented in Table 3-23.

Figure 3-17

Source: Mapping/GIS - LSA Associates, Inc., 1999
Base Photo - Andregg, Inc,. March 1999

Wetlands and Other Regulated Water

Caltrans

0 305 610 Scale in Meters

0 1000 2000 Scale in Feet

Study Area Boundary

Alignments

D1

D13

AA

AAC2

A5

A5C1

Vernal Marsh

Vernal Pool

Vernal Swale

Great Valley Willow Scrub

Valley Freshwater Marsh

Open Water

Nonwetland Drainages

Wetland Data Point

Bear River

To Marysville

Riosa Road

Sheridan

Daiby Road

Route 65 (existing)

Yankee Slough

Data Point #332

Data Point #331

Data Point #88

Data Point #83

Waltz Road

Coon Creek

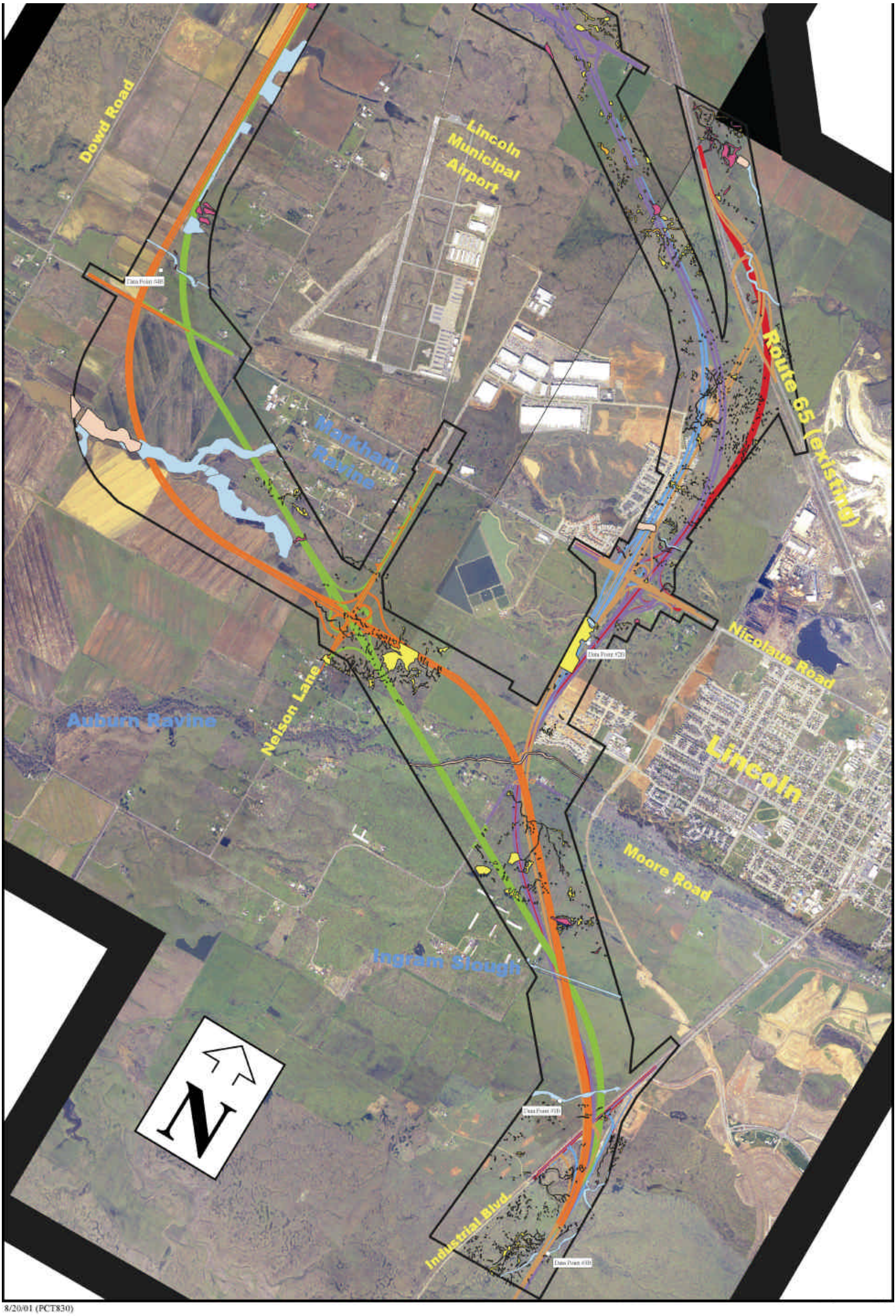
Data Point #323

Data Point #321

Wise Road

Dowd Road

N



8/20/01 (PCT830)

Source: Mapping/GIS - LSA Associates, Inc., 1999
Base Photo - Andregg, Inc,. March 1999

Figure 3-17b
Wetlands and Other Regulated Waters

Evaluation Factors. Factors considered most important for vernal wetlands, generally based on the criteria developed by U.S. Fish and Wildlife Service (FWS), include the following:

Size of vernal pool complex - larger complexes are more likely to exhibit a greater diversity of soils, vernal pool types, plant species, etc. and are more resistant to disturbances. Larger complexes are generally considered to have greater value than small complexes.

Vernal pool density - vernal pool complexes with more wetland acreage (i.e., higher pool density) are considered to have greater value.

Vernal pool type - less common vernal pool types (i.e., volcanic mudflow vernal pool complexes) are considered to have greater value.

Occurrence of special status species - vernal pools supporting State or Federally listed or proposed species, or species with some other special status, are considered to have greater value.

Condition of wetlands - the general condition of the site and level of degradation. Vernal pool complexes in good condition are considered to have higher value.

Table 3-23 Wetland Value Assessment for Vernal Pool Complexes

Complex #	Location	Pool Density[1]	Complex Size[2]	Vernal Pool Type	Special Status Species		Condition	Comments
					Observed in Complex	Potentially Occurring		
All Alignments (A5C1, AAC2, D1, D13)								
1	South end of Study Area	2.2 %	120-400 ha *300-1000 acres*	Northern hardpan and volcanic mudflow	vernal pool fairy shrimp, CA linderiella	vernal pool tadpole shrimp, dwarf downingia, Ahart's dwarf rush, Bogg's Lake hedge-hyssop, legenere	Good	Large, diverse, relatively undisturbed complex; includes some tracts of high quality and density pools (outside of Study Area); all alignments cross the east edge of complex, which is moderately disturbed (fair condition)
2	North of Ingram Slough, adjacent to Moore Road	3.3 %	40-120 ha *100-300 acres*	Northern hardpan	Vernal pool fairy shrimp, CA linderiella	vernal pool tadpole shrimp, dwarf downingia, Ahart's dwarf rush, Bogg's Lake hedge-hyssop, legenere	Fair	Smaller complex surrounded by development and disturbance; has some very large pools; all alignments bisect this complex.

Complex #	Location	Pool Density[1]	Complex Size[2]	Vernal Pool Type	Special Status Species		Condition	Comments
					Observed in Complex	Potentially Occurring		
7	North of Coon Creek	7.0 %	40-120 ha *100-300 acres*	Northern hardpan	Vernal pool fairy shrimp, CA linderiella, dwarf downingia	vernal pool tadpole shrimp, Ahart's dwarf rush, Bogg's Lake hedge-hyssop, legenere	Fair	Smaller complex with high density of pools; generally surrounded by agricultural land; all alignments bisect this complex.
8	Yankee Slough area	1.7 %	> 400 ha *1000 acres*	Northern hardpan	Vernal pool fairy shrimp, CA linderiella	vernal pool tadpole shrimp, dwarf downingia, Ahart's dwarf rush, Bogg's Lake hedge-hyssop, legenere	Fair	Very large complex, extending well east of Study Area; includes scattered development and agricultural uses; some tracts of high quality pools remain; all alignments cross west edge of complex.
Eastern Corridor (A5C1, AAC2)								
5	West of clay pits and Sierra Pacific, adjacent to SR 65	2.9 %	40-120 ha *100-300 acres*	Northern hardpan and Volcanic mudflow	vernal pool fairy shrimp, CA linderiella, dwarf downingia, Ahart's dwarf rush, Bogg's Lake hedge-hyssop	vernal pool tadpole shrimp, legenere	Good	Diverse complex; includes some areas of high quality pools; complex is crossed by existing Rt. 65 and residential development is encroaching on the west; eastern alignments bisect this complex
6	Airport area	3.9 %	> 400 ha *1000 acres*	Northern hardpan	vernal pool fairy shrimp, CA linderiella, dwarf down-ingia	vernal pool tadpole shrimp, Ahart's dwarf rush, Bogg's Lake hedge-hyssop, legenere	Fair	Large, diverse complex; although affected by extensive development, including airport, some large tracts of high quality pools remain; eastern alignments bisect east edge of this complex
Western Corridor (D1, D13)								
3	North of Auburn Ravine, adjacent Nelson Ln.	17.2 %	< 40 ha *100 acres*	Northern hardpan	vernal pool fairy shrimp, CA linderiella	vernal pool tadpole hrimp, dwarf downingia, Ahart's dwarf rush, Bogg's Lake hedge-hyssop, legenere	Good	Small, isolated complex with very high pool density; relatively undisturbed; complex bisected by both western alignments
4	Markham Ravine area	7.0 %	< 40 ha *100 acres*	Northern hardpan	vernal pool fairy shrimp, CA linderiella	vernal pool tadpole shrimp, dwarf downingia, Ahart's dwarf rush, Bogg's Lake hedge-hyssop, legenere	Poor	Small complex includes several residences and is generally degraded; D1 alignment crosses western portion of this complex

[1] Density of overall complex estimated based on density within Study Area.
[2]Total complex size, including portions extending outside of Study Area.

Analysis

The eight vernal pool complexes vary widely in the attributes considered in this evaluation. Complex size ranges from about 50 acres (Complex 4) to over 2,000 acres (Complex 8). Vernal pool density ranges from 1.7 % (Complex 8) to 17.2 % (Complex 3), average density is 5.7 %. Complex condition ranges from good (Complexes 1, 3 and 5) to poor (Complex 4). All of the complexes showed some level of disturbance; consequently, none were considered to be in excellent condition.

In order to compare the various complexes, they were assigned one of three relative value categories (High, Moderate or Low) based on the factors described above.

Complex 4 is clearly the lowest value complex in the Study Area due to its small size and poor condition. Complex 5 is probably the highest value due to the presence of two pool types and large number of observed special status species. Most of Complex 1, which also includes two pool types, is outside of the Study Area and has not been surveyed for special status species.

Freshwater Marsh Complexes

Freshwater marsh is the most abundant wetland type in the Study Area. This habitat is highly variable in configuration, habitat composition and overall quality.

Evaluation Factors. Factors considered most important for freshwater marsh wetlands include the following:

Size of marsh complex - larger complexes are more likely to exhibit a diversity of habitat types, be resistant to disturbances and provide greater opportunities for wildlife use.

Complexity of habitat - marsh wetlands supporting several habitat types (e.g., open water, emergent wetlands, willow scrub, overstory canopy) are considered to have greater value.

Occurrence of special status species - wetlands supporting State or Federally listed or proposed species, or species with some other special status, are considered to have greater value.

Condition of wetlands - the general condition of the site, including the diversity of wetland and upland habitats and level of degradation. Wetlands in good condition are considered to have higher value.

The value assessment for freshwater marsh is presented in Table 3-24. The following ratings were assigned to seven freshwater marsh complexes:

Complex Size: Actual wetland area

Habitat Complexity: High, Moderate or Low

Special Status Species: Species recorded or expected to occur

Condition: Excellent, Good, Fair or Poor

Table 3-24 Wetland Value Assessment for Freshwater Marsh

Wetland No.	Location	Wetland Acreage[1]	Habitat Complexity	Potential Special Status Species	Condition	Comments
All Alignments						
5	Coon Creek	0.7 ha 1.9 ac	Moderate	River otter, double-crested cormorant, northwestern pond turtle, chinook salmon, Central Valley steelhead, river lamprey, Pacific lamprey	Fair	Herbaceous marsh occurs in small, discontinuous patches along low terraces of creek; subject to regular scour; wildlife value enhanced by presence of riparian community
6	Yankee Slough	3.6 ha 9.0 ac	Moderate	Tricolored blackbird, white-faced ibis, American bittern, northwestern pond turtle	Fair-Good	Primarily herbaceous marsh with cattail and tule thickets interspersed with open water and willow scrub
Eastern Corridor (A5C1, AAC2)						
1	Markham Ravine, west of Sierra Pacific	0.3 ha 0.7 ac	High	Tricolored blackbird, double-crested cormorant, Aleutian Canada goose, white-faced ibis, American bittern, northwestern pond turtle	Good	Marsh consists of a small pond and adjacent wetlands; high diversity with open water, mudflats, cattail/tule thickets and willow/riparian scrub
2	Adjacent to existing SR 65, west of clay pits	1.7 ha 4.1 ac	Low	Tricolored blackbird, northwestern pond turtle	Fair	Small, ephemeral marsh associated with low gradient drainage; minimal habitat development
Western Corridor (D1, D13)						
3	West end of Markham Ravine	22.4 ha 55.2 ac	High	River otter, tricolored blackbird, double-crested cormorant, Aleutian Canada goose, white-faced ibis, American bittern, northwestern pond turtle	Good to Excellent	Large marsh complex including a significant amount of open water; high diversity and good habitat development
4	West of airport	11.3 ha 28.0 ac	Low	Tricolored blackbird, northwestern pond turtle	Fair	Marsh consists of low-lying areas that impound water due to blockage by ricefield berm; limited habitat development

Wetland No.	Location	Wetland Acreage[1]	Habitat Complexity	Potential Special Status Species	Condition	Comments
7	Duck ponds, Dowd and Riosa Rds.	19.7 ha 48.6 ac	High	Tricolored blackbird, double-crested cormorant, Aleutian Canada goose, white-faced ibis, American bittern, northwestern pond turtle	Good	Marsh primarily consists of man-made duck ponds; total area of marsh estimated at over 200 ac; this marsh is largely avoided by the western alignments

[1]Acreage within Study Area.

Analysis

Similar to the vernal pool complexes evaluated previously, the seven marsh complexes vary widely in the attributes considered in this evaluation. Wetland acreage within each complex ranges from less than one acre (Wetland 5) to over 55 acres (Wetland 3). Complexity ranges from low to high, and condition ranges from fair to good/excellent. All of the complexes showed some level of disturbance.

In order to compare the various marsh complexes, they were assigned to one of three value categories (High, Moderate or Low) based on the factors described above.

Table 3-25 Value Assessment of Marsh Complexes

High Value:	Marsh 3 - relatively large marsh complex; high diversity and good condition; habitat for several special status species Marsh 7 - very large marsh complex, most of which is outside Study Area; high diversity; good condition; habitat for several special status species
Moderate Value:	Marsh 1 - small in area and close to development but otherwise high quality due to complexity and condition of habitats; potential habitat for several special status species Marsh 6 - relatively small and linear, but with pockets of good herbaceous marsh habitat
Low Value:	Marsh 2 - small in area with low complexity, possibly ephemeral water supply and located close to development Marsh 4 - moderately large marsh complex, but with low complexity and somewhat degraded; limited habitat for special status species Marsh 5 - Although Coon Creek supports a valuable riparian community and provides high quality wildlife habitat, the marsh wetlands associated with the creek are small and discontinuous

Marsh 2 is the lowest value complex in the Study Area due to its small size, limited complexity and fair condition; Marsh 4 is similar but significantly larger. Marsh 3 is probably the highest value in the Study Area due to its large size, diversity of habitats and good to excellent condition.

3.8 CULTURAL RESOURCES

The National Historic Preservation Act of 1966, as amended, established the Advisory Council on Historic Preservation (ACHP) and set precedents and policies for the protection and preservation of historic and cultural resources. Section 106 of this Act mandates that Federal agencies with jurisdiction over a proposed undertaking consider the effects of that project upon any property that is included in, or eligible for inclusion in the National Register of Historic Places (NRHP).

In order to ensure that the requirements of Section 106 are met, FHWA follows procedures contained in 36 CFR 800, a set of regulations issued by the ACHP. Cultural resource investigations performed pursuant to these statutes are documented in a Historic Property Survey Report (HPSR), copies of which are on file at The Department, District 3 Sacramento, 2800 Gateway Oaks, Sacramento, CA 95833.

Documentation of the Department's coordination with the State Historic Preservation Office can be found in Chapter 7.

The cultural resource evaluation begins with the delineation of the Area of Potential Effects (APE). The APE is generally defined as the geographic area or areas within which an undertaking may cause changes in the character or use of historic properties, if any such properties exist. The APE for this project consisted of the existing and proposed right-of-way. Field reviews and surveys of the APE, as well as archaeological record checks and examinations of historic records and archives, were conducted by qualified Department specialists. The following inventories and archives were consulted in preparing the survey reports.

- *National Register of Historic Places,* Through December 1989.
- *California Historical Landmarks,* 1976
- *California Inventory of Historic Resources,* 1976
- *History of Placer County, California with Illustrations and Biographical Sketches of it's Prominent Men and Pioneers*, Thompson and West, Oakland, 1882
- *History of Placer and Nevada Counties, California*, by W.B. Lardner, and M. J. Brock, Historic Record Company, Los Angeles, 1924
- *California Place Names*, by E.G. Gudde, University of California Press, Berkeley, 1967.
- *Historic Spots in California*, by M. B. Hoover, H.E. Rensch and E.G. Rensch, Stanford University Press, Stanford. 1966.

- *Gold Districts of California*, by W.B. Clark, California Division of Mines and Geology, Bulletin 193, Sacramento, CA 1979
- *California Archaeological Inventory*, North Central Information Center, California State University, Sacramento
- *Grantee/Grantor Books* 1-8 Placer County Recorders Office, Auburn.
- *Deed Books*, E, F, G, H, I, K, M, P, Q, EE, MM, QQ, 51, 54 and 168 on microfilm, Placer County Recorders Office, Auburn.

In addition, a number of people and entities were interviewed and contacted via mail for information supporting the HPSR, including the Placer County Historical Society, the Placer County Museum, the California Native American Commission, Northern Sierra Indians, Inc., Placer Indian Association and others.

Approaches to resource identification and evaluation varied with respect to archeological (both historic and prehistoric) and historic architectural properties. Archeological properties were subject to "survey level" treatment, i.e., boundaries and features mapped, surface assemblages characterized and disturbances noted. No subsurface testing or controlled surface collections were attempted. As such, assessments of site structure, chronology, integrity etc. must be viewed as preliminary providing more direction for further evaluation, rather than a definitive statement of significance. In contrast, the historic architectural survey results are more comprehensive, incorporating complete field and archival documentation and ultimately NRHP recommendations for each resource.

3.8.1 Prehistoric Resources

The archaeological surveys identified eleven pre-historic archaeological properties within the Study Area, two of which required further study. In addition, four archaeological properties immediately adjacent to the project area were investigated.

The two prehistoric archaeological sites requiring further study which are mentioned in the previous paragraph included some midden deposit, concentrations of lithic debris and flaked and ground stone tools. Further study will be needed to determine if these sites would be eligible for listing in the NRHP. Information on these sites can be obtained by contacting The Department of Transportation, Environmental Planning, Cultural Resources, District 3, 2800 Gateway Oaks Dr., Sacramento, CA 95833.

3.8.2 Historic Period Resources

The Historic Architectural Survey Report (HASR) and the supplemental HASR (completed in 1989 and 1990) evaluated a total of eight properties, two of which were

determined to be potentially eligible for listing in the NRHP: the Fickewirth Ranch and the Sheridan Cash Store (a.k.a. Country Store). Two additional properties in the vicinity of the project have been listed on the National Register since 1990; the Lincoln Public Library at 590 Fifth Street (listed 12/10/90) and the Women's Club of Lincoln at 499 E Street (listed 5/30/01). Both of these buildings are within the town of Lincoln and not directly affected by the project.

In the Supplemental HASR (dated August 1990), 39 properties were treated in accordance with the December 20, 1989 "Memorandum of Understanding Regarding Evaluation of Post-1945 Buildings, Moved Pre-1945 Buildings, and Altered Pre-1945 Buildings." Of the 39 properties, 21 do not predate 1957 and thus require no further study. The remaining eighteen properties predate 1957 and need to be formally evaluated. The application of "The Department's Interim Policy for the Treatment of Buildings Constructed in 1957 or Later" will be documented in a statement of findings in the Supplemental HASR that will update the August 1990 Supplemental HASR.

Fickewirth Ranch

The property consists of a residence, tankhouse, windmill, long shed, timber-framed hay barn, one-time blacksmith shop and several small sheds. The buildings on the property have been maintained in their original form with little or no modification. It is one of the oldest intact residences remaining in the local area. This property appears to meet the criterion for inclusion in the National Register under Criterion C-1, as an embodiment of its time, period and method of construction. All of the structures on the property, in their form and function contribute to this determination. The State Historic Preservation Officer (SHPO) concurred with this finding on October 21, 1991.

Country Store

The Sheridan Cash Store, presently called the Country Store, is a one story, six course American Bond Brick structure that sports an Italianate Commercial False Front consisting of a stepped parapet with a denticular cornice, which hides a corrugated metal gable roof. It is the sole survivor of a fire that destroyed the town in 1891. This property appears eligible for inclusion in the NRHP under Criterion A for it's association with Sheridan's economic development and under Criterion C. It was designated a Point of Historical Interest by the California Historic Resources Commission on August 3, 1990.

3.9 HAZARDOUS WASTE

An Initial Site Assessment (ISA) was performed for property within the Study Area to assess the potential for encountering hazardous materials during the construction of the

project. The subject parcels were determined to have a low to moderate potential for environmental impairment considering the absence of factors or situations that can naturally cause potential environmental concerns. The factors being taken into account are: industrial manufacturing activities within the alignment areas, suspect asbestos containing materials, industrial wastewater generation, recorded or observed cases of hazardous wastes/materials mismanagement practices on the subject property, pesticide use and potentially PCB-containing electrical devices.

Evaluation of other factors such as neighboring land use and the presence of listed hazardous waste sites potentially within one mile of the subject area gave clear indications that the subject area has a low potential for environmental risk.

The following databases were consulted:

Table 3-26 Databases Searched

Name of Database	Types of Records	Agency
Contaminated Environmental Response Compensation and Liability Information System (CERCLIS)	Contaminated Sites under CERCLA (1980)	US EPA
National Priorities List (NPL)	Federal Superfund sites	US EPA
Liens	Filed Notices of Superfund liens	US EPA
Cortese	Hazardous Waste and Substances Site List	CAL EPA
CAL-Sites/Annual Work Plan (AWP)	Contaminated sites listed on the Annual Work Plan, cleanup sites under the Bond expenditure Plan	CAL EPA
Border Zone Properties (BZP)	Sites designated as Border Zone Properties (Deed restrictions)	CAL EPA
CAL-Sites/Abandoned Site Program Information System (ASPIS)	Actually or potentially contaminated sites under the Abandoned Site Program	CAL EPA
Hazardous Waste Information System (HWIS)	Hazardous Waste Generators, treatment Storage and Disposal Facilities	California Integrated Waste Management Board
Solid Waste Information System (SWIS)	Active and Inactive Sanitary landfills and Disposal Facilities	California Integrated Waste Management Board
Leaking Underground Storage Tanks (LTANK), Underground Tanks (UTANK)	Reported leakage of hazardous substances from underground storage tanks	California Regional Water Quality Control Board, Central Valley Region
Annual Work Plan (AWP)	All verified hazardous waste sites that are or will be targeted for abatement by the CAL EPA under	Dept. of Toxic

Name of Database	Types of Records	Agency
	the Hazardous Substance Cleanup Bond Act of 1984 and the Hazardous Substances Account.	Substances Control
Leaking Underground Storage Tanks (LUST)	Leaking Underground Storage Tanks	California Regional Water Resources Control Board

The following agencies were contacted regarding underground and above-ground storage tanks, landfills and hazardous waste sites:

- Placer County Department of Public Works Special Districts Division
- Placer County Dept. of Public Works Division of Environmental Health.

In addition, the following sources were reviewed in order to identify potential sites of concern:

- Voluntary Registered Heating and Agricultural Tanks Exempt from California Tank Regulations, as of September 25, 1985 and
- Hazardous Materials Handlers, UST and Site Litigation (Open/Active/Closed/Temporarily Closed Facilities) as of June 30, 1994.

The following parcels were determined to warrant further investigation and are shown in Figure 4-7 in chapter 4:

Table 3-27 Parcels Possibly Requiring Further Investigation

Assessors Parcel Number	Problem
021-380-001& 002	Surface staining under some above-ground storage tanks.
021-380-056	Surface staining under a waste oil container.
021-150-076	Potential leaking underground storage tank.
020-150-030	Listed on the SPL[1] list.
021-262-001, 019-320-002,021-262-004, 021-033-007,21-035-007	Underground storage tanks located on parcels.
021-020-009, 021-020-025	Abandoned farm equipment and vehicles covered the soil. Removal of equipment may reveal impacts that were not clearly visible during initial investigation.
021-262-012	Municipal Sewer Treatment Plant.
019-29-010, 019-29-019, 020-150-030	Storage and use of hazardous materials such as pesticides and fuel.
021-056-016	Collection of discarded batteries.
Adjacent to 021-020-008	Questionable disposal practices by WECO Aerospace and Infinity Aviation.

[1] The State Priority List (SPL) is the state equivalent of the Federal Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS list.)

In addition; any building or other structure to be acquired will be evaluated for the presence of asbestos. Due to the agricultural nature of the area, many of the parcels contain above-ground storage tanks, which will be investigated.

Due to the former use of waste oil (potentially containing PCB's) to control dust in railroad right-of-way, the railroad areas within the alignment could contain PCB affected soil.

3.10 VISUAL IMPACTS

Improvement of the visual quality of highways, as with many aspects of the environment, has been a matter of increasing concern in recent years. The Federal-Aid Highway Act of 1968 states that "a special effort should be made to preserve the natural beauty of the countryside." Similarly, NEPA states that "it is the continuous responsibility... to assure for all Americans safe, healthful, productive, aesthetically and culturally pleasing surroundings."

A Visual Impact Assessment Report was completed to comply with this policy, and is available for review at the Department of Transportation District 3, Sacramento office, 2800 Gateway Oaks Dr., Sacramento. The following information was summarized from that report.

3.10.1 Definition of the Visual Assessment Study Area

Definition of the Study Area and all identification, inventory and evaluation of visual resources was accomplished by field inspection, including photography and visual surveys of the site. The Study Area's visual analysis includes that area from 0 to 4.8 km (0-3 mi) from the location of all alignments, and contains both natural elements and built environments. The majority of these areas are undeveloped and comprise a rural visual environment. A smaller area is influenced by urban development around Lincoln and Sheridan.

3.10.2 General Description of Existing Landscape

Terrain within the Study Area is generally flat with rolling grasslands and elevations range from 26 to 61 m (85 to 200 ft). Open grasslands dominate the area. Perennial and intermittent creeks lined with riparian vegetation (including oak stands) traverse from east to west. The general region is rural with vistas of wide, open, non-native grasslands dotted with seasonal wetlands and occasional oak stands. Rural areas tend to be agricultural with individual homes and ranches, whereas Lincoln and Sheridan have developed residential and industrial areas.

3.10.3 Visual Assessment Units

To provide a focused analysis, the Study Area is divided into three distinct visual assessment units, each approximately 6.4 km (4 mi) long (see Figure 3-18). The South Lincoln visual assessment unit, from Orchard Creek to Auburn Ravine, is rural but planned for mixed-use development (see Figure 3-19). The Lincoln visual assessment unit ranges from Auburn Ravine to Coon Creek, including the City of Lincoln and area to the west. This unit has the majority of existing and proposed development (see Figure 3-20). The third unit is the Sheridan visual assessment unit, which contains rural areas from Coon Creek to the Bear River, just north of Sheridan. Extensive development is not planned for this unit (see Figure 3-21). These three visual assessment units provide the basis for assessing impacts of each proposed alignment. To provide an overview of the existing visual landscape, and draw attention to any outstanding visual resources, these three visual units are described briefly below.

Similarities are common throughout all three visual assessment units. Due to relatively flat terrain, the scale of the project area seems huge. Wide, expansive views and the almost never-ending sky panorama makes trees, buildings, vehicles and other elements on the ground seem relatively tiny. Due to this large scale, there is a lack of variation. This continuous thread of non-dramatic visual elements occasionally appears monotonous. Non-native grassland prevails and basic visual elements, such as creeks and related trees, flatlands and rolling foothills, repeat throughout the project area, leading to a lack of drama and variety. However, in scattered locations, glimpses of the Sierra Nevada and the Sutter Buttes can be seen in the background.

South Lincoln Visual Assessment Unit

Terrain east of the Lincoln Bypass' southerly connection with existing SR 65 consists of rolling hills. Middle ground views are prevalent, such as Telegraph Hill to the east. Located adjacent to Orchard Creek is the most dominant foothill with an elevation of 119 m (390 ft). Even though it is not visible to northbound travelers, southbound travelers have outstanding views of this undeveloped, pristine foothill. Background views, including crests of the Sierra Nevada, can be seen from a few locations. Trees associated with Auburn Ravine are visible on the horizon to the north and west. Remaining terrain is generally flat with occasional depressions around Orchard Creek. Since Orchard Creek does not support a heavily tree-lined riparian habitat, views extend through it to the southern horizon line. The southern horizon line on clear days is not visually appealing. Radio towers provide stark vertical accents against horizontal grasslands. The Placer County Sanitary Landfill with its huge towering mounds of refuse will be visible to southbound travelers and detracts from the visual quality. Equally

obtrusive is the Ultrapower Rocklin Biomass Power Plant. Tall machinery and towering smokestacks provide man made dominance over the surrounding middle-ground rural agricultural areas. At night, this well-lit machinery and processing equipment provide a mass of light, accenting the horizon. This same area has many high intensity industrial developments such as auto wreckers, junkyards, silica plants, concrete mix distributors, and transport truck storage yards that lessen the visual quality and character.

Ingram Slough, a freshwater marsh, passes through the South Lincoln visual assessment unit and contains occasional tall trees and grasses. There are two small areas of oak woodland near Auburn Ravine with less than 4 ha (10 ac) each; one is between Auburn Ravine and Moore Road, and the other parallels the southern side of Moore Road. Great valley oak riparian forest follows Auburn Ravine its entire length within this visual unit. Vernal pools are prevalent throughout non-native grasslands and agricultural land.

This visual unit also contains several home sites and a large ranch. Home sites are primarily located adjacent to Moore Road. Aitken Farms is a large turkey ranch consisting of ten extremely large rectangular buildings and some smaller buildings. Cattle are present throughout the area. Horse ranches and extensive rice fields are scattered throughout the southwestern side of this visual assessment unit. However, future development within the south Lincoln visual assessment unit will change the visual character dramatically. Recent developments include Three-D, Lincoln Crossing, Twelve Bridges and Sterling Pointe.

Viewer Quality

Overall quality of the existing visual setting for the South Lincoln visual assessment unit is good. Topography offers some vertical relief by contrasting rolling hills with flat areas. Vegetative and wetland features are vivid in wet months of the year. Home sites are sparse and do not disrupt the integrity of the setting. General visual effects of ranches can improve a visual environment. However, the non-historic structures of Aitken Farms decrease intactness due to their large rectangular size and quantity. In addition, large piles of turkey manure, compost and topsoil (at the bend of Moore Road, near the Aitken Farms entrance) disrupt intactness of the area since they do not blend with nearby natural features.

Lincoln Visual Assessment Unit

This area contains the majority of existing development, including the City of Lincoln and the area west of Lincoln. Existing developments include Lincoln Airpark and Joiner Ranch specific plan areas, two rural subdivisions near Nelson Lane, and the Lincoln Municipal Airport along with its surrounding commercial industries. In addition,

much of the non-developed area in the Lincoln visual assessment unit is slated for development.

Auburn Ravine and its great valley oak riparian forest flows from east to west. Vernal pools are visible in certain locations. The Lincoln Airpark Specific Plan Area and Lakeside Drive is visible to the left. The lumber processing plant and multiple clay pits are located just outside of Lincoln proper.

Viewer Quality

Overall quality of the Lincoln visual assessment unit is more interesting than the South Lincoln visual assessment unit due to the larger diversity of natural elements, such as creeks and vernal pools. Expansive and unified views throughout agricultural areas provide harmony. Topography creates interest while ranches provide focal points. Occasional tree farms provide thick, colorful vertical elements, which contrast with the plainness of the surrounding agricultural uses. The long, large berms of the wastewater treatment plant are visible east of Nelson Drive. These slopes range up to fifteen feet high and block views to the east of the City of Lincoln and the riparian corridor along Markham Ravine. Industrial complexes around the Lincoln Municipal Airport are unsightly, unattractive and ill proportioned to the surrounding rural atmosphere. In addition, the clay pits near existing SR 65 disrupt the intactness and unity of this area. Clay pits are the largest visual encroachments within the Lincoln visual assessment unit.

Sheridan Visual Assessment Unit

The Sheridan visual assessment unit is approximately 8 km (5 mi) long, extending from Coon Creek on the south to the Bear River on the north. This area includes the rural community of Sheridan, which has no plans for development in the near future.

Ranches are sparsely located along rural roads. Curving, winding tributaries, vernal pools and vast acreage of pheasant clubs dominate these expansive views. The large stand of trees is visible along the Bear River.

Terrain in the Sheridan visual assessment unit is the most varied and exciting of all the visual assessment units. A few low-lying hills exist with elevation differences ranging from 8-16 m (25-50 ft). One unique, mile-wide rolling foothill with five saddles is located between Dalby and Riosa Roads. This particular area has the most complete panoramic view of the entire project area, including views of the Sutter Buttes, Sierra Nevada and the Central Valley. Great valley riparian oak forest provides visual corridors for Coon Creek on the south and the Bear River on the north. The majority of land in the Sheridan visual assessment unit is agricultural, especially on the east side of Dowd Road. To the west of Dowd Road is non-native grassland.

Viewer Quality

The Sheridan visual assessment unit has the best visual setting due to its mixture and variety of appealing components. The overall rural feeling of quaint ranches, large spreads of expansive land, creek corridors, elevation changes and panoramic views help define the excellence of this visual experience. Due to the lack of existing and future planned development, this area may remain free of encroaching development. Panoramic views from the top of the unique mile-wide foothill between Dalby and Riosa Roads exhibit the compositional harmony and visual coherence of the Sheridan visual assessment unit.

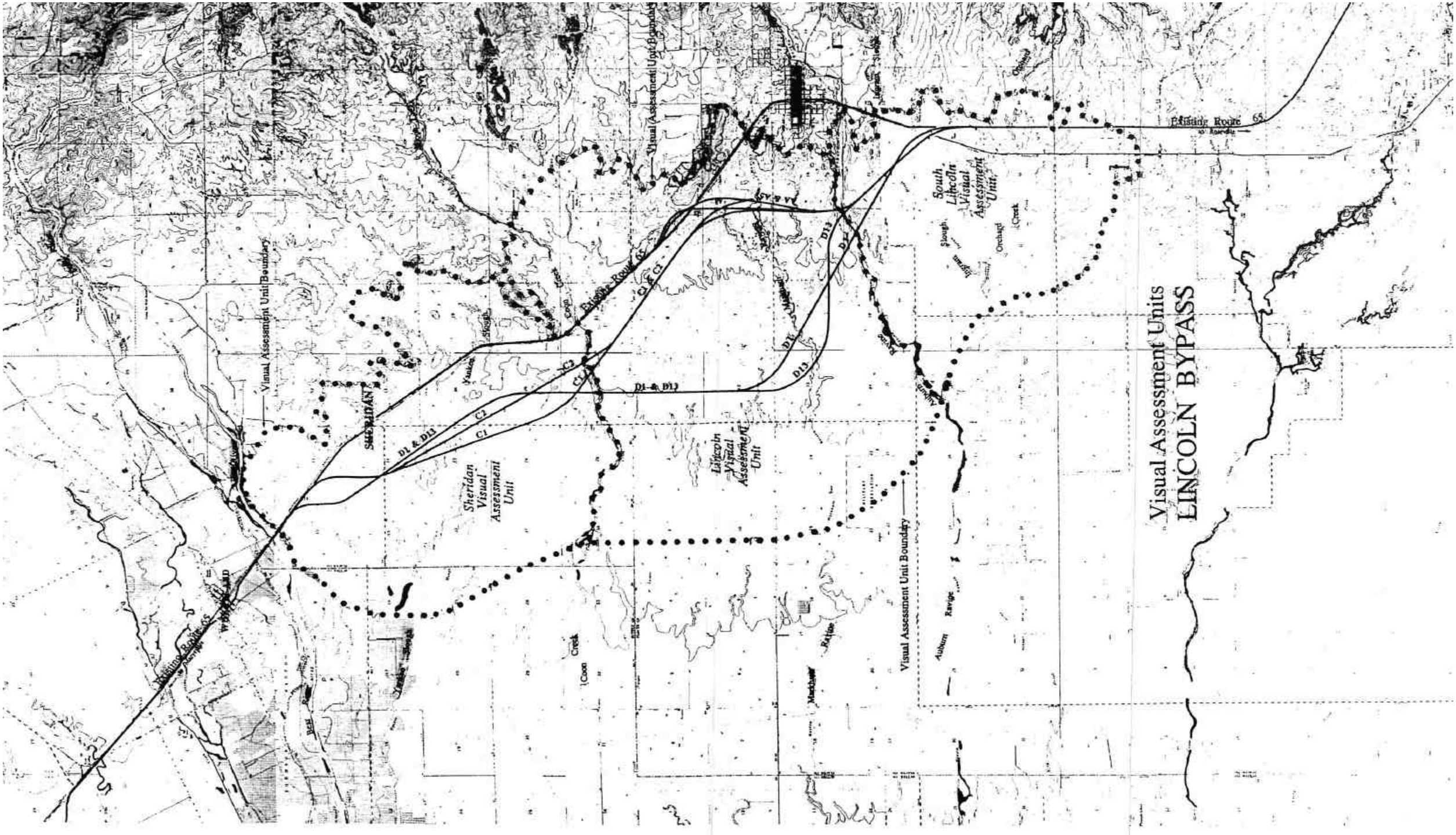


Figure 3-18

Visual Assessment Units

Figure 3-19 South Lincoln Visual Assessment Unit



Figure 3-20 Lincoln Visual Assessment Unit



Figure 3-21 Sheridan Visual Assessment Unit



4 ENVIRONMENTAL CONSEQUENCES

This chapter describes the probable impacts of each alternative. The chapter is divided by type of resource affected such as geology, air quality, noise impacts, water quality, natural environment, cultural resources and visual impacts. The following technical studies from which these sections are derived are incorporated by reference into this Draft Environmental Impact Report/Statement and are available for viewing at the Department of Transportation, District 3, Sacramento Office, 2800 Gateway Oaks, Sacramento.

Air Quality Report
Noise Impact Report
Location Hydraulic Study
Water Quality Report
Visual Impact Assessment
Initial Site Assessment
Initial Site Assessment Update
Community Impact Assessment
Natural Environment Study
Historic Properties Survey Report
Historic Architecture Survey Report
Finding of No Effect
Traffic Studies
Draft Relocation Impact Statement

In some cases, such as with air quality and geography, impacts to the resource will be looked at in general terms rather than by specific alternatives. For resources where impacts vary by alternative, then the impacts are evaluated by alternative.

4.1 SUMMARY OF IMPACTS

Table 4-1 summarizes the right-of-way costs and number of residences and businesses affected by each alternative.

Table 4-1 Summary of Right-of-Way Impacts

Alternative	Residences	Businesses
A5C1	78	5
AAC2	20	2
D1	20	6
D13	10	2
D 13 South Modified	10	1
D 13 North Modified	18	1

Table 4-2 and 4-3 summarize the impacts of all the alternatives on key habitat found in the area. Table 4-28 on page 4-87 compares the impacts on each type of wetland. Keep in mind that some of these habitats are easier to replace than others. For example, freshwater marsh is easier to create and more likely to be successful, than northern hardpan vernal pools or northern volcanic mudflow vernal pools, oak woodlands

or riparian forest. Consequently, impacts to oak woodlands, riparian forest and vernal pool habitats should be viewed as more significant than impacts to freshwater marsh.

Table 4-2 Summary of Impacts A5C1, AAC2 and D1

	A5C1 Alignment	AAC2 Alignment	D1 Alignment
Wetlands/ Nonwetland Waters	9.4 ha (23.1 ac) wetlands/waters 6.5 ha (16.1 ac) vernal pool/swale 2.2 ha (5.4 ac) of marsh two high value vernal pool complexes	6.3 ha (15.5 ac) wetlands/waters 3.3 ha (8.0 ac) vernal pool/swales 2.4 ha (6.0 ac) of marsh two high value vernal pool complexes	5.7 ha (14.1 ac) wetlands/waters 2.8 ha (6.8 ac) vernal pool/swales 2.6 ha (6.3 ac) of marsh one high value marsh
Special Status Species	Vernal pool fairy shrimp Ahart's dwarf rush Raptor foraging and potential nesting habitat two high value vernal pool complexes	Vernal pool fairy shrimp Ahart's dwarf rush Raptor foraging and potential nesting habitat two high value vernal pool complexes	Vernal pool fairy shrimp Raptor foraging and potential nesting habitat one high value marsh
Natural Communities Wildlife, Fisheries	80.1 ha (197.7 ac) grassland/ vernal pool 2.2 ha (5.4 ac) riparian forest 5.8 ha (14.3 ac) oak woodland	76.0 ha (187.7 ac) grassland/ vernal pool 1.1 ha (2.6 ac) riparian forest 10.2 ha (25.2 ac) oak woodland	48.4 ha (119.4 ac) grassland/vernal pool 1.3 ha (3.2 ac) riparian forest 0.4 ha (0.9 acre) oak woodland
Water Quality	185.8 ha (59.0 ac) footprint with 11 stream crossings	178.3 ha (440.6 ac) footprint with 11 stream crossings	182.8 ha (451.7 ac) footprint with 9 stream crossings
Cultural Resources	Requires small amount of right of way from property eligible for National Register.	Requires small amount of right of way from property eligible for National Register. Impacts to recorded archeological site	Requires small amount of right of way from property eligible for National Register.
Section 4(f) Use	Yes 1.5 ha (3.7 ac)	If the archaeological site is determined to require preservation in place, then this alternative would affect a Section 4(f) property.	Yes 10.7 ha (26.5 ac)
Agricultural Land	54.4 ha 134.3 ac	51.1 ha 126.1 ac	84.4 ha 208.5 ac
Hazardous Waste	Potential	Potential	Potential
Land Use/ Socio-economics	Residences: 78 Businesses: 5	Residences: 20 Businesses: 2	Residences: 20 Businesses: 2
Cost	$155 million (min) $196 million (max)	$163 million (min) $195 million (max)	$170 million (min) $201 million (max)

Table 4-3 Summary of Impacts; D13, D13 South Modified and D13 North Modified

	D13 Alignment	D13 South Modified	D13 North Modified
Wetlands/ Nonwetland Waters	5.3 ha (13.1 ac) wetlands/waters 2.2 ha (5.4 ac) vernal pools/swales 2.8 ha (6.8) ac of marsh one high value marsh	6.8 ha (16.8 ac) wetlands/waters 2.4 ha (6.0 ac) vernal pool/swales 2.2 ha (5.5 ac) marsh	5.1 ha (13.8 ac) wetlands/waters 2.0 ha (4.9 ac) vernal pools/swales 2.5 ha (6.4) ac of marsh
Special Status Species	Vernal pool fairy shrimp Raptor foraging and potential nesting habitat one high value marsh	Vernal pool fairy shrimp Raptor foraging and potential nesting habitat	Vernal pool fairy shrimp Raptor foraging and potential nesting habitat
Natural Communities Wildlife, Fisheries	50.4 ha (123.3 ac) grassland/ vernal pool 1.3 ha (3.3 ac) riparian forest 3.5 ha (8.6 ac) oak woodland	52.5 ha (129.7 ac) grassland/ vernal pool 1.2 ha (3.0 ac) riparian forest 0.2 ha (0.4 ac) oak woodland	64.2 ha (158.7 ac) grassland/ vernal pool 1.3 ha (3.3 ac) riparian forest 3.5 ha (8.6 ac) oak woodland
Water Quality	198.9 ha (491.5 ac) footprint with 9 stream crossings	196.3 ha (485.2 ac) footprint with 9 stream crossings	172.6 ha (426.6 ac) footprint with 8 stream crossings
Cultural Resources	Requires small amount of right-of-way from property eligible for National Register.	Requires small amount of right-of-way from property eligible for National Register.	Requires small amount of right-of-way from property eligible for National Register.
Section 4(f) Use	Yes 10.7 ha (26.5 ac)	Yes 10.7 ha (26.5 ac)	Yes 10.7 ha (26.5 ac)
Agricultural Land	102.5 ha 253.2 ac	95.5 ha 235.7 ac	96.7 ha 238.8 ac
Hazardous Waste	Potential	Potential	Potential
Land Use/ Socio-economics	Residences: 10 Businesses: 2	Residences: 14 Businesses: 2	Residences: 10 Businesses: 1
Cost	$161 million (min) $192 million (max)	$160 million (min) $191 million (max)	$162 million (min) $193 million (max)

4.2 SOCIOECONOMIC IMPACTS

4.2.1 Land Use Impacts

Land use impacts are evaluated in terms of consistency of the proposed project alternatives with local plans. The City of Lincoln's General Plan has a policy to pursue the construction of a SR 65 Bypass. The original proposed SR 65 Bypass, adopted by the California Legislature in 1964, was intended to be located west of the existing SR 65 alignment. In the intervening years, since no right-of-way had been purchased, development has precluded the viability of the adopted alignment as the proposed route. The circulation element of Lincoln's General Plan, updated in 1988, designated the future location of the Bypass along the AC corridor between Joiner Parkway and the Lincoln Airport. Since that time, the updated Circulation Element (1994) has designated the D13 alternative as the location of the future bypass.

The following sections describe the potential effects of the project by subject.

Farmland Impacts

Agricultural land is the dominant community type in the Study Area, with approximately 42.4 percent of the Study Area classified as agricultural land in the Natural Environment Study (NES). The impacts to agricultural land vary from 51 ha (126 ac) for the AAC2 alternative up to 102.4 ha (253 ac) for the D13 alternative.

All of the alternatives will impact prime, unique, statewide, and locally important farmlands. Completion of the Farmland Impact Rating showed that all the alignments had point values that fell below the 160-point threshold for the determination of significant impacts. A copy of the Farmland Impact Rating is located in Appendix D.

Residential

The Placer County general plan has a policy to promote the concentration of new residential development in higher-density residential areas located along major transportation corridors and transit routes. Although alternatives D1 and D13 will reroute the SR 65 alignment away from both Lincoln and Sheridan and alternatives A5C1 and AAC2 will reroute SR 65 away from Sheridan, the ultimate alignment will run relatively along the two towns' western borders.

The City of Lincoln's goal and supporting policies generally address the need to ensure sufficient residential development to meet community needs while discouraging leapfrog or premature development. By implementing the use of planned development

projects, Lincoln has ensured that development would proceed with the needs of the community.

Similar to Lincoln, Sheridan has also adopted the goal to provide adequate housing for its residents. None of the alternatives would impact Sheridan's current housing situation.

Industrial

Placer County, Lincoln and Sheridan have all adopted the goal to designate adequate land for industrial development to meet the present and future needs of all Placer County residents. Although there will not be any industrial units displaced by the project, all six alignments will divert traffic away from the existing industrial companies.

Despite Lincoln's historically modest industrial development, it appears that as new nationally recognized industries move into the Roseville/Rocklin area, Lincoln has also been receiving attention as a market prime for industrial expansion. With 605 ha (1,494 ac) of vacant industrial land available there will not likely be any impacts caused by the construction of the Lincoln Bypass to industrial land uses currently defined in the general plan. Moreover, construction of the Lincoln Bypass will improve travel conditions along SR 65 that will promote the anticipated industrial growth.

Commercial

Similar to the industrial land use goal, commercial land use goals and policies for Placer County, Lincoln and Sheridan are to designate adequate land for commercial development to meet the present and future needs of all Placer County residents. Five of the six mixed-use planned developments have set aside commercial land totaling 113.4 ha (280.1 ac).

The Draft Relocation Impact Report (DRIR) identified two businesses that would be impacted by the D1 and D13 alternatives; a well drilling business and a duck club, each of which have one to three employees. The A5C1 and AAC2 alternatives will displace the duck club.

4.2.2 Growth Inducement

This analysis is an estimation of direct or indirect ways in which the project may foster economic or population growth or the construction of additional housing in the surrounding area. The key consideration is whether the project's effect on growth will be significant in the context of the region's plans, natural setting and growth patterns.

Growth inducement is difficult to measure since the impacts are generally indirect and occur over an extended period of time after the project is completed. The relationship is generally evaluated as either facilitating planned growth or inducing

unplanned growth. A new roadway may create additional market pressure for growth because one constraint for development has been lifted. However, whether or not the project will induce unplanned growth depends on political, physical and socioeconomic factors as well. The proposed project is intended to meet the existing and/or projected traffic demand based upon the local land use plans.

The analytical technique to be used for evaluating growth inducement of the Lincoln Bypass is the Factor Analysis Alternative. The factors include the cost of land, local government plans and policies, articulated public attitudes, cost and labor pool, land use and terrain, commute time, access, infrastructure and facility constraints.

Cost of Land

Although Placer County land values tend to be higher than other counties in the region, the higher cost of land would not likely create a hindrance to unplanned development. Furthermore, accessibility to undeveloped land could cause minor shifts of economic development that would have otherwise have been built elsewhere in the same region. Nevertheless, development of the undeveloped agricultural areas would also rely on any existing farmland contracts and local policies set by governmental officials.

Local government plans and policies

The Department projects are designed to accommodate current and future traffic demand in accordance with local plans. Decision-makers in the City of Lincoln believe that growth and the accompanying increase in traffic is inevitable, and have developed strategies to manage it so Lincoln may retain the qualities of life that its citizens desire.

Local approvals for mixed-use developments have not been contingent upon the construction of the Lincoln Bypass. However, it is now Lincoln's policy that development proposals in the city will be approved only if funding, or the method of funding, has been secured for the construction of the Bypass when the traffic congestion level-of-service "D" is exceeded. It is possible that the Lincoln Bypass could be funded by approved and built developments; consequently, the Bypass would be a response to the growth planned by the City of Lincoln.

In 1988, the City of Lincoln updated its General Plan to designate areas where development should occur. The City determined that the adoption of the proposed Land Use Element would cause significant growth inducing impacts, resulting in levels of population and urban development in excess of that which would otherwise occur within the existing city limits under the former General Plan. The distribution and concentration of population would also be increased by adoption of the Land Use Element. These impacts were found to be both significant and un-mitigatible.

Placer County has placed a moratorium on development in the rural area northwest of Lincoln and considers Lincoln's provision of an urban level of service adjacent to agricultural lands to have the likely effect of placing development pressures on these rural areas. The "Build" alternatives could contribute to development pressures on the agricultural lands northwest of Lincoln by way of providing better accessibility than is provided by the current circulation system. By contributing to the necessary infrastructure, the longer alternatives could indirectly influence the location, distribution and density of future development in both Lincoln and rural areas surrounding Lincoln's sphere of influence. Nevertheless, changes in land use distribution are ultimately influenced by local officials through amending general plans and approval of development permits.

Land Use and Terrain

Lincoln's existing land use controls involving design and property development standards have not been a constraint to area development. Even with the "No Build" alternative, significant growth in the City of Lincoln is projected. Despite the alternative ultimately chosen, any growth beyond the City of Lincoln would require the approval of Placer County officials and/or additional area to be adopted within Lincoln's sphere of influence.

The Study Area's prominent agricultural influence is partly due to the abundance of relatively level ground with a variance of soil types. Historically, developing areas have had few natural obstacles to impede growth and development with the exception of some prominent ravines. However, with growing concerns over the loss of agricultural lands and vernal pools, development projects have to coordinate with the respective responsible resource agencies to comply with environmental laws and regulations. Although compliance with environmental laws and regulations may be lengthy and delay projects, development projects in the Study Area generally have few other barriers.

Articulated Public Attitudes

Following the approval of Lincoln's updated General Plan in 1988, a grass-roots citizen's group called the Lincoln Greenbelt Alliance was formed to amend the adopted plan. In June 1989 the Alliance prepared the "Greenbelt Initiative" to designate approximately 3642 ha (9,000 ac) of land to the southeast, southwest, and north of Lincoln for agricultural use rather than the residential, commercial and industrial uses as called for in the General Plan. Furthermore, the initiative would restrict funding for the Lincoln Bypass only if assurances were made that the new facility would not provide new access to agricultural areas, except to serve farming needs. The initiative was defeated during the April 1990 election by 85.4%. This overwhelming defeat of the Greenbelt

Initiative demonstrated the support of the citizens within Lincoln for annexation and development plans adopted under the 1988 General Plan. However, this vote may not represent the opinion of the rural communities beyond Lincoln's sphere of influence.

Sheridan is a rural community beyond Lincoln's sphere of influence which will be affected by all the alternatives by way of bypassing the town. However, Sheridan's economic stability is not reliant on the existing alignment. The surrounding farming community albeit small, also represents the rural community beyond Lincoln's sphere and will be impacted by all the alternatives with the loss of farmland. Letters have been received from some of the affected landowners in protest of the alternatives due to the fact that these alignments will impact their land. Many of the smaller farms have been passed on from generation to generation and are dependent on farming the land for their livelihood. Not only would the segregation of their land impact their normal farming activities, encroachment of potential urban development in the area would disrupt their lifestyle.

Cost and Labor Pool

As part of Lincoln's plans and policies, the construction of the Lincoln Bypass has been a condition of development proposals in order to secure funding as well as mitigation for the anticipated traffic generated by the influx of people to the local workforce. The Lincoln Bypass has been conceived to facilitate the planned growth of Lincoln and the anticipated expansion of the local workforce while providing to inter-regional travel. However, Lincoln's plans and policies do not address the growth impacts from a growing workforce on the rural areas outside of Lincoln's Sphere of Influence.

Commute Time

Travel time between geographic points may influence the redistribution of economic development and population. The current SR 65 alignment serves both local traffic and through traffic, whereas, the Bypass would divert the through traffic from the core of Lincoln where delays occur due to traffic signals and cross traffic. With the "no build" alternative, future planned development in Lincoln would strain the capacity for the existing roadway system to move traffic efficiently. Therefore, each alternative will ease traffic congestion on the local system by diverting traffic from Lincoln's downtown business district. As Lincoln's planned developments are constructed the bypass could also serve as an alternative route between Lincoln's northwestern and southern areas. However the bypass will also provide direct travel access to undeveloped agricultural lands north and west of Lincoln. Consequently, increased access to undeveloped lands may attract a greater number of commuters willing to sacrifice the longer commutes to live in rural areas.

Access

Transportation access is one of several important factors affecting the development of land. In order to provide for expected growth in Lincoln, interchanges will be constructed at Industrial and Nicolaus for the A corridor, or Nelson for the D corridor (See Traffic Summary, Chapter 1, section 3). Eventually, the A5C1, AAC2, D1 and D13 alternatives and the D13 modifications will have additional interchanges at Wise and Riosa Road. The Riosa Road interchange would be necessary to serve as access to the Sheridan community. The Wise Road interchange would potentially serve as access for the rural community between Lincoln and Sheridan as well as Lincoln's northern region. Although access to a major transportation system is critical to farm communities, a major interchange at Wise Road could add development pressures in this area.

Infrastructure

Lincoln is attempting to direct future growth in an orderly manner by building primarily around the downtown area and projecting outward to avoid leap-frog development that could result in inadequate infrastructure. Proposed developments in Lincoln will be reviewed by the city to determine if the existing developed areas are adequate or if urban reserves would be more appropriate locations. The Lincoln Public Facilities Element, as part of the General Plan, has mapped out the services and physical improvements that would be necessary for transportation, parks and recreation, schools, sewage treatment, police and fire, and city government for future planned developments and would be funded through developer's fees. In the unincorporated areas, the lack of urban services such as water and sewer treatment will likely deter unplanned development.

Facility Constraints

Due to limited funding, the project will be built in phases. Initially a two-lane access-controlled expressway with intersections will be constructed. As demand increases, interchanges will be built with funds from development in the area. The schedule depends on when funds become available.

4.2.3 Social Impacts

Title VI and Environmental Justice

Section 3.1.5 describes the demographics of the project area. Some minorities, elderly and physically challenged persons may potentially be relocated depending on the alternative ultimately chosen. However, considering the relatively low total numbers of people that may be affected, the overall impact to these groups should be minimal. A survey of the residents will be conducted for the Final Relocation Impact Report and will identify the specific numbers of the potentially impacted residents with disadvantages.

Census tract 214 block group 2 has been identified as an area with a higher concentration of minority groups. This area is located east of the existing alignment and is not expected to incur direct impacts from any of the proposed alignments. A potential indirect impact could include a decrease in accessible public transportation. Although minor changes to the current bus route are inevitable due to access changes, local transit authorities anticipate that the areas serviced will increase as the needs change due to development.

Census tract 214 block group 6 was identified to have above the average percentage of low-income people (11.2%). However, it should be noted that 11.2% of the people is not considered a high concentration of low-income people. Furthermore, since the 1990 census data has been collected, portions of census tract 214 block group 6 has been planned for new development. Since it is assumed that low-income people will not be buying these new homes it is also predicted that the mean percentage of low-income people will decrease.

This project will not have a disproportionate impact on minorities or low- income families. This project will also not discriminate, exclude from participation or deny benefits to any person on the grounds of race, color, sex, age, national origin, religion, or disabling condition.

This project has been developed in accordance with the Civil Rights Act of 1964, as amended, and Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations." The Executive Order requires each Federal agency (or its designee) to take the appropriate and necessary steps to identify and address "disproportionately high and adverse" effects of Federal projects on minority and low-income populations.

It is the policy of the California Department of Transportation, in accordance with the Civil Rights Act of 1964, the Civil Rights Restoration Act of 1987, 49 CFR 21 and related statutes and regulations that no person in the state of California shall, on the grounds of race, color, sex, age, national origin, religion, or disabling condition, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity administered by the Department.

Community Cohesion

Table 4-4 shows that all of the proposed alternatives would have some impact on residential neighborhoods. Alternative A5C1 would have the greatest impact on people living in single family residences with full takes amounting to a loss of 77 single family homes and one mobile home. The considerable amount of displacements expected for alternatives A5C1 would largely be due to the construction of approximately 55 homes

east of the intersection of Venture and Lakeside Drives. Similarly, the eight displacements for AAC2 are also planned for construction in the near future as part of the Brookview Estates.

Table 4-4 Residential Displacement Properties for Each Alternative

Type of Residence	Alternative			
	A5C1	**AAC2**	**D1**	**D13**
Single Family				
Full Take	77	8	4	3
Partial Take	11	9	10	3
Mobile Home				
Full Take	1	0	4	2
Partial Take	2	3	2	2

Community cohesion refers to the degree to which residents have a "sense of belonging" to their neighborhood. Although the A5C1 alternative will disrupt a larger portion of homes than the other alternatives, it is also noted that the majority of homes are new homes in new developments. At the time of this study, the homes were currently being built or planned to be built, therefore, due to the lack of survey data it was assumed that the community cohesion of the newer neighborhoods have not likely had enough time to develop a sense of community or the neighborhood has not yet been established. Albeit, by the time the bypass is ultimately constructed, these homeowners would have had a chance to develop a sense of community and belonging to the neighborhoods. Therefore, if this alignment is chosen it may be beneficial to relocate the affected residences to avoid future community cohesion impacts.

Access and Circulation

The construction of the bypass will limit the amount of access points from cross streets. All of the alignments will create a barrier from central Lincoln to the surrounding planned developments and the outlying areas within the study area. However, access will be provided by either constructing overpasses or interchanges at existing or proposed major roads. Table 4-5 outlines the overpasses and interchanges proposed for each alignment. Furthermore, the bypass will improve operations by bypassing the railroad crossing in Sheridan.

Table 4-5 Overpasses and Interchanges at Local Streets

Cross Street	Alternative			
	A5/C1	**AA/C2**	**D1**	**D13**
Industrial Blvd.	I/C	I/C	I/C	I/C
Westwood Blvd.	O/C	O/C	O/C	O/C
Moore Road	O/C	O/C	O/C	O/C
Nelson Lane	N/A	N/A	I/C	I/C
Nicolaus Road	I/C	I/C	I/C	I/C
Wise Road	O/C	O/C	I/C	I/C
Dowd Road	O/C	O/C	O/C	O/C
Dalby Road	O/C	O/C	N/A	N/A
Riosa Road	I/C	I/C	I/C	I/C

I/C=interchange O/C=overcrossing N/A=not applicable; alignment does not cross road

Parking Impacts

No parking impacts are anticipated with the construction of any of the alignments. In fact, by bypassing the existing alignment through the City of Lincoln it is expected that parking will be easier for shoppers. Furthermore, relinquishment of the existing alignment would also allow the City of Lincoln to reconfigure parking to provide extra spaces if desired.

4.2.4 Relocation Impacts

As shown in Table 4-6, all of the proposed alternatives would have some impact on residential neighborhoods. Alternative A5C1 would have the greatest impact on people living in single family residences with full takes amounting to a loss of 78 homes. The considerable amount of displacements expected for alternative A5C1 would largely be due to the upcoming construction of approximately 55 homes east of the intersection of Venture and Lakeside Drives. Similarly, AAC2 would also require many displacements due to the construction in the near future of additional portions of the Brookview Estates.

Table 4-6 Residential & Business Displacement Properties for Each Alternative

Type of Residence	Alternative					
	A5C1	**AAC2**	**D1**	**D13**	**D13 S Mod**	**D13 North Mod**
Residences	78	20	20	10	10	18
Businesses	5	2	6	3	1	1
Cost estimate (in millions of dollars)	$56	$34	$20	$22	$21.6	$23.5

Nevertheless, the Draft Relocation Impact Report (DRIR) shows that there are adequate resources available to relocate displaced residents resulting from all six alternatives. Although Lincoln's future planned developments expect to construct an additional 16,929 housing units, the DRIR states that the A5C1 and AAC2 alternatives will impact the City of Lincoln's housing stock and may be disruptive to the City's

General Plan. This impact would be largely due to the fact that future industrial development would create an influx of workers also in need of homes.

4.2.5 Housing Impacts

There are adequate resources available to relocate displaced residents resulting from all six alternatives. However, the large of amount of displacements from the A5C1, and AAC2 alternatives will impact the City of Lincoln's housing stock and may be disruptive to the City of Lincoln's general plan. The D1 and D13 alternatives are anticipated to have no negative impact on the Lincoln community. All relocations associated with this project would be subject to the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 as amended 1987.

4.2.6 Community Facilities and Services Impacts

Each alternative except the "No Build" alternative will not reduce the accessibility to public services in the Study Area. The proposed alternatives will reduce response times for emergency vehicles due to the improved circulation expected. All of the alignments will also remove the obstacle of the at-grade railroad crossing at Sheridan.

4.2.7 Traffic Impacts

Traffic congestion will be alleviated within the Lincoln city limits by removing inter-regional travelers. However, congestion in the town of Wheatland will become worse. By making SR 65 an expressway; removing cross traffic and driveway and increasing speeds, it will become more appealing to those traveling between Marysville and Roseville, thus increasing congestion in the town of Wheatland, where the bypass ends. Pressure from the raceway and amphitheater traffic further exacerbate the problem. Operational improvements of the existing highway through Wheatland are currently being pursued, but are not likely to solve the problem.

A highway project to bypass the town of Wheatland has been proposed. The California Transportation Commission has not funded this project at this time, however, it is tentatively scheduled for construction in 2006.

4.2.8 Economic Impacts

Regional Economic Impacts

The estimated tax revenue lost to local government resulting from the right-of-way purchase of the ultimate alternative chosen, including the removal of residences and businesses from the tax base is expected to be negligible. Revenue losses would be partially offset by the decrease in costs to the city and county associated with providing services to residential properties. In addition, past studies indicate most property values

may increase in those areas near the new facility because of increased access. This will net the city and county additional property tax revenue when the properties resale.

Project construction dollars would generate jobs and income over a two to three year construction period. In the 1980's FHWA determined that a $1 million investment would directly generate 10 on-site, full-time construction jobs. When other jobs are considered as part of the formula, such as off-site, construction related or service industry related jobs, the total number of jobs created amount to approximately 23 for each $1 million investment. It has not been determined how these numbers would translate considering the current economic climate; however, these figures are not expected to change significantly. The Lincoln bypass is projected to cost approximately between $157 and 185 million.

Impacts on Local Businesses and Industry

The existing commercial shopping and services area in Lincoln and Sheridan are generally located on and adjacent to SR 65. Some businesses in the Lincoln community have expressed concern that the construction of the Bypass may result in the decline of patronage.

It is difficult to predict the economic impacts of a bypass on businesses that are normally located on the main thoroughfare due to the number of variables affecting the local economy. Some businesses that may be negatively affected by the Bypass include motels, cafés, fast-food restaurants, and gas stations since much of their services are provided to pass through motorists. Although there are several commercial businesses that serve the motoring public, a large segment of the business activity in the downtown Lincoln area cater to local residents. In fact, the rerouting of traffic may result in an increase in sales and income to some businesses as the community members find it more convenient to shop downtown because pedestrian safety is enhanced and more parking is available for local residents.

Since the Bypass is predicated on future development, the downtown business climate should improve due to the increase in the local population growth. Furthermore, the Lincoln Redevelopment Agency has been promoting the concept of developing the downtown business district as "Old Towne." Lincoln's long-range effort to attract tourists and local residents to shop in the central business district is to capitalize on the historic fabric of the area.

The Bypass is likely to enhance the access to and availability of regional commercial centers existing or planned in Roseville. However, the ten-mile distance from Lincoln is currently not a major obstacle. Furthermore, the businesses that local residents would most likely seek in Roseville are generally not available in Lincoln.

4.2.9 Mitigation

Mitigation for Land Use Impacts

After the completion of the environmental document, the California Transportation Commission (CTC) will select and adopt a corridor alignment to be reserved for the ultimate construction of the Lincoln Bypass. The Placer County General Plan, the City of Lincoln General Plan and the Sheridan General Plan should be revised, as necessary, to reflect the selected corridor alignment.

According to the Farmland Protection Policy Act (FPPA) (USC 4201-4209; 7 CFR VI 658), the D1 and D13 alternatives exceed the 160-point threshold for significant farmland impacts. Therefore, the FPPA requires that actions be taken to consider alternatives that would lessen the impacts to farmland. If the D1 or D13 alternative is selected, it will be necessary to consider the implementation of mitigation measures to reduce farmland impacts. Some mitigation measures could include minimizing shoulder widths, using concrete median barriers instead of wider medians, leasing roadside right-of-way for agricultural purposes until future transportation improvements are necessary, and/or placing conservation easements on alternate farmland parcels to avoid the encroachment of unplanned development. The Natural Environment Study (NES) prepared for this project has proposed 181 ha (447 ac) of grasslands/agricultural lands be preserved for mitigation of Swainson's hawk habitat loss which could also be utilized as mitigation for farmland impacts.

Mitigation for Relocation Impacts

The Department's Relocation Assistance Program, required by Federal and state law, provides each displaced resident with help in finding replacement housing. Payments include moving expenses and payments to enable displaced residents to obtain comparable decent, safe, and sanitary housing within their financial means. No residential occupant will be displaced unless replacement housing is available. If the mobile homes cannot be relocated at the time of displacement, due to age and condition, the occupants may be eligible for assistance in purchasing either a new mobile home or a conventional single family residence. With respect to those residential properties involving a partial acquisition, owners of property appraised as having an uneconomic remnant may request relocation assistance.

The relocations will be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, and Title VI of the Civil Rights Act of 1964. Title VI prohibits discrimination based on race, color, religion, sex, disabilities, age and national origin in providing services and benefits on

Federally assisted projects. The Department's Relocation Assistance Advisory Service can be found in Appendix G.

Business displacement problems can be minimized by way of the Department's' early purchase of business properties and lease-back arrangements. This would allow time for business property relocation and any construction needed while existing facilities are kept in operation. Displaced businesses are eligible for relocation assistance including payment for moving and possible other expenses. Displaced businesses that are unable to relocate, or are expected to suffer a substantial loss of existing patronage, could be eligible for up to $20,000 "in lieu" payment through the Relocation Assistance Program.

Economic Impacts

Economic impacts to the local economy with the construction of any of the alternatives are minimal. Although a few businesses may experience short-term impacts due to the Lincoln Bypass, long-term impacts are not expected. Furthermore, with the large amount of commercial development anticipated for the area, businesses will have the opportunity to relocate near the new alignment.

4.3 BICYCLE IMPACTS

No impacts to bicyclists are anticipated with this proposed project. There are no accommodations for bicycles on the Lincoln Bypass; however, the existing SR 65 will remain as a bicycle route.

4.4 GEOGRAPHY AND TOPOGRAPHY

The proposed project will not substantially change the topography within the project area. Due to the potential for flooding, and the fact that this road will be the primary route through and out of the area, the road will be raised up 1.43 m (4.7 ft) to put it above potential floodwaters. However, culverts and drainage will be provided to maintain the existing hydrology of the area to the greatest extent possible.

The soils in the area present no particular problems with construction. The project will be designed to withstand seismic activity that could be expected in the area.

Reclamation of Minerals

A large amount of fill will be required for this project. Locating the fill will be the responsibility of the contractor. Reclaiming minerals from the fill will also be the responsibility of the contractor.

4.5 AIR QUALITY

This section evaluates air quality impacts that could result from the project. Air pollutant emissions associated with the construction of the project, such as fugitive dust from grading/site preparation and equipment exhaust could occur over the short-term during construction. Long-term emissions could result from the use of the proposed highway/freeway, primarily from vehicular traffic.

The proposed project is not expected to generate any additional traffic. Traffic would be rerouted from other area roadways to the proposed SR 65. Regional traffic trips would remain similar. Therefore, no new long-term regional emissions would result from implementation of the proposed project.

The proposed bypass route will improve traffic movement in the general vicinity, thereby lowering the concentration of pollutants emitted by motor vehicles. Consequently, no significant regional or local air quality impacts are anticipated. The following sections discuss the possible emission generating activities associated with the proposed project and their significance.

4.5.1 Naturally Occurring Asbestos

Naturally occurring asbestos (NOA) can be found in serpentinite and asbestos bearing ultramafic rocks, and can be released when that rock is broken or crushed. At the point of release, the asbestos fibers may become airborne, causing air quality and human health hazards. Placer County is on the Office of Planning and Research's list of counties that have been identified as being particularly abundant with these types of rocks. However, the predominant rock type in the project location is from the merhton formation, and does not contain asbestos. The California Department of Mining and Geology (CDMG) Map (Open File Report 2000-19, August 2000) shows no areas of NOA.

Asbestos has also been used in the construction of older buildings and highway structures. Demolition of these older structures could cause asbestos contamination. Comprehensive inspections that meet the requirements of current EPA and OSHA regulations are recommended prior to any demolition activities associated with structures in the proposed alignment corridor. Any component that is planned to be impacted by demolition activities should be characterized to ensure proper handling and disposal.

The following table shows the possible extent of buildings to be demolished for this project. No highway structures will be demolished.

Table 4-7 Buildings to be demolished

Alternative	Total	Barns	Mobile	Houses	Commercial

			Homes		Or Unknown
D13	17	4	3	5	5
D13 North Modified	23	12	2	8	1
D13 South Modified	20	5	4	8	3
D1	23	4	3	11	5
AAC2	62	1	2	55	4
A5C1	163	2	1	158	2

4.5.2 Long-term Microscale Projections

Each alternative has its own layout and configuration; therefore, the impact will be different for each alternative and thus are analyzed separately. In order to make a comparison, the same receptor locations are used throughout all alternatives and the end results are compared to determine the difference in impact. Receptor locations are illustrated in Figure 3-11, located in Chapter 3. Receptor locations were determined by locating the nearest residents to each proposed alignment. In the case of planned development, receptors were estimated using maps provided by the City of Lincoln.

Carbon Monoxide (CO)

The impact on local CO levels was assessed with the California Air Resources Board (CARB) approved CALINE4 air quality model, which allows microscale CO concentrations to be estimated along roadway corridors or near intersections. This model is designed to identify localized concentrations of CO, often termed "hot spots." The highest CO concentrations typically occur during peak traffic hours, which best represents a worst case analysis for the calculation of CO impacts. Traffic volumes generated by the Department's for all the alternatives for the years 2015 and 2025 were used in the model (Caltrans, December 1999).

CO concentrations were calculated for the one-hour averaging period and compared to the State one hour CO standard of 20 ppm. CO eight-hour averages were calculated from the one-hour CO calculations, using techniques outlined in the Department's Carbon Monoxide Protocol. A persistent factor of 0.7 was used for the conversion of one-hour CO level to the eight-hour CO level. Concentrations are expressed as parts per million (ppm) at each receptor location.

Data in Table 4-8 illustrates the different impact levels of carbon monoxide (CO) concentration in the general vicinity of the project for the year 2015 and 2025, respectively. No adverse impact on local air quality is expected from the proposed project in the years 2015 or 2025. The increases in CO concentrations are equal to or less than 0.1 ppm (particle per million) for both the one-hour and the eight-hour occurrences,

which is considered minor and negligible. In addition, the CO concentrations are below the State and Federal standards, and no CO hot spots were identified. No nearby sensitive receptors would be affected by project related local air quality impacts. Therefore, implementation of the project would not have any adverse impact on local air quality in the years 2015 and 2025.

Table 4-8 CO Concentration for 2015 and 2025

Receptor	1 Hour CO Concentration[1] (ppm)	8 Hour CO Concentration[2] (ppm)	Exceeds State Standards 1 hr	Exceeds State Standards 8 hr	Receptor	1 Hour CO Concentration[1] (ppm)	8 Hour CO Concentration[2] (ppm)	Exceeds State Standards 1 hr	Exceeds State Standards 8 hr
A5C1 (2015)									
REC1	4.2	2.4	No	No	**REC14**	**4.2**	2.4	No	No
REC2	4.2	2.4	No	No	**REC15**	**4.2**	2.4	No	No
REC3	4.2	2.4	No	No	**REC16A**	**4.3**	2.5	No	No
REC4	4.2	2.4	No	No	**REC16B**	**4.2**	2.4	No	No
REC5	4.2	2.4	No	No	**REC17**	**4.2**	2.4	No	No
REC6	4.2	2.4	No	No	**REC18**	**4.2**	2.4	No	No
REC7	4.2	2.4	No	No	**REC19**	**4.2**	2.4	No	No
REC8	4.2	2.4	No	No	**REC20**	**4.2**	2.4	No	No
REC9	4.2	2.4	No	No	**REC21**	**4.2**	2.4	No	No
REC10A	4.2	2.4	No	No	**REC22**	**4.2**	2.4	No	No
REC10B	4.2	2.4	No	No	**REC23**	**4.2**	2.4	No	No
REC13	4.2	2.4	No	No	**REC24**	**4.2**	2.4	No	No
					REC25	**4.2**	2.4	No	No
AAC2 (2015)									
REC1	4.2	2.4	No	No	**REC15**	4.2	2.4	No	No
REC2	4.2	2.4	No	No	**REC16A**	4.2	2.4	No	No
REC3	4.2	2.4	No	No	**REC16B**	4.2	2.4	No	No
REC4	4.2	2.4	No	No	**REC17**	4.2	2.4	No	No
REC5	4.2	2.4	No	No	**REC18**	4.2	2.4	No	No
REC6	4.2	2.4	No	No	**REC19**	4.3	2.5	No	No
REC7	4.2	2.4	No	No	**REC20**	4.2	2.4	No	No
REC8	4.2	2.4	No	No	**REC21**	4.2	2.4	No	No
REC9	4.2	2.4	No	No	**REC22**	4.2	2.4	No	No
REC10A	4.2	2.4	No	No	**REC23**	4.2	2.4	No	No
REC10B	4.2	2.4	No	No	**REC24**	4.2	2.4	No	No
REC13	4.2	2.4	No	No	**REC25**	4.2	2.4	No	No
REC14	4.2	2.4	No	No					
D1 – 2015									
REC1	4.2	2.4	No	No	**REC12**	4.2	2.4	No	No
REC2	4.2	2.4	No	No	**REC13**	4.2	2.4	No	No
REC3	4.2	2.4	No	No	**REC14**	4.2	2.4	No	No
REC4	4.2	2.4	No	No	**REC15**	4.2	2.4	No	No
REC5	4.2	2.4	No	No	**REC17**	4.2	2.4	No	No
REC6	4.2	2.4	No	No	**REC18**	4.2	2.4	No	No

Receptor	1 Hour CO Concentration[1] (ppm)	8 Hour CO Concentration[2] (ppm)	Exceeds State Standards 1 hr	8 hr	Receptor	1 Hour CO Concentration[1] (ppm)	8 Hour CO Concentration[2] (ppm)	Exceeds State Standards 1 hr	8 hr
REC7	4.2	2.4	No	No	**REC19**	4.2	2.4	No	No
REC9	4.2	2.4	No	No	**REC20**	4.2	2.4	No	No
REC10B	4.2	2.4	No	No	**REC21**	4.3	2.5	No	No
REC11	4.2	2.4	No	No					
D13 – 2015									
REC1	4.2	2.4	No	No	**REC12**	4.2	2.4	No	No
REC2	4.2	2.4	No	No	**REC13**	4.2	2.4	No	No
REC3	4.2	2.4	No	No	**REC14**	4.2	2.4	No	No
REC4	4.2	2.4	No	No	**REC15**	4.2	2.4	No	No
REC5	4.2	2.4	No	No	**REC17**	4.2	2.4	No	No
REC6	4.2	2.4	No	No	**REC18**	4.2	2.4	No	No
REC7	4.2	2.4	No	No	**REC19**	4.2	2.4	No	No
REC9	4.2	2.4	No	No	**REC20**	4.2	2.4	No	No
REC11	4.2	2.4	No	No	**REC21**	4.2	2.4	No	No
A5C1 – 2025									
REC1	4.2	2.4	No	No	**REC15**	4.2	2.4	No	No
REC2	4.2	2.4	No	No	**REC16A**	4.3	2.5	No	No
REC3	4.2	2.4	No	No	**REC16B**	4.3	2.5	No	No
REC4	4.2	2.4	No	No	**REC17**	4.2	2.4	No	No
REC5	4.2	2.4	No	No	**REC18**	4.2	2.4	No	No
REC6	4.2	2.4	No	No	**REC19**	4.2	2.4	No	No
REC7	4.2	2.4	No	No	**REC20**	4.2	2.4	No	No
REC8	4.2	2.4	No	No	**REC21**	4.2	2.4	No	No
REC9	4.2	2.4	No	No	**REC22**	4.2	2.4	No	No
REC10A	4.2	2.4	No	No	**REC23**	4.2	2.4	No	No
REC10B	4.2	2.4	No	No	**REC24**	4.2	2.4	No	No
REC13	4.2	2.4	No	No	**REC25**	4.2	2.4	No	No
REC14	4.2	2.4	No	No					
A5C1 – 2025									
REC1	4.2	2.4	No	No	**REC15**	4.2	2.4	No	No
REC2	4.2	2.4	No	No	**REC16A**	4.2	2.4	No	No
REC3	4.2	2.4	No	No	**REC16B**	4.2	2.4	No	No
REC4	4.2	2.4	No	No	**REC17**	4.2	2.4	No	No
REC5	4.2	2.4	No	No	**REC18**	4.2	2.4	No	No
REC6	4.2	2.4	No	No	**REC19**	4.3	2.5	No	No
REC7	4.2	2.4	No	No	**REC20**	4.2	2.4	No	No
REC8	4.2	2.4	No	No	**REC21**	4.2	2.4	No	No
REC9	4.2	2.4	No	No	**REC22**	4.2	2.4	No	No
REC10A	4.2	2.4	No	No	**REC23**	4.2	2.4	No	No
REC10B	4.2	2.4	No	No	**REC24**	4.2	2.4	No	No
REC13	4.2	2.4	No	No	**REC25**	4.2	2.4	No	No
REC14	4.2	2.4	No	No					
D1 – 2025									

Receptor	1 Hour CO Concentration[1] (ppm)	8 Hour CO Concentration[2] (ppm)	Exceeds State Standards 1 hr	8 hr	Receptor	1 Hour CO Concentration[1] (ppm)	8 Hour CO Concentration[2] (ppm)	Exceeds State Standards 1 hr	8 hr
REC1	4.2	2.4	No	No	**REC11**	4.2	2.4	No	No
REC2	4.2	2.4	No	No	**REC12**	4.2	2.4	No	No
REC3	4.2	2.4	No	No	**REC13**	4.2	2.4	No	No
REC4	4.2	2.4	No	No	**REC14**	4.2	2.4	No	No
REC5	4.2	2.4	No	No	**REC15**	4.2	2.4	No	No
REC6	4.2	2.4	No	No	**REC17**	4.2	2.4	No	No
REC7	4.2	2.4	No	No	**REC18**	4.2	2.4	No	No
REC9	4.2	2.4	No	No	**REC19**	4.2	2.4	No	No
REC10B	4.2	2.4	No	No	**REC20**	4.2	2.4	No	No
					REC21	4.3	2.5	No	No
D13 – 2025									
REC1	4.2	2.4	No	No	**REC12**	4.2	2.4	No	No
REC2	4.2	2.4	No	No	**REC13**	4.2	2.4	No	No
REC3	4.2	2.4	No	No	**REC14**	4.2	2.4	No	No
REC4	4.2	2.4	No	No	**REC15**	4.2	2.4	No	No
REC5	4.2	2.4	No	No	**REC17**	4.2	2.4	No	No
REC6	4.2	2.4	No	No	**REC18**	4.2	2.4	No	No
REC7	4.2	2.4	No	No	**REC19**	4.2	2.4	No	No
REC9	4.2	2.4	No	No	**REC20**	4.2	2.4	No	No
REC11	4.2	2.4	No	No	**REC21**	4.2	2.4	No	No

[1] Includes ambient one hour CO concentration of 4.2 ppm. The State's one hour CO standard is 20 ppm.
[2] Includes ambient eight hour CO concentration of 2.4 ppm. The State's eight hour CO standard is 9.0 ppm.

As shown in Table 4-8, none of the alternatives will have a substantial impact on local air quality. In addition, no new regional trips will be generated as a result of the project. The project would alleviate local congestion and have beneficial regional effects. Therefore, in accordance with the CEQA, this project is not considered to have a substantial impact on existing ambient air quality.

Air Quality Conformity Determination

This project has been included in the 2000/01 Metropolitan Transportation Improvement Program (MTIP) and the 1999 Metropolitan Transportation Plan (MTP). On July 20, 2000, the SACOG signed Resolution 29-2000 finding that the 2000/01 Metropolitan Transportation Improvement Program (MTIP) conforms to the 1994 State Implementation Plan (SIP) under the EPA conformity rule for the Sacramento ozone nonattainment area, carbon monoxide attainment area and particulate matter unclassified area. The conformity determination was signed by the Federal Highway and Federal Transit Administrations on October 5, 2000. At this time, only the purchase of right-of-way is programmed.

Conformity with the SIP plays an essential role in local agency project review by linking local planning and unique individual projects to the Air Quality Attainment Plan (AQAP). Since the AQAP is based on projections from local General Plans, projects that are consistent with the local General Plan are considered consistent with the AQAP per the CEQA requirements.

Air quality models are used to demonstrate that the project's emissions will not contribute to the deterioration or impede the progress of air quality goals stated in the AQAP. The SACOG Regional Air Quality Model uses project specific data to estimate the amount of pollutants generated from the implementation of a project. The results for the "No build" and "Build" scenarios in the horizon year (twenty years from construction, 2025) are compared to the AQAP air quality projections. If the analysis shows compliance with the requirements, it is considered to be consistent with the AQAP.

This project is in accordance with the goals and policies of the City's General Plan that is to provide for the long-range planning and development of the County's roadway system in order to ensure the safe and efficient movement of people and goods. The alternatives proposed are necessary for the safety of the public in the City of Lincoln and would accommodate future planned growth that is projected in the general vicinity. As shown above, the proposed project will not substantially contribute to or cause deterioration of existing air quality; therefore, mitigation measures are not required for the long-term operation of the project. Hence, the proposed project is considered to be consistent with the City of Lincoln General Plan and the Placer County General Plan, and therefore consistent with the AQAP and in conformity with the State Implementation Plan.

Short-Term Construction Related Impacts

Construction Equipment Exhaust Emissions

Construction activities produce combustion emissions from various sources such as site grading, utility engines, on-site heavy-duty construction vehicles, equipment hauling materials to and from the site and vehicles transporting the construction crew. The use of construction equipment on site would result in localized exhaust emissions. On site exhaust emissions during construction would vary daily, as construction activity levels change. The Department's' standard specifications for construction will be adhered to in order to reduce construction related emissions.

Mitigation Measures

Construction Impacts

The following measures are provided to reduce air pollutants generated by vehicle and equipment exhaust during the project construction phase:

- The contractor shall ensure that grading plans include a statement that all construction equipment will be tuned and maintained in accordance with the manufacturer's specifications.
- The contractor shall utilize electric powered equipment in lieu of gasoline powered engines where feasible.
- The contractor shall ensure that grading plans include a statement that work crews will shut off equipment when not in use.
- The contractor shall time the construction activities so as not to interfere with peak hour traffic and minimize obstruction of through traffic lanes adjacent to the site. If necessary, a flag person shall be retained to maintain safety adjacent to existing roadways.
- The contractor shall support and encourage ridesharing and transit incentives for the construction crew.

The following measure would reduce or minimize air pollutant emissions associated with asphalt paving:

- The construction contractor shall adhere to the requirements of the rules addressing the emission control measures covering the asphalt paving emissions.

In addition to the recommended mitigation measures listed above, the Department's' Standard Construction Specifications shall be adhered to further reduce emissions. Following is a list of mitigation measures to reduce the emission of fugitive dust.

- All disturbed areas, including storage piles, that are not being actively utilized for construction purposes shall be effectively stabilized for dust emissions using water, chemical stabilizers/suppressants, or vegetative ground cover.
- All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized for dust emissions using water or chemical stabilizers/ suppressants.
- All land clearing, grubbing, scraping, excavations, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled for fugitive dust emissions utilizing applications of water, or by presoaking.

- When materials are transported off site, all material shall be covered or effectively wetted to limit visible dust emission; or at least six inches of freeboard space from the top of the container shall be maintained.
- All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at least once every 24 hours when operations are occurring. The use of dry rotary brushes is expressly prohibited, except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. The use of blower devices is expressly forbidden.
- Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized for fugitive dust emissions utilizing sufficient water or chemical stabilizers/suppressants.
- Traffic speeds on unpaved roads shall be limited to 15 mph.
- Sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways from sites with a slope greater than one percent.
- Wheel washers for all exiting trucks shall be installed, or all trucks and equipment washed off before leaving the site.
- Wind breaks shall be installed at windward side(s) of construction areas.
- Excavation and grading activity shall be suspended when winds exceed 20 mph.
- Areas subject to excavation, grading and other construction activity shall be limited at any one time.

Compliance with the above mitigation measures would lessen the fugitive dust impact during construction.

Operational Impacts

No mitigation is required.

Level Of Significance After Mitigation

The emissions from the construction exhaust and grading activities with the implementation of the above mitigation measures will reduce impacts to a less than adverse level.

4.6 NOISE IMPACTS

Federal guidelines for assessing traffic noise are contained in Title 23 of the Code of Federal Regulations Part 772, (23 CFR 772), "Procedures for Abatement of Highway Traffic Noise and Construction Noise." These guidelines require consideration of noise

abatement measures for highway projects when traffic related noise impacts have been identified. The Federal and State guidelines state that there will be a noise impact when design year noise levels approach or exceed the noise abatement criterion for the specified land use, or when the predicted traffic noise levels substantially exceed the existing noise levels.

The land use in the noise impacts Study Area is primarily rural/agricultural. At present there are scattered residences along all the alignments, however, development has been completed and planned for much of the area southeast of the airport. All of the identified receptors are considered Activity Category B or C.

2025 is the ultimate Design Year and is considered in the traffic noise model. Four alignments, AAC2, A5C1, D1 and D13, were modeled using Sound32. Of the 31 receptor locations, 8 receptors represent undeveloped lands for which development is anticipated to be planned, designed and programmed prior to the date of public knowledge of the planned project. When traffic noise impacts are predicted for undeveloped lands for which development is planned, designed and programmed before the date of public knowledge, noise abatement/mitigation must be considered as part of the project. (See Figure 3-11, Noise and Air Receptors.)

Noise impacts from the D13 South Modifications have not been quantitatively analyzed because all of the existing and future planned housing developments, represented by receptors NR-15, NR-21, NR-27 and NR-28, are located north of the D13 alignments. The D13 South Modification is south of D13. Because of this, future noise levels at these receptor locations for D13 South Modification are expected to be less than D13. It is therefore assumed that traffic noise impacts and any proposed mitigation measures for D13 South Modification to be similar to the D13.

For specific details on the noise impact evaluation, please refer to the Noise Impact Report, available for review at the Department of Transportation, District 3, Sacramento Office, 2800 Gateway Oaks Dr., Sacramento, CA.

4.6.1 Long Term Noise Impacts

Table 4-9 shows the existing noise levels at the 31 receptors within the Study Area and the predicted noise levels, without sound walls, for each of the alignments. Noise levels were predicted for 2025. Bold numbers indicate approach or exceed NAC at impacted receptors. Italic numbers indicate a "substantial increase" over existing levels.

Table 4-9 Projected Traffic Noise Levels – Ultimate Plan 2025

Noise Level Location	Existing Noise (Monitored) Leq dBA	A5C1	AAC2	D1	D13
NR-1	49.1	60.6	60.5	56.8	56.8
NR-2	45.6	*60.6*	*62.6*	57.3	57.3

Noise Level Location	Existing Noise (Monitored) Leq dBA	A5C1	AAC2	D1	D13
NR-3	54	55.2	55.2	52.9	55.0
NR-4	45.6	53.4	55.5	*60.5*	*60.5*
NR-5	51.3	57.8	*64.6*	63.1	63.1
NR-6	49.6	50.3	50.7	56.6	56.6
NR-7	38.1	*58.2*	*51.2*	*55.2*	*57.6*
NR-8	48.1	62.0	59.1	N/A	N/A
NR-9	36.4	*53.0*	*52.4*	N/A	N/A
NR-10a	54.4	64.3	63.6	N/A	N/A
NR-10b	52.7	63.8	63.2	N/A	N/A
NR-11	36.6	N/A	N/A	*54.7*	*51.6*
NR-12	46	N/A	N/A	*60.5*	56.2
NR-13	43.3	N/A	N/A	***68.2***	*57.9*
NR-14	43.4	N/A	53.0	***68.6***	*60.1*
NR-15	45.6	*62.4*	*60.5*	N/A	53.1
NR-16a	47.7	***65.9***	*60.7*	N/A	N/A
NR-16b	47.9	***66.2***	*60.1*	N/A	N/A
NR-17[4] (8)	48.1	59.6	*61.3*	58.6	58.1
NR-18[4] (10a)	54.4	***70.4***	***70.0***	***65.7***	***69.5***
NR-19[4] (10a)	54.4	***66.6***	***65.9***	***73.7***	***68.0***
NR-20[4] (14)	43.4	***70.4***	***70.3***	*59.1*	*63.2*
NR-21[4] (15)	45.6	***73.9***	***69.6***	57.0	55.6
NR-22[4] (16b)	47.9	***72.5***	***66.4***	N/A	N/A
NR-23[4] (10b)	52.7	***72.2***	*65.2*	N/A	N/A
NR-24[4] (8)	48.1	*65.0*	*63.0*	N/A	N/A
NR-25[4] (6)	49.6	*63.4*	*62.2*	N/A	N/A
NR-26[4] (14)	43.4	N/A	N/A	N/A	N/A
NR-27[4] (14)	43.4	N/A	N/A	*60.2*	***73.6***
NR-28[4] (14)	43.4	N/A	N/A	*59.7*	***65.9***
NR-29[4] (14)	43.4	***71.0***	***69.6***	***67.9***	***65.8***
NR-30[4] (14)	43.4	***70.7***	***68.7***	***69.1***	***67.8***
NR-31[4] (15)	45.6	***68.6***	***64.6***	N/A	N/A

[1] N/A- The modeled segment does not contribute significantly to the noise level at the considered receptor location. Receptor location not modeled for the considered alignment.
[2] Italic numbers indicate "substantial increase" over existing levels.
[3] Bold numbers indicate noise levels that "approach or exceed" the NAC at impacted receptor.
[4] An "acoustical equivalent" was used as indicated in parenthesis.

Table 4-10 Summary of Traffic Noise Modeling Results (A5C1)

Receiver ID	Location Description	Type of Development	Noise Abate-ment Category Leq (h)	Existing Measured Noise Level dBA Leq (h)	Predicted[4] Worst Noise Hour Noise Level dBA Leq (h)	Noise Increase (+) or Decrease (-)	Impact Type[5]
NR-1	4221 North Dowd Road	Res.	B [1]	49.1	60.6[2] [3]	+11.5	None
NR-2	100m north of Riosa Road	Res.	B[1]	45.6	60.6 [3]	+15.0	S
NR-3	100 feet from Existing SR 65	Res.	B[1]	54	55.2 [3]	+1.2	None
NR-4	4710 North Dowd Road	Res.	B[1]	45.6	53.4 [3]	+7.8	S
NR-5	4221 North Dowd Road	Res.	B[1]	51.3	57.8 [3]	+6.5	None
NR-6	700 feet from Existing SR 65	Res.	B[1]	49.6	50.3 [3]	+0.7	None
NR-7	2780 Dowd Road	Res.	B[1]	38.1	68.2 [3]	+30.1	S, A/E
NR-8	2000 feet from Existing SR 65, 1000 feet from C1 and C2	Res.	B[1]	48.1	62.0 [3]	+13.9	S
NR-9	200m south of Wise Road	Res.	B[1]	36.4	53.0 [3]	+16.6	S
NR-10a	Along Wise Road	Res.	B[1]	54.4	64.3 [3]	+9.9	None
NR-10b	Along Wise Road	Res.	B[1]	52.7	63.8 [3]	+11.1	None
NR-11	Along Airport Road	Res.	B[1]	36.6	N/A	N/A	N/A
NR-12	Along Nicolaus Road	Res.	B[1]	46	N/A	N/A	N/A
NR-13	On Rockwell Lane	Res.	B[1]	43.3	N/A	N/A	N/A
NR-14	Along Moore Road	Res.	B[1]	43.4	N/A	N/A	S
NR-15	400 feet east of C1 and C2	Res.	B[1]	45.6	62.4 [3]	+16.8	S
NR-16a	North end of El Camino Verde	Res.	B[1]	47.7	65.9 [3]	+18.2	S, A/E
NR-16b	1245 Cobblestone Dr	Res.	B[1]	47.9	66.2 [3]	+18.3	S, A/E
NR - 17	2000 feet from SR 65	Res.	B[1]	48.1	59.6 [3]	+11.5	S
NR-18	Lincoln Crossing	Res.	B[1]	54.4	70.4 [3]	+16.0	S, A/E
NR-19	Lincoln Crossing	Res.	B [1]	54.4	66.6 [3]	+12.2	S, A/E
NR-20	Lincoln Crossing	Res.	B [1]	43.4	70.4 [3]	+27.0	S, A/E
NR-21	50 feet from Existing SR 65	Res.	B [1]	45.6	73.9 [3]	+28.3	S, A/E
NR-22	50 feet from Existing SR 65, south of Nicolaus Road	Res.	B [1]	47.9	72.5 [3]	+24.6	S, A/E
NR-23	50 feet south of Nicolaus Road	Res.	B [1]	52.7	72.2 [3]	+19.5	S, A/E
NR-24	50 feet from C1	Res.	B [1]	48.1	65.0 [3]	+16.9	S
NR-25	50 feet from Existing SR 65	Res.	B [1]	49.6	63.4 [3]	+13.8	S
NR-26	NW corner of SR 65/Westwood Blvd	Comm.	C[2]	43.4	N/A	N/A	S, A/E
NR-27	100 feet North of D13	Res.	B [1]	43.4	N/A	N/A	N/A
NR-28	100 feet North of D13	Res.	B [1]	43.4	N/A	N/A	N/a
NR-31	3-D Development	Res.	B [1]	43.4	71.0 [3]	27.6	S, A/E
NR-30	3-D Development	Res.	B [1]	43.4	70.7 [3]	+27.3	S, A/E
NR-31	Lincoln West Development	Res.	B [1]	45.6	68.6 [3]	+23.0	S, A/E

[1] 67 dB [2] 72 dB [3] Modeled [4] Predicted for design year 2025 [5] Impact Types:
None - no impacts identified, A/E - noise abatement criteria approached or exceeded, S - existing noise level substantially increased, N/A- Not Applicable

Table 4-11 Summary of Traffic Noise Modeling Results AAC2

Receiver ID	Location Description	Type of Development	Noise Abate-ment Category Leq (h)	Existing Measured Noise Level dBA Leq (h)	Predicted[4] Worst Noise Hour Noise Level dBA Leq (h)	Noise Increase (+) or Decrease (-)	Impact Type[6]
NR-1	6355 North SR 65	Res.	B[1]	49.1	60.5 [3]	+11.4	None
NR-2	100m north of Riosa Road	Res.	B[1]	45.6	62.6[3] [3]	+17.0	S
NR-3	100 feet from Existing SR 65	Res.	B[1]	54	55.2 [3]	+1.2	None
NR-4	4710 North Dowd Road	Res.	B[1]	45.6	55.5 [3]	+9.9	None
NR-5	4221 North Dowd Road	Res.	B[1]	51.3	64.6 [3]	+13.3	S
NR-6	700 feet from Existing SR 65	Res.	B[1]	49.6	50.7 [3]	+1.1	None
NR-7	2780 Dowd Road	Res.	B[1]	38.1	51.2 [3]	+13.1	S
NR-8	2000 feet from Existing SR 65, 1000 feet from C1 and C2	Res.	B[1]	48.1	59.1 [3]	+11.0	None
NR-9	200m south of Wise Road	Res.	B[1]	36.4	52.4 [3]	+16.0	S
NR-10a	Along Wise Road	Res.	B[1]	54.4	63.6 [3]	+9.2	None
NR-10b	Along Wise Road	Res.	B[1]	52.7	63.2 [3]	+10.5	None
NR-11	Along Airport Road	Res.	B[1]	36.6	N/A	N/A	N/A
NR-12	Along Nicolaus Road	Res.	B[1]	46	N/A	N/A	N/A
NR-13	On Rockwell Lane	Res.	B[1]	43.3	N/A	N/A	N/A
NR-14	Along Moore Road	Res.	B[1]	43.4	53.0 [3]	+9.6	None
NR-15	400 feet east of C1 and C2	Res.	B[1]	45.6	60.5 [3]	+14.9	S
NR-16a	North end of El Camino Verde	Res.	B[1]	47.7	60.7 [3]	+13.0	S
NR-16b	1245 Cobblestone Dr	Res.	B[1]	47.9	60.1 [3]	+12.2	S
NR-17	2000 feet from SR 65	Res.	B[1]	48.1	61.3 [3]	+13.2	S
NR-18	Lincoln Crossing	Res.	B[1]	54.4	70.0 [3]	+15.6	S, A/E
NR-19	Lincoln Crossing	Res.	B[1]	54.4	65.9 [3]	+11.5	S, A/E
NR-20	Lincoln Crossing	Res.	B[1]	43.4	70.3 [3]	+26.9	S, A/E
NR-21	50 feet from Existing SR 65	Res.	B[1]	45.6	69.6 [3]	+24.0	S, A/E
NR-22	50 feet from Existing SR 65, south of Nicolaus Road	Res.	B[1]	47.9	66.4 [3]	+18.5	S, A/E
NR-23	50 feet south of Nicolaus Road	Res.	B[1]	52.7	65.2 [3]	+12.5	S
NR-24	50 feet from C1	Res.	B[1]	48.1	63.0 [3]	+14.9	S
NR-25	50 feet from Existing SR 65	Res.	B[1]	49.6	62.2 [3]	+12.6	S
NR-26	NW corner of SR 65/Westwood Blvd	Comm.	C[2]	43.4	N/A	N/A	N/A
NR-27	100 feet North of D13	Res.	B[1]	43.4	N/A	N/A	N/A
NR-28	100 feet North of D13	Res.	B[1]	43.4	N/A	N/A	N/A
NR-29	3-D Development	Res.	B[1]	43.4	69.6 [5]	+26.2	S, A/E
NR-30	3-D Development	Res.	B[1]	43.4	68.7 [5]	+25.3	S, A/E
NR-31	Lincoln West Development	Res.	B[1]	45.6	64.6 [5]	+19.0	S

[1] 67 dB [2] 72 dB [3] Modeled [4] Predicted for design year 2025 [5] Measured

[6]Impact Types: None - no impacts identified, A/E - noise abatement criteria approached or exceeded, S - existing noise level substantially increased, N/A- Not Applicable

Table 4-12 Summary of Traffic Noise Modeling Results D1

Receiver ID	Location Description	Type of Development	Noise Abate-ment Category Leq (h)	Existing Measured Noise Level dBA Leq (h)	Predicted [4] Worst Noise Hour Noise Level dBA Leq (h)	Noise Increase (+) or Decrease (-)	Impact Type[5]
NR-1	6355 North SR 65	Res.	B[1]	49.1	56.8 [3]	+7.7	S
NR-2	100m north of Riosa Road	Res.	B[1]	45.6	57.3 [3]	+11.7	None
NR-3	100 feet from Existing SR 65	Res.	B[1]	54	52.9 [3]	0	None
NR-4	4710 North Dowd Road	Res.	B[1]	45.6	60.5 [3]	+14.9	S
NR-5	4221 North Dowd Road	Res.	B[1]	51.3	63.1 [3]	+11.8	None
NR-6	700 feet from Existing SR 65	Res.	B[1]	49.6	56.6 [3]	+7	None
NR-7	2780 Dowd Road	Res.	B[1]	38.1	55.2 [3]	+17.1	S
NR-8	2000 feet from Existing SR 65, 1000 feet from C1 and C2	Res.	B[1]	48.1	N/A	N/A	N/A
NR-9	200m south of Wise Road	Res.	B[1]	36.4	N/A	N/A	N/A
NR-10a	Along Wise Road	Res.	B[1]	54.4	N/A	N/A	N/A
NR-10b	Along Wise Road	Res.	B[1]	52.7	N/A	N/A	N/A
NR-11	Along Airport Road	Res.	B[1]	36.6	54.7 [3]	+18.1	S
NR-12	Along Nicolaus Road	Res.	B[1]	46	60.5 [3]	+14.5	S
NR-13	On Rockwell Lane	Res.	B[1]	43.3	68.2 [3]	+24.9	S, A/E
NR-14	Along Moore Road	Res.	B[1]	43.4	68.6 [3]	+25.2	S, A/E
NR-15	400 feet east of C1 and C2	Res.	B[1]	45.6	N/A	N/A	N/A
NR-16a	North end of El Camino Verde	Res.	B[1]	47.7	N/A	N/A	N/A
NR-16b	1245 Cobblestone Dr	Res.	B[1]	47.9	N/A	N/A	N/A
NR-17	2000 feet from SR 65	Res.	B[1]	48.1	58.6 [3]	+10.5	None
NR-18	Lincoln Crossing	Res.	B[1]	54.4	65.7 [3]	+11.3	S, A/E
NR-19	Lincoln Crossing	Res.	B[1]	54.4	73.7 [3]	+19.3	S, A/E
NR-20	Lincoln Crossing	Res.	B[1]	43.4	59.1 [3]	+15.7	S
NR-21	50 feet from Existing SR 65	Res.	B[1]	45.6	57.0 [3]	+11.4	S
NR-22	50 feet from Existing SR 65, south of Nicolaus Road	Res.	B[1]	47.9	N/A	N/A	N/A
NR-23	50 feet south of Nicolaus Road	Res.	B[1]	52.7	N/A	N/A	N/A
NR-24	50 feet from C1	Res.	B[1]	48.1	N/A	N/A	N/A
NR-25	50 feet from Existing SR 65	Res.	B[1]	49.6	N/A	N/A	N/A
NR-26	NW corner of SR 65/ Westwood Blvd	Comm.	C[2]	43.4	N/A	N/A	N/A
NR-27	100 feet North of D13	Res.	B[1]	43.4	60.2 [3]	+16.8	S
NR-28	100 feet North of D13	Res.	B[1]	43.4	59.7 [3]	+16.3	S
NR-29	3-D Development	Res.	B[1]	43.4	67.9 [3]	+24.5	S, A/E
NR-30	3-D Development	Res.	B[1]	43.4	69.1 [3]	+25.7	S, A/E
NR-31	Lincoln West Development	Res.	B[1]	45.6	N/A	N/A	N/A

[1] 67 dB [2] 72 dB [3] Modeled [4] Predicted for design year 2025 [5] Impact Types:
None - no impacts identified, A/E - noise abatement criteria approached or exceeded, S - existing noise level substantially increased, N/A- Not Applicable

Table 4-13 Summary of Traffic Noise Modeling Results D13

Receiver ID	Location Description	Type of Development	Noise Abate-ment Category Leq (h)	Existing Noise Level dBA Leq (h)	Predicted [4] Worst Noise Hour Noise Level dBA Leq (h)	Noise Increase (+) or Decrease (-)	Impact Type[5]
NR-1	6355 North SR 65	Res.	B[1]	49.1	56.8 [3]	+7.7	None
NR-2	100m north of Riosa Road	Res.	B[1]	45.6	57.3 [3]	+11.7	None
NR-3	100 feet from Existing SR 65	Res.	B[1]	54	55.0 [3]	+1.0	None
NR-4	4710 North Dowd Road	Res.	B[1]	45.6	60.5 [3]	+14.9	S
NR-5	4221 North Dowd Road	Res.	B[1]	51.3	63.1 [3]	+11.8	None
NR-6	700 feet from Existing SR 65	Res.	B[1]	49.6	56.6 [3]	+7.0	None
NR-7	2780 Dowd Road	Res.	B[1]	38.1	57.6 [3]	+19.5	S
NR-8	2000 feet from Existing SR 65, 1000 feet from C1 and C2	Res.	B[1]	48.1	N/A	N/A	N/A
NR-9	200m south of Wise Road	Res.	B[1]	36.4	N/A	N/A	N/A
NR-10a	Along Wise Road	Res.	B[1]	54.4	N/A	N/A	N/A
NR-10b	Along Wise Road	Res.	B[1]	52.7	N/A	N/A	N/A
NR-11	Along Airport Road	Res.	B[1]	36.6	51.6 [3]	+15	S
NR-12	Along Nicolaus Road	Res.	B[1]	46	56.2 [3]	+10.2	None
NR-13	On Rockwell Lane	Res.	B[1]	43.3	57.9 [3]	+14.6	S
NR-14	Along Moore Road	Res.	B[1]	43.4	60.1 [3]	+16.7	S
NR-15	400 feet east of C1 and C2	Res.	B[1]	45.6	53.1 [3]	+7.5	None
NR-16a	North end of El Camino Verde	Res.	B[1]	47.7	N/A	N/A	N/A
NR-16b	1245 Cobblestone Dr	Res.	B[1]	47.9	N/A	N/A	N/A
NR-17	2000 feet from SR 65	Res.	B[1]	48.1	58.1 [3]	+10	None
NR-18	Lincoln Crossing	Res.	B[1]	54.4	69.5 [3]	+15.1	S, A/E
NR-19	Lincoln Crossing	Res.	B[1]	54.4	68.0 [3]	+13.6	S, A/E
NR-20	Lincoln Crossing	Res.	B[1]	43.4	63.2 [3]	+19.8	S
NR-21	50 feet from Existing SR 65	Res.	B[1]	45.6	55.6 [3]	+10	None
NR-22	50 feet from Existing SR 65, south of Nicolaus Road	Res.	B[1]	47.9	N/A	N/A	N/A
NR-23	50 feet south of Nicolaus Road	Res.	B[1]	52.7	N/A	N/A	N/A
NR-24	50 feet from C1 Alignment	Res.	B[1]	48.1	N/A	N/A	N/A
NR-25	50 feet from Existing SR 65	Res.	B[1]	49.6	N/A	N/A	N/A
NR-26	NW corner of SR 65/Westwood Blvd	Comm.	C[2]	43.4	N/A	N/A	N/A
NR-27	100 feet North of D13 Alignment	Res.	B[1]	43.4	73.6 [3]	+30.2	S, A/E
NR-28	100 feet North of D13	Res.	B[1]	43.4	65.9 [3]	+22.5	S, A/E
NR-29	3-D Development	Res.	B[1]	43.4	65.8 [3]	+22.4	S, A/E
NR-30	3-D Development	Res.	B[1]	43.4	67.8 [3]	+24.4	S, A/E
NR-31	Lincoln West Development	Res.	B[1]	45.6	N/A	N/A	N/A

[1] 67 dB [2] 72 dB [3] Modeled [4] Predicted for design year 2025 [5] Impact Types:
None - no impacts identified, A/E - noise abatement criteria approached or exceeded, S - existing noise level substantially increased, N/A- Not Applicable

4.6.2 Noise Abatement/Mitigation Measures

Long Term noise impact abatement measures

Under Federal/FHWA regulations (23 CFR 772) and the Department's policy, noise abatement must be considered when the project results in a noise impact and feasible and reasonable abatement measures must be included in the draft environmental documentation. Receptor locations that are predicted to be noise impacted are summarized in Table 4-10 through Table 4-13. Noise abatement is considered not reasonable at commercial use sites, as soundwalls are generally not desired for these land use types. Rural, single family residences would be not obviously reasonable from a cost perspective. No further evaluation was made at these locations. A final decision on sound walls, including the specific locations and heights, will be made by the Project Development Team (PDT) after final design has been completed, and local government and public input has been made. Table 4-14 through Table 4-17 discuss the soundwalls evaluated as noise abatement, including cost effectiveness.

Table 4-14 Soundwalls Evaluated for Abatement Alternative A5C1

Sound Wall	Recvr(s) Protected	SW Height	Length (ft)	SW Location Description	Total Reasonable Allowance	Engr's Est
C1.1	19	3.0 m (10 ft)	671 m (2,200 ft)	N/B SR65 to Westwood Off-Ramp 163+00 to 185+00	NF	NF
		3.6 m (12 ft)	671 m (2,200 ft)	N/B SR65 to Westwood Off-Ramp 163+00 to 185+00	NF	NF
		4.3 m (14 ft)	671 m (2,200 ft)	N/B SR65 to Westwood Off-Ramp 163+00 to 185+00	$1,890,000	$664,800
		4.6 m (16ft)	671 m (2,200 ft)	N/B SR65 to Westwood Off-Ramp 163+00 to 185+00	$1,890,000	$997,200
C1.2	20,29 (3-D Dev.)	3.0 m (10 ft)	1859 m (6,100 ft)	W/B Westwood to N/B SR65 185+00 to 246+00	NF	NF
		3.6 m (12 ft)	1859 m (6,100 ft)	W/B Westwood to N/B SR65 185+00 to 246+00	NF	NF
		4.3 m (14 ft)	1859 m (6,100 ft)	W/B Westwood to N/B SR65 185+00 to 246+00	$1,591,000	$1,843,300
		4.6 m (16ft)	1859 m (6,100 ft)	W/B Westwood to N/B SR65 185+00 to 246+00	$1,677,000	$2,764,900
C1.3	30 (3-D Dev.	3.0 m (10 ft)	853 m (2,800 ft)	S/B SR65 246+00 to 218+00	$1,560,000	$604,400
		3.6 m (12 ft)	853 m (2,800 ft)	S/B SR65 246+00 to 218+00	$1,560,000	$725,200
		4.3 m (14 ft)	853 m (2,800 ft)	S/B SR65 246+00 to 218+00	$1,640,000	$846,100
		4.6 m (16ft)	853 m (2,800 ft)	S/B SR65 246+00 to 218+00	$1,640,000	$1,269,100
C1.4	18	3.0 m (10 ft)	671 m (2,200 ft)	E/B Westwood to S/B SR65 185+00 to 163+00	$2,220,000	$474,900
		3.6 m (12 ft)	671 m	E/B Westwood to S/B SR65	$2,340,000	$569,800

Sound Wall	Recvr(s) Protected	SW Height	Length (ft)	SW Location Description	Total Reasonable Allowance	Engr's Est
			(2,200 ft)	185+00 to 163+00		
		4.3 m (14 ft)	671 m (2,200 ft)	E/B Westwood to S/B SR65 185+00 to 163+00	$2,340,000	$664,800
		4.6 m (16ft)	671 m (2,200 ft)	E/B Westwood to S/B SR65 185+00 to 163+00	$2,340,000	$997,200
C1.5	15,21	3.0 m (10 ft)	1097 m (3,600 ft)	N/B SR65 253+00 to 289+00	NF	NF
		3.6 m (12 ft)	1097 m (3,600 ft)	N/B SR65 253+00 to 289+00	$2,769,000	$932,400
		4.3 m (14 ft)	1097 m (3,600 ft)	N/B SR65 253+00 to 289+00	$2,769,000	$1,087,800
		4.6 m (16 ft)	1097 m (3,600 ft)	N/B SR65 253+00 to 289+00	$2,911,000	$1,631,700
C1.6	16a, 16b	3.0 m (10 ft)	1707 m (5,600 ft)	S/B SR65 to Nicolaus Off-Ramp 356+00 to 300+00	NF	NF
		3.6 m (12 ft)	1707 m (5,600 ft)	S/B SR65 to Nicolaus Off-Ramp 356+00 to 300+00	NF	NF
		4.3 m (14 ft)	1707 m (5,600 ft)	S/B SR65 to Nicolaus Off-Ramp 356+00 to 300+00	$1,184,000	$1,692,200
		4.6 m (16ft)	1707 m (5,600 ft)	S/B SR65 to Nicolaus Off-Ramp 356+00 to 300+00	$1,184,000	$2,538,200
C1.7a[1]	22,23	3.0 m (10 ft)	396 m (1,300 ft)	Nicolaus to S/B SR65 300+00 to 287+00	NF	NF
		3.6 m (12 ft)	396 m (1,300 ft)	Nicolaus to S/B SR65 300+00 to 287+00	NF	NF
		4.3 m (14 ft)	396 m (1,300 ft)	Nicolaus to S/B SR65 300+00 to 287+00	$962,000	$392,900
		4.6 m (16ft)	396 m (1,300 ft)	Nicolaus to S/B SR65 300+00 to 287+00	$962,000	$589,300
C1.7b[1]	31 (Lincoln West Dev.)	3.0 m (10 ft)	518 m (1,700 ft)	S/B SR65 275+00 to 258+00	$1,155,000	$367,000
		3.6 m (12 ft)	518 m (1,700 ft)	S/B SR65 275+00 to 258+00	$1,155,000	$440,300
		4.3 m (14 ft)	518 m (1,700 ft)	S/B SR65 275+00 to 258+00	$1,221,000	$513,700
		4.6 m (16ft)	518 m (1,700 ft)	S/B SR65 275+00 to 258+00	$1,221,000	$770,600
C1.13	10a	3.0 m (10 ft)	304.8 m (1,000ft)	E/B Wise Road	NF	NF
		3.6 m (12 ft)	304.8 m (1,000ft)	E/B Wise Road	$66,000	$259,000
		4.3 m (14 ft)	304.8 m (1,000ft)	E/B Wise Road	$66,000	$302,200
		4.6 m (16ft)	304.8 m (1,000ft)	E/B Wise Road	$66,000	$453,300
C1.14	10b	3.0 m (10 ft)			NF	NF
		3.6 m (12 ft)			NF	NF
		4.3 m (14 ft)			NF	NF
		4.6 m (16ft)			NF	NF

Sound Wall	Recvr(s) Protected	SW Height	Length (ft)	SW Location Description	Total Reasonable Allowance	Engr's Est
C1.11	7	3.0 m (10 ft)			NF	NF
		3.6 m (12 ft)			NF	NF
		4.3 m (14 ft)			NF	NF
C1.12	8	3.0 m (10 ft)			NF	NF
		3.6 m (12 ft)			NF	NF
		4.3 m (14 ft)			NF	NF
		4.6 m (16ft)			NF	NF
C1.10	4,5	3.0 m (10 ft)	3444 m (11,300 ft)	N/B SR65 532+00 to 645+00	$99,000	$111,000
		3.6 m (12 ft)	3444 m (11,300 ft)	N/B SR65 532+00 to 645+00	$99,000	$2,926,700
		4.3 m (14 ft)	3444 m (11,300 ft)	N/B SR65 532+00 to 645+00	$105,000	$3,414,500
		4.6 m (16ft)	3444 m (11,300 ft)	N/B SR65 532+00 to 645+00	$105,000	$5,121,800
C1.8	1	3.0 m (10 ft)			NF	NF
		3.6 m (12 ft)			NF	NF
		4.3 m (14 ft)			NF	NF
		4.6 m (16ft)			NF	NF
C1.9	2	3.0 m (10 ft)	427 m (1,400ft)	W/B Riosa N/B SR65 532+00 to 645+00	NF	NF
		3.6 m (12 ft)	304.8 m (1,000ft)	W/B Riosa N/B SR65 532+00 to 645+00	NF	NF
		4.3 m (14 ft)	304.8 m (1,000ft)	W/B Riosa N/B SR65 532+00 to 645+00	NF	NF
		4.6 m (16ft)	304.8 m (1,000ft)	W/B Riosa N/B SR65 532+00 to 645+00	NF	NF

[1]City of Lincoln sewage facility left unshielded
NF Not Feasible, NR No Receptors

Table 4-15 Soundwalls Evaluated for Abatement Alternative AAC2

Sound Wall	Recvr(s) Protected	SW Height	Length (ft)	SW Location Description	Total Reasonable Allowance	Engr's Est
C2.1	19	3.0 m (10 ft)	671 m (2,200 ft)	N/B SR65 to Westwood Off-Ramp 165+00 to 187+00	NF	NF
		3.6 m (12ft)	671 m (2,200 ft)	N/B SR65 to Westwood Off-Ramp 165+00 to 187+00	NF	NF
		4.3 m (14 ft)	671 m (2,200 ft)	N/B SR65 to Westwood Off-Ramp 165+00 to 187+00	$1,890,000	$664,800
		4.6 m (16 ft)	671 m (2,200 ft)	N/B SR65 to Westwood Off-Ramp 165+00 to 187+00	$1,890,000	$997,200
C2.2	20, 29 (3-D Dev.)	3.0 m (10 ft)	1859 m (6,100 ft)	W/B Westwood to N/B SR65 187+00 to 248+00	NF	NF
		3.6 m (12ft)	1859 m (6,100 ft)	W/B Westwood to N/B SR65 187+00 to 248+00	$1,591,000	$1,579,900
		4.3 m (14 ft)	1859 m (6,100 ft)	W/B Westwood to N/B SR65 187+00 to 248+00	$1,591,000	$1,843,300

Sound Wall	Recvr(s) Protected	SW Height	Length (ft)	SW Location Description	Total Reasonable Allowance	Engr's Est
		4.6 m (16 ft)	1859 m (6,100 ft)	W/B Westwood to N/B SR65 187+00 to 248+00	$1,591,000	$2,764,900
C2.3[1]	30 (3-D Dev)	3.0 m (10 ft)	975 m (3,200ft)	S/B SR65 248+00 to 216+00	$1,400,000	$690,700
		3.6 m (12ft)	975 m (3,200ft)	S/B SR65 248+00 to 216+00	$1,480,000	$828,800
		4.3 m (14 ft)	975 m (3,200ft)	S/B SR65 248+00 to 216+00	$1,480,000	$967,000
		4.6 m (16 ft)	975 m (3,200ft)	S/B SR65 248+00 to 216+00	$1,560,000	$1,450,400
C2.4	18	3.0 m (10 ft)	671 m (2,200 ft)	E/B SR65 Westwood to S/B SR65 187+00 to 165+00	$2,220,000	$474,900
		3.6 m (12ft)	671 m (2,200 ft)	E/B SR65 Westwood to S/B SR65 187+00 to 165+00	$2,220,000	$569,800
		4.3 m (14 ft)	671 m (2,200 ft)	E/B SR65 Westwood to S/B SR65 187+00 to 165+00	$2,340,000	$664,800
		4.6 m (16 ft)	671 m (2,200 ft)	E/B SR65 Westwood to S/B SR65 187+00 to 165+00	$2,340,000	$997,200
C2.5	15,21	3.0 m (10 ft)	1402 m (4,600 ft)	N/B SR65 to Nicolaus Off-Ramp 257+00 to 303+00	NF	NF
		3.6 m (12ft)	1402 m (4,600 ft)	N/B SR65 to Nicolaus Off-Ramp 257+00 to 303+00	NF	NF
		4.3 m (14 ft)	1402 m (4,600 ft)	N/B SR65 to Nicolaus Off-Ramp 257+00 to 303+00	$2,145,000	$1,390,000
		4.6 m (16 ft)	1402 m (4,600 ft)	N/B SR65 to Nicolaus Off-Ramp 257+00 to 303+00	$2,145,000	$2,085,000
C2.6nb	25	3.0 m (10 ft)			NF	NF
		3.6 m (12ft)			NF	NF
		4.3 m (14 ft)			NF	NF
		4.6 m (16 ft)			NF	NF
C2.6sb[2]	16a	3.0 m (10 ft)	1494 m (4,900ft)	S/B SR65 Venture to Nicolaus OR 303+00 to 352+00	NF	NF
		3.6 m (12ft)	1494 m (4,900ft)	S/B SR65 Venture to Nicolaus OR 303+00 to 352+00	NF	NF
		4.3 m (14 ft)	1494 m (4,900ft)	S/B SR65 Venture to Nicolaus OR 303+00 to 352+00	NF	NF
		4.6 m (16 ft)	1494 m (4,900ft)	S/B SR65 Venture to Nicolaus OR 303+00 to 352+00	$1,050,000	$2,221,000
C2.6sb[3] (altern)	16a	3.0 m (10 ft)	610 m (2,000ft)	S/B SR65 335+00 to 355+00	NF	NF
		3.6 m (12ft)	610 m (2,000ft)	S/B SR65 335+00 to 355+00	NF	NF
		4.3 m (14 ft)	610 m (2,000ft)	S/B SR65 335+00 to 355+00	NF	NF
		4.6 m (16 ft)	610 m (2,000ft)	S/B SR65 335+00 to 355+00	$700,000	$906,500
C2.7[4]	22,23,30 (Lincoln West Dev)	3.0 m (10 ft)	1311 m (4,300 ft)	E/B Nicolaus to S/B SR65 303+00 to 260+00	NF	NF

Sound Wall	Recvr(s) Protected	SW Height	Length (ft)	SW Location Description	Total Reasonable Allowance	Engr's Est
		3.6 m (12ft)	1311 m (4,300 ft)	E/B Nicolaus to S/B SR65 303+00 to 260+00	NF	NF
		4.3 m (14 ft)	1311 m (4,300 ft)	E/B Nicolaus to S/B SR65 303+00 to 260+00	NF	NF
		4.6 m (16 ft)	1311 m (4,300 ft)	E/B Nicolaus to S/B SR65 303+00 to 260+00	$1,855,000	$1,949,000
C.2.12	10a	3.0 m (10 ft)			NF	NF
		3.6 m (12ft)			NF	NF
		4.3 m (14 ft)			NF	NF
		4.6 m (16 ft)			NF	NF
C2.13	10b	3.0 m (10 ft)	304.8 m (1,000ft)	E/B Wise Road near SR65	NR	NR
		3.6 m (12ft)	304.8 m (1,000ft)	E/B Wise Road near SR65	NR	NR
		4.3 m (14 ft)	304.8 m (1,000ft)	E/B Wise Road near SR65	NR	NR
		4.6 m (16 ft)	304.8 m (1,000ft)	E/B Wise Road near SR65	NR	NR
C2.10	4	3.0 m (10 ft)	6187 m (20,300ft)	N/B SR65 450+00 to 650+00	NR	NR
		3.6 m (12ft)	6187 m (20,300ft)	N/B SR65 450+00 to 650+00	NR	NR
		4.3 m (14 ft)	6187 m (20,300ft)	N/B SR65 450+00 to 650+00	NR	NR
		4.6 m (16 ft)	6187 m (20,300ft)	N/B SR65 450+00 to 650+00	NR	NR
C2.11	5	3.0 m (10 ft)	5060 m (16,600ft)	S/B SR65 650+00 to 490+00	$74,000	$3,582,900
		3.6 m (12ft)	5060 m (16,600ft)	S/B SR65 650+00 to 490+00	$74,000	$4,299,400
		4.3 m (14 ft)	5060 m (16,600ft)	S/B SR65 650+00 to 490+00	$78,000	$5,016,000
		4.6 m (16 ft)	5060 m (16,600ft)	S/B SR65 650+00 to 490+00	$78,000	$7,524,000
C2.8	2	3.0 m (10 ft)			NF	NF
		3.6 m (12ft)			NF	NF
		4.3 m (14 ft)			NF	NF
		4.6 m (16 ft)			NF	NF
C2.9	1	3.0 m (10 ft)			NF	NF
		3.6 m (12ft)			NF	NF
		4.3 m (14 ft)			NF	NF
		4.6 m (16 ft)			NF	NF

[1] Southwest quad of SR65 @ Wstwood is commerical (NR-26)
[2] 16b N/F for all heights
[3] Shields 16a only
[4] If homes are condemned West of SR65 from 289+00 to 275+00 SW may be dropped for this segment. Undetermined at this time
NF- Not Feasible, NR- No Receptors

Table 4-16 Soundwalls Evaluated for Abatement Alternative D1

Sound Wall	Recvr(s) Protected	SW Height	Length (ft)	SW Location Description	Total Reasonable Allowance	Engr's Est
D1.1	19	3.0 m (10 ft)	671 m (2,200 ft)	N/B SR65 to Westwood Off-Ramp 168+00 to 190+00	$2,106,000	$474,900
		3.6 m (12ft)	671 m (2,200 ft)	N/B SR65 to Westwood Off-Ramp 168+00 to 190+00	$2,106,000	$569,800
		4.3 m (14 ft)	671 m (2,200 ft)	N/B SR65 to Westwood Off-Ramp 168+00 to 190+00	$2,214,000	$664,800
		4.6m (16 ft)	671 m (2,200 ft)	N/B SR65 to Westwood Off-Ramp 168+00 to 190+00	$2,214,000	$997,200
D1.2a[1]	20	3.0 m (10 ft)	610 m (2,000ft)	W/B Westwood to N/B SR65 190+00 to 210+00	NF	NF
		3.6 m (12ft)	610 m (2,000ft)	W/B Westwood to N/B SR65 190+00 to 210+00	NF	NF
		4.3 m (14 ft)	610 m (2,000ft)	W/B Westwood to N/B SR65 190+00 to 210+00	$700,000	$604,400
		4.6 m (16ft)	610 m (2,000ft)	W/B Westwood to N/B SR65 190+00 to 210+00	$700,000	$906,500
D1.2b[1]	29 (3-D Dev.)	3.0 m (10 ft)	610 m (2,000ft)	N/B SR65 220+00 to 240+00	NF	NF
		3.6 m (12ft)	610 m (2,000ft)	N/B SR65 220+00 to 240+00	$805,000	$518,000
		4.3 m (14 ft)	610 m (2,000ft)	N/B SR65 220+00 to 240+00	$851,000	$604,400
		4.6m (16 ft)	610 m (2,000ft)	N/B SR65 220+00 to 240+00	$851,000	$906,500
D1.3[2]	30 (3-D Development)	3.0 m (10 ft)	610 m (2,000ft)	S/B SR65 240+00 to 220+00	$1,400,000	$431,700
		3.6 m (12ft)	610 m (2,000ft)	S/B SR65 240+00 to 220+00	$1,480,000	$518,000
		4.3 m (14 ft)	610 m (2,000ft)	S/B SR65 240+00 to 220+00	$1,480,000	$604,400
		4.6 m (16ft)	610 m (2,000ft)	S/B SR65 240+00 to 220+00	$1,560,000	$906,500
D1.4	18	3.0 m (10 ft)	671 m (2,200 ft)	E/B Westwood to S/B SR65 190+00 to 168+00	$2,100,000	$474,900
		3.6 m (12ft)	671 m (2,200 ft)	E/B Westwood to S/B SR65 190+00 to 168+00	$2,100,000	$569,800
		4.3 m (14 ft)	671 m (2,200 ft)	E/B Westwood to S/B SR65 190+00 to 168+00	$2,100,000	$664,800
		4.6 m (16ft)	671 m (2,200 ft)	E/B Westwood to S/B SR65 190+00 to 168+00	$2,220,000	$997,200
D1.5	14	3.0 m (10 ft)	671 m (2,200 ft)	N/B65 249+00 to 271+00	$37,000	$474,900
		3.6 m (12ft)	671 m (2,200 ft)	N/B65 249+00 to 271+00	$37,000	$569,800
		4.3 m (14 ft)	671 m (2,200 ft)	N/B65 249+00 to 271+00	$39,000	$664,800
		4.6 m (16ft)	671 m (2,200 ft)	N/B65 249+00 to 271+00	$39,000	$997,200
D1.6	13	3.0 m (10 ft)	823 m (2,700ft)	N/B65 322+00 to 349+00	$1,036,000	$582,800

Sound Wall	Recvr(s) Protected	SW Height	Length (ft)	SW Location Description	Total Reasonable Allowance	Engr's Est
		3.6 m (12ft)	823 m (2,700ft)	N/B65 322+00 to 349+00	$1,036,000	$699,300
		4.3 m (14 ft)	823 m (2,700ft)	N/B65 322+00 to 349+00	$1,092,000	$815,900
		4.6 m (16ft)	823 m (2,700ft)	N/B65 322+00 to 349+00	$1,092,000	$1,223,800
D1.11	12	3.0 m (10 ft)			NF	NF
		3.6 m (12ft)			NF	NF
		4.3 m (14 ft)			NF	NF
		4.6 m (16ft)			NF	NF
D1.10	7	3.0 m (10 ft)	1433 m (4,700ft)	N/B SR65 505+00 to 552+00	NF	NF
		3.6 m (12ft)	1433 m (4,700ft)	N/B SR65 505+00 to 552+00	NF	NF
		4.3 m (14 ft)	1433 m (4,700ft)	N/B SR65 505+00 to 552+00	NF	NF
		4.6 m (16f ft)	1433 m (4,700ft)	N/B SR65 505+00 to 552+00	NF	NF
D1.7	4	3.0 m (10 ft)	823 m (2,700ft)	N/B SR65 621+00 to 648+00	NF	NF
		3.6 m (12ft)	823 m (2,700ft)	N/B SR65 621+00 to 648+00	$35,000	$699,300
		4.3 m (14 ft)	823 m (2,700ft)	N/B SR65 621+00 to 648+00	$35,000	$815,900
		4.6 m (ft)	823 m (2,700ft)	N/B SR65 621+00 to 648+00	$35,000	$1,223,800
D1.9	2	3.0 m (10 ft)	427 m (1,400ft)	W/B Riosa Rd to N/B SR65 691+00 to 701+00	$210,000	$302,200
		3.6 m (12ft)	427 m (1,400ft)	W/B Riosa Rd to N/B SR65 691+00 to 701+00	$210,000	$362,600
		4.3 m (14 ft)	427 m (1,400ft)	W/B Riosa Rd to N/B SR65 691+00 to 701+00	$210,000	$423,100
		4.6 m (16 ft)	427 m (1,400ft)	W/B Riosa Rd to N/B SR65 691+00 to 701+00	$222,000	$634,600
D1.8	1	3.0 m (10 ft)	1372 m (4,500ft)	N/B SR65 705+00 to 750+00	NR	NR
		3.6 m (12ft)	1372 m (4,500ft)	N/B SR65 705+00 to 750+00	NR	NR
		4.3 m (14 ft)	1372 m (4,500ft)	N/B SR65 705+00 to 750+00	NR	NR
		4.6 m (16 ft)	1372 m (4,500ft)	N/B SR65 705+00 to 750+00	NR	NR

[1] Section of SR65 traverses thru Ag land, [2] SW quad of SR65/Woodside I/C is commercial

NF Not Feasible, NR No Receptors

Table 4-17 Soundwalls Evaluated for Abatement Alternative D13

Sound Wall	Recvr(s) Protected	SW Height	Length (ft)	SW Location Description	Total Reasonable Allowance	Engr's Est
D13.1	19	3.0 m (10 ft)	671 m (2,200 ft)	N/B SR65 to Westwood Off-Ramp 664+00 to 686+00	NF	NF
		3.6 m (12 ft)	671 m (2,200 ft)	N/B SR65 to Westwood Off-Ramp 664+00 to 686+00	$1,890,000	$569,800
		4.3 m (14 ft)	671 m (2,200 ft)	N/B SR65 to Westwood Off-Ramp 664+00 to 686+00	$1,890,000	$664,800
		4.6 m (16 ft)	671 m (2,200 ft)	N/B SR65 to Westwood Off-Ramp 664+00 to 686+00	$1,998,000	$997,200
D13.2	20, 29 (3D Dev)	3.0 m (10 ft)	1859 m (6,100 ft)	W/B Westwood to N/B SR65 686+00 to 747+00	NF	NF
		3.6 m (12 ft)	1859 m (6,100 ft)	W/B Westwood to N/B SR65 686+00 to 747+00	NF	NF
		4.3 m (14 ft)	1859 m (6,100 ft)	W/B Westwood to N/B SR65 686+00 to 747+00	$1,505,000	$1,843,300
		4.6 m (16 ft)	1859 m (6,100 ft)	W/B Westwood to N/B SR65 686+00 to 747+00	$1,591,000	$2,764,900
D13.3	30(3-D Dev	3.0 m (10 ft)	1036 m (3,400ft)	S/B SR65 746+00 to 712+00	NF	NF
	Part of Lincoln Crossing	3.6 m (12 ft)	1036 m (3,400ft)	S/B SR65 746+00 to 712+00	$1,400,000	$880,600
		4.3 m (14 ft)	1036 m (3,400ft)	S/B SR65 746+00 to 712+00	$1,480,000	$1,027,400
		4.6 m (16 ft)	1036 m (3,400ft)	S/B SR65 746+00 to 712+00	$1,480,000	$1,541,100
D13.4	18	3.0 m (10 ft)	671 m (2,200ft)	E/B Westwood to S/B SR65 686+00 to 664+00	NF	NF
		3.6 m (12 ft)	671 m (2,200ft)	E/B Westwood to S/B SR65 686+00 to 664+00	$2,220,000	$569,800
		4.3 m (14 ft)	671 m (2,200ft)	E/B Westwood to S/B SR65 686+00 to 664+00	$2,220,000	$664,800
		4.6 m (16 ft)	671 m (2,200ft)	E/B Westwood to S/B SR65 686+00 to 664+00	$2,340,000	$997,200
D13.6	27,28	3.0 m (10 ft)	488 m (1,600ft)	N/B SR65 765+00 to 781+00	NF	NF
		3.6 m (12 ft)	488 m (1,600ft)	N/B SR65 765+00 to 781+00	NF	NF
		4.3 m (14 ft)	488 m (1,600ft)	N/B SR65 765+00 to 781+00	$2,960,000	$483,500
		4.6 m (16 ft)	488 m (1,600ft)	N/B SR65 765+00 to 781+00	$3,120,000	$725,200
D13.11	14	3.0 m (10 ft)	610 m (2,000ft)	S/B SR65 783+00 to 763+00	NF	NF
		3.6 m (12 ft)	610 m (2,000ft)	S/B SR65 783+00 to 763+00	NF	NF
		4.3 m (14 ft)	610 m (2,000ft)	S/B SR65 783+00 to 763+00	NF	NF
		4.6 m (16 ft)	610 m (2,000ft)	S/B SR65 783+00 to 763+00	NF	NF
D13.10	13	3.0 m (10 ft)	427 m	N/B SR65 833+00 to 847+00	NF	NF

Sound Wall	Recvr(s) Protected	SW Height	Length (ft)	SW Location Description	Total Reasonable Allowance	Engr's Est
			(1,400ft)			
		3.6 m (12 ft)	427 m (1,400ft)	N/B SR65 833+00 to 847+00	NF	NF
		4.3 m (14 ft)	427 m (1,400ft)	N/B SR65 833+00 to 847+00	NF	NF
		4.6 m (16 ft)	427 m (1,400ft)	N/B SR65 833+00 to 847+00	NF	NF
D13.9	11,12	3.0 m (10 ft)	2438 m (8,000ft)	N/B SR65 915+00 to 1005+00	NF	NF
		3.6 m (12 ft)	2438 m (8,000ft)	N/B SR65 915+00 to 1005+00	NF	NF
		4.3 m (14 ft)	2438 m (8,000ft)	N/B SR65 915+00 to 1005+00	NF	NF
		4.6 m (16 ft)	2438 m (8,000ft)	N/B SR65 915+00 to 1005+00	NF	NF
D13.8	7	3.0 m (10 ft)	518 m (1,700ft)	S/B SR65 1043+00 to 1060+00	NF	NF
		3.6 m (12 ft)	518 m (1,700ft)	S/B SR65 1043+00 to 1060+00	NF	NF
		4.3 m (14 ft)	518 m (1,700ft)	S/B SR65 1043+00 to 1060+00	NF	NF
		4.6 m (16 ft)	518 m (1,700ft)	S/B SR65 1043+00 to 1060+00	NF	NF
D13.5	4	3.0 m (10 ft)	945 m (3,100ft)	N/B SR65 1145+00 to 1176+00	NF	NF
		3.6 m (12 ft)	945 m (3,100ft)	N/B SR65 1145+00 to 1176+00	$35,000	$802,900
		4.3 m (14 ft)	945 m (3,100ft)	N/B SR65 1145+00 to 1176+00	$35,000	$936,800
		4.6 m (16 ft)	945 m (3,100ft)	N/B SR65 1145+00 to 1176+00	$35,000	$1,405,100
D13.12	2	3.0 m (10 ft)	1707 m (5,600ft)	W/B Riosa Rd to N/B SR65	NF	NF
		3.6 m (12 ft)	1707 m (5,600ft)	W/B Riosa Rd to N/B SR65	NF	NF
		4.3 m (14 ft)	1707 m (5,600ft)	W/B Riosa Rd to N/B SR65	NF	NF
		4.6 m (16 ft)	1707 m (5,600ft)	W/B Riosa Rd to N/B SR65	NF	NF
D13.7	1	3.0 m (10 ft)	335 m (1,100ft)	N/B SR65 1244+00 to 1255+00	NR	NR
		3.6 m (12 ft)	335 m (1,100ft)	N/B SR65 1244+00 to 1255+00	NR	NR
		4.3 m (14 ft)	335 m (1,100ft)	N/B SR65 1244+00 to 1255+00	NR	NR
		4.6 m (16 ft)	335 m (1,100ft)	N/B SR65 1244+00 to 1255+00	NR	NR

NF- Not Feasible, NR- No Receptors

Long Term Noise Impact Mitigation Measures

Under State/CEQA regulations, an evaluation must be made whether the project or proposed abatement measures result in a Significant Adverse Environmental Effect (SAEE). An SAEE may result when one or both of the following occur: 1) traffic noise impacts predicted are due to substantial noise increases or 2) the proposed noise abatement has the potential for a significant effect on a competing resource such as a designated scenic highway, historical site, endangered species etc.

When determining whether the substantial noise increase would result in an SAEE, consideration must be given to the context and intensity of the substantial increase. Context refers to the project setting and uniqueness, or sensitive nature of the noise receiver(s). Intensity refers to the project induced substantial noise increase, i.e. the increase over the "no-build" condition; it also refers to the number of residential units affected and to the absolute noise levels. Where an SAEE is incurred noise measures are considered mitigation. If the noise mitigation itself is not expected to cause an SAEE then noise mitigation will be a condition of project approval.

Table 4-18 summarizes locations considered SAEE impacted locations while Table 4-19 through Table 4-22 summarize the evaluation of noise mitigation measures. The noise mitigation itself is not considered to result in an SAEE.

Table 4-18 Noise Impacted Areas Considered a SAEE

Alternative	Noise Receiver Location(s)	No. of Impacted Residents
A5C1	NR-16a, NR-16b	29
	NR-19	54
	NR-20, NR-29	43
	NR-30	40
	NR-18	60
	NR-21	54
	NR-22, NR-23	34
	NR-31	25
AAC2	NR-15, NR-21	55
	NR-16a, NR-16b	29
	NR-19	54
	NR-20, NR-29	43
	NR-30	40
	NR-18	60
	NR-22, NR-23, NR-31	59
D1	NR-18	60
	NR-19	54
	NR-20	20
	NR-29	23
	NR-30	40
D13	NR-18	60
	NR-19	54

Alternative	Noise Receiver Location(s)	No. of Impacted Residents
	NR-20, NR-29	43
	NR-30	40
	NR-27, NR-28	50

Table 4-19 Soundwalls evaluated for Mitigation AAC2

Sound Wall	Noise Level Locations	SW Height	Length (ft)	SW Location Description	Noise Level Considered Threshold of Significance (+12 dBA)	Noise Reduction	Noise Level	Threshold of Significance Achievable
C2.5	NR-15, NR-21	3.0 m (10 ft)	1402 m (4,600 ft)	N/B SR65 to Nicolaus Off-Ramp 257+00 to 303+00	57.6	3.6	61.5	No
		3.6 m (12 ft)	1402 m (4,600 ft)	N/B SR65 to Nicolaus Off-Ramp 257+00 to 303+00		4.7	60.4	No
		4.3 m (14 ft)	1402 m (4,600 ft)	N/B SR65 to Nicolaus Off-Ramp 257+00 to 303+00		5.9	59.2	No
		4.6 m (16 ft)	1402 m (4,600 ft)	N/B SR65 to Nicolaus Off-Ramp 257+00 to 303+00		7.0	58.1	No
C2.6sb	NR-16a, NR-16b	3.0 m (10 ft)	1493 m (4,900 ft)	S/B SR65 to Venture to Nicolaus OR 303+00 to 352+00	59.8	2.0	58.4	No
		3.6 m (12 ft)	1493 m (4,900 ft)	S/B SR65 to Venture to Nicolaus OR 303+00 to 352+00		3.0	57.4	No
		4.3 m (14 ft)	1493 m (4,900 ft)	S/B SR65 to Venture to Nicolaus OR 303+00 to 352+00		3.9	56.5	No
		4.6 m (16 ft)	1493 m (4,900 ft)	S/B SR65 to Venture to Nicolaus OR 303+00 to 352+00		4.7	55.7	No
C2.6sb (alt)	NR-16a	3.0 m (10 ft)	610 m (2,000 ft)	S/B SR65 335+00 to 355+00	59.7	2.3	58.4	Yes
		3.6 m (12 ft)	610 m (2,000 ft)	S/B SR65 335+00 to 355+00		3.4	57.3	Yes
		4.3 m (14 ft)	610 m (2,000 ft)	S/B SR65 335+00 to 355+00		4.4	56.3	Yes
		4.6 m (16 ft)	610 m (2,000 ft)	S/B SR65 335+00 to 355+00		5.3	55.4	Yes
C2.4	NR-18	3.0 m	671 m	E/B SR65	66.4	4.6	65.4	Yes

Sound Wall	Noise Level Locations	SW Height	Length (ft)	SW Location Description	Noise Level Considered Threshold of Significance (+12 dBA)	Noise Reduction	Noise Level	Threshold of Significance Achievable
		(10 ft)	(2,200 ft)	Westwodd to S/B SR65 187+00 to 165+00				
		3.6 m (12 ft)	671 m (2,200 ft)	E/B SR65 Westwodd to S/B SR65 187+00 to 165+00		5.7	64.3	Yes
		4.3 m (14 ft)	671 m (2,200 ft)	E/B SR65 Westwodd to S/B SR65 187+00 to 165+00		6.8	63.2	Yes
		4.6 m (16 ft)	671 m (2,200 ft)	E/B SR65 Westwodd to S/B SR65 187+00 to 165+00		7.7	62.3	Yes
C2.1	NR-19	3.0 m (10 ft)	671 m (2,200 ft)	N/B SR65 to Westwood Off-Ramp 165+00 to 187+00	66.6	2.9	63.0	Yes
		3.6 m (12 ft)	671 m (2,200 ft)	N/B SR65 to Westwood Off-Ramp 165+00 to 187+00		3.8	62.1	Yes
		4.3 m (14 ft)	671 m (2,200 ft)	N/B SR65 to Westwood Off-Ramp 165+00 to 187+00		4.7	61.2	Yes
		4.6 m (16 ft)	671 m (2,200 ft)	N/B SR65 to Westwood Off-Ramp 165+00 to 187+00		5.6	60.3	Yes
C2.2	NR-20,NR-29	3.0 m (10 ft)	1859 m (6,100 ft)	W/B Westwood to N/B SR65 187+00 to 248+00	55.4	4.8	65.2	No
		3.6 m (12 ft)	1859 m (6,100 ft)	W/B Westwood to N/B SR65 187+00 to 248+00		6.0	64.0	No
		4.3 m (14 ft)	1859 m (6,100 ft)	W/B Westwood to N/B SR65 187+00 to 248+00		6.7	63.3	No
		4.6 m (16 ft)	1859 m (6,100 ft)	W/B Westwood to N/B SR65 187+00 to 248+00		8.0	62.0	No
C2.7	NR-	3.0 m	1311 m	E/B Nicolaus to	60.7	3.2	62.2	No

Sound Wall	Noise Level Locations	SW Height	Length (ft)	SW Location Description	Noise Level Considered Threshold of Significance (+12 dBA)	Noise Reduction	Noise Level	Threshold of Significance Achievable
	22,23,31	(10 ft)	(4,300 ft)	S/B SR65 303+00 to 260+00				
		3.6 m (12 ft)	1311 m (4,300 ft)	E/B Nicolaus to S/B SR65 303+00 to 260+00		4.0	61.4	No
		4.3 m (14 ft)	1311 m (4,300 ft)	E/B Nicolaus to S/B SR65 303+00 to 260+00		4.7	60.7	Yes
		4.6 m (16 ft)	1311 m (4,300 ft)	E/B Nicolaus to S/B SR65 303+00 to 260+00		5.3	60.1	Yes
C2.3	NR-30	3.0 m (10 ft)	975 m (3,200 ft)	S/B SR65 248+00 to 216+00	55.4	4.9	63.8	No
		3.6 m (12 ft)	975 m (3,200 ft)	S/B SR65 248+00 to 216+00		6.5	62.2	No
		4.3 m (14 ft)	975 m (3,200 ft)	S/B SR65 248+00 to 216+00		7.9	60.8	No
		4.6 m (16 ft)	975 m (3,200 ft)	S/B SR65 248+00 to 216+00		9.1	59.6	No

Table 4-20 Soundwalls evaluated for Mitigation A5C1

Sound Wall	Noise Level Locations	SW Height	Length (ft)	SW Location Description	Noise Level Considered Threshold of Significance (+12 dBA)	Noise Reduction	Noise Level	Threshold of Significance Achievable
C1.6	NR-16a NR-16b	3.0 m (10 ft)	1707 m (5,600ft)	S/B SR65 to Nicolaus Off-Ramp 356+00 to 300+00	59.8	3.9	62.2	No
		3.6 m (12 ft)	1707 m (5,600ft)	S/B SR65 to Nicolaus Off-Ramp 356+00 to 300+00		5.0	61.1	No
		4.3 m (14 ft)	1707 m (5,600ft)	S/B SR65 to Nicolaus Off-Ramp 356+00 to 300+00		6.3	59.8	Yes
		4.6 m (16 ft)	1707 m (5,600ft)	S/B SR65 to Nicolaus Off-Ramp 356+00 to 300+00		7.3	58.8	Yes
C1.4	NR-18	3.0 m (10 ft)	671 m (2,200ft)	E/B Westwood to S/B SR65 185+00 to 163+00	66.4	4.8	65.6	Yes
		3.6 m (12 ft)	671 m (2,200ft)	E/B Westwood to S/B SR65 185+00 to		5.8	64.6	Yes

Sound Wall	Noise Level Locations	SW Height	Length (ft)	SW Location Description	Noise Level Considered Threshold of Significance (+12 dBA)	Noise Reduction	Noise Level	Threshold of Significance Achievable
				163+00				
		4.3 m (14 ft)	671 m (2,200ft)	E/B Westwood to S/B SR65 185+00 to 163+00		6.9	63.5	Yes
		4.6 m (16 ft)	671 m (2,200ft)	E/B Westwood to S/B SR65 185+00 to 163+00		7.8	62.6	Yes
C1.1	NR-19	3.0 m (10 ft)	671 m (2,200ft)	N/B SR65 to Westwood Off-Ramp 163+00 to 185+00	66.6	3.0	63.6	Yes
		3.6 m (12 ft)	671 m (2,200ft)	N/B SR65 to Westwood Off-Ramp 163+00 to 185+00		3.9	62.7	Yes
		4.3 m (14 ft)	671 m (2,200ft)	N/B SR65 to Westwood Off-Ramp 163+00 to 185+00		4.6	62.0	Yes
		4.6 m (16 ft)	671 m (2,200ft)	N/B SR65 to Westwood Off-Ramp 163+00 to 185+00		5.2	61.4	Yes
C1.2	NR-20,NR-29	3.0 m (10 ft)	1859 m (6,100ft)	W/B Westwood to N/B SR65 185+00 to 246+00	55.4	5.1	65.6	No
		3.6 m (12 ft)	1859 m (6,100ft)	W/B Westwood to N/B SR65 185+00 to 246+00		6.4	64.4	No
		4.3 m (14 ft)	1859 m (6,100ft)	W/B Westwood to N/B SR65 185+00 to 246+00		7.3	63.5	No
		4.6 m (16 ft)	1859 m (6,100ft)	W/B Westwood to N/B SR65 185+00 to 246+00		8.5	62.3	No
C1.5	NR-21	3.0 m (10 ft)	1097 m (3,600 ft)	N/B SR65 to Nicolaus Off-Ramp 253+00 to 289+00	57.6	5.3	68.6	No
		3.6 m (12 ft)	1097 m (3,600 ft)	N/B SR65 to Nicolaus Off-Ramp 253+00 to 289+00		6.5	67.4	No
		4.3 m (14 ft)	1097 m (3,600 ft)	N/B SR65 to Nicolaus Off-Ramp 253+00 to 289+00		7.8	66.1	No
		4.6 m (16 ft)	1097 m (3,600 ft)	N/B SR65 to Nicolaus Off-Ramp 253+00 to 289+00		9.4	64.5	No
C1.7a	NR-22, NR-23	3.0 m (10 ft)	396 m (1,300ft)	Nicolaus to S/B SR65 300+00 to 287+00	62.3	5.0	67.4	No
		3.6 m (12 ft)	396 m (1,300ft)	Nicolaus to S/B SR65 300+00 to 287+00		7.0	65.4	No
		4.3 m	396 m	Nicolaus to S/B SR65		8.3	64.1	No

Sound Wall	Noise Level Locations	SW Height	Length (ft)	SW Location Description	Noise Level Considered Threshold of Significance (+12 dBA)	Noise Reduction	Noise Level	Threshold of Significance Achievable
		(14 ft)	(1,300ft)	300+00 to 287+00				
		4.6 m (16 ft)	396 m (1,300ft)	Nicolaus to S/B SR65 300+00 to 287+00		9.3	63.1	No
C1.3	NR-30	3.0 m (10 ft)	853 m (2,800ft)	S/B SR65 246+00 to 218+00	55.4	6.3	64.4	No
		3.6 m (12 ft)	853 m (2,800ft)	S/B SR65 246+00 to 218+00		8.0	62.7	No
		4.3 m (14 ft)	853 m (2,800ft)	S/B SR65 246+00 to 218+00		9.5	61.2	No
		4.6 m (16 ft)	853 m (2,800ft)	S/B SR65 246+00 to 218+00		10.8	59.9	No
C1.7b	NR-31	3.0 m (10 ft)	518 m (1,700ft)	S/B SR65 275+00 to 258+00	57.6	4.7	63.9	No
		3.6 m (12 ft)	518 m (1,700ft)	S/B SR65 275+00 to 258+00		5.7	62.9	No
		4.3 m (14 ft)	518 m (1,700ft)	S/B SR65 275+00 to 258+00		6.8	61.8	No
		4.6 m (16 ft)	518 m (1,700ft)	S/B SR65 275+00 to 258+00		8	60.6	No

Table 4-21 Soundwalls evaluated for Mitigation D1

Sound Wall	Noise Level Locations	SW Height	Length (ft)	SW Location Description	Noise Level Considered Threshold of Significance (+12 dBA)	Noise Reduction	Noise Level	Threshold of Significance Achievable
D1.4	NR-18	3.0 m (10 ft)	671 m (2,200 ft)	E/B Westwood to S/B SR65 190+00 to 168+00	54.4	4.8	60.9	No
		3.6 m (12 ft)	671 m (2,200 ft)	E/B Westwood to S/B SR65 190+00 to 168+00		5.7	60.0	No
		4.3 m (14 ft)	671 m (2,200 ft)	E/B Westwood to S/B SR65 190+00 to 168+00		6.6	59.1	No
		4.6 m (16 ft)	671 m (2,200 ft)	E/B Westwood to S/B SR65 190+00 to 168+00		7.4	58.3	No
D1.1	NR-19	3.0 m (10 ft)	671 m (2,200 ft)	N/B SR65 to Westwood Off-Ramp 168+00 to 190+00	54.4	6.5	67.2	No
		3.6 m (12 ft)	671 m (2,200 ft)	N/B SR65 to Westwood Off-Ramp 168+00 to 190+00		7.8	65.9	No
		4.3 m	671 m	N/B SR65 to		9.1	64.6	No

Sound Wall	Noise Level Locations	SW Height	Length (ft)	SW Location Description	Noise Level Considered Threshold of Significance (+12 dBA)	Noise Reduction	Noise Level	Threshold of Significance Achievable
		(14 ft)	(2,200 ft)	Westwood Off-Ramp 168+00 to 190+00				
		4.6 m (16 ft)	671 m (2,200 ft)	N/B SR65 to Westwood Off-Ramp 168+00 to 190+00		10.4	63.3	No
D1.2a	NR-20	3.0 m (10 ft)	610 m (2,000 ft)	W/B Westwood to N/B SR65 190+00 to 210+00	55.4	3.7	55.4	Yes
		3.6 m (12 ft)	610 m (2,000 ft)	W/B Westwood to N/B SR65 190+00 to 210+00		4.1	55.0	Yes
		4.3 m (14 ft)	610 m (2,000 ft)	W/B Westwood to N/B SR65 190+00 to 210+00		4.5	54.6	Yes
		4.6 m (16 ft)	610 m (2,000 ft)	W/B Westwood to N/B SR65 190+00 to 210+00		4.7	54.4	Yes
D1.2b	NR-29	3.0 m (10 ft)	610 m (2,000 ft)	N/B SR65 220+00 to 240+00	55.4	3.9	64.0	No
		3.6 m (12 ft)	610 m (2,000 ft)	N/B SR65 220+00 to 240+00		5.3	62.6	No
		4.3 m (14 ft)	610 m (2,000 ft)	N/B SR65 220+00 to 240+00		6.5	61.4	No
		4.6 m (16 ft)	610 m (2,000 ft)	N/B SR65 220+00 to 240+00		7.6	60.3	No
D1.3	NR-30	3.0 m (10 ft)	610 m (2,000 ft)	S/B SR65 240+00 to 220+00	55.4	5.1	64.0	No
		3.6 m (12 ft)	610 m (2,000 ft)	S/B SR65 240+00 to 220+00		6.4	62.7	No
		4.3 m (14 ft)	610 m (2,000 ft)	S/B SR65 240+00 to 220+00		7.7	61.4	No
		4.6 m (16 ft)	610 m (2,000 ft)	S/B SR65 240+00 to 220+00		8.8	60.3	No

Table 4-22 Soundwalls evaluated for Mitigation D13

Sound Wall	Noise Level Locations	SW Height	Length (ft)	SW Location Description	Noise Level Considered Threshold of Significance (+12 dBA)	Noise Reduction	Noise Level	Threshold of Significance Achievable
D13.6	NR-27, NR-28	3.0 m (10 ft)	488 m (1,600 ft)	N/B SR65 765+00 to 781+00	55.4	4.4	65.4	No
		3.6 m (12 ft)	488 m (1,600 ft)	N/B SR65 765+00 to 781+00		5.4	64.4	No
		4.3 m	488 m	N/B SR65 765+00 to		6.8	63.0	No

Sound Wall	Noise Level Locations	SW Height	Length (ft)	SW Location Description	Noise Level Considered Threshold of Significance (+12 dBA)	Noise Reduction	Noise Level	Threshold of Significance Achievable
		(14 ft)	(1,600 ft)	781+00				
		4.6 m (16 ft)	488 m (1,600 ft)	N/B SR65 765+00 to 781+00		8.0	61.8	No
D13.4	NR-18	3.0 m (10 ft)	671 m (2,200 ft)	E/B Westwood to S/B SR65 686+00 to 664+00	66.4	3.4	66.1	Yes
		3.6 m (12 ft)	671 m (2,200 ft)	E/B Westwood to S/B SR65 686+00 to 664+00		4.6	64.9	Yes
		4.3 m (14 ft)	671 m (2,200 ft)	E/B Westwood to S/B SR65 686+00 to 664+00		5.7	63.8	Yes
		4.6 m (16 ft)	671 m (2,200 ft)	E/B Westwood to S/B SR65 686+00 to 664+00		6.6	62.9	Yes
D13.1	NR-19	3.0 m (10 ft)	671 m (2,200 ft)	N/B SR65 to Westwood Off-Ramp 664+00 to 686+00	66.4	4.0	64.0	Yes
		3.6 m (12 ft)	671 m (2,200 ft)	N/B SR65 to Westwood Off-Ramp 664+00 to 686+00		4.6	63.4	Yes
		4.3 m (14 ft)	671 m (2,200 ft)	N/B SR65 to Westwood Off-Ramp 664+00 to 686+00		5.8	62.2	Yes
		4.6 m (16 ft)	671 m (2,200 ft)	N/B SR65 to Westwood Off-Ramp 664+00 to 686+00		6.7	61.3	Yes
D13.2	NR-20, NR-29	3.0 m (10 ft)	1859 m (6,100 ft)	W/B Westwood to N/B SR65 686+00 to 747+00	54.4	3.0	61.5	No
		3.6 m (12 ft)	1859 m (6,100 ft)	W/B Westwood to N/B SR65 686+00 to 747+00		4.3	60.2	No
		4.3 m (14 ft)	1859 m (6,100 ft)	W/B Westwood to N/B SR65 686+00 to 747+00		5.1	59.1	No
		4.6 m (16 ft)	1859 m (6,100 ft)	W/B Westwood to N/B SR65 686+00 to 747+00		6.3	58.2	No
D13.3	NR-30	3.0 m (10 ft)	1036 m (3,400 ft)	S/B SR65 746+00 to 712+00	55.4	3.6	64.2	No
		3.6 m (12 ft)	1036 m (3,400 ft)	S/B SR65 746+00 to 712+00		4.9	62.9	No
		4.3 m (14 ft)	1036 m (3,400 ft)	S/B SR65 746+00 to 712+00		6.0	61.8	No
		4.6 m (16 ft)	1036 m (3,400 ft)	S/B SR65 746+00 to 712+00		6.9	60.9	No

4.6.3 Preliminary Noise Abatement/Mitigation Decision (Soundwall Descriptions)

Based on the studies completed so far, the Department intends to incorporate noise mitigation measures in the form of sound walls at the locations indicated in Table 4-23. Calculations based on preliminary design data indicated that the barriers would reduce noise levels 5 dBA to 11 dBA. If during final design conditions have substantially changed, noise barriers might not be provided. The final decision of the noise barriers will be made upon completion of the project design and the public involvement process.

Table 4-23 Proposed Soundwalls

Alignment	Sound Wall	Height (ft)	Length (ft)	SW Location Description	SW Proposed as Mitigation or Abatement
A5C1	C1.1	4.3 m (14 ft)	671 m (2,200 ft)	N/B SR65 to Westwood Off-Ramp 163+00 to 185+00	Mitigation
	C1.2	4.3 m (16 ft)	1859 m (6,100 ft)	W/B Westwood to N/B SR65 185+00 to 246+00	Mitigation
	C1.3	4.3 m (16 ft)	853 m (2,800 ft)	S/B SR65 246+00 to 218+00	Mitigation
	C1.4	4.3 m (14 ft)	671 m (2,200 ft)	E/B Westwood to S/B SR65 185+00 to 163+00	Mitigation
	C1.5	4.6 m (16 ft)	1097 m (3,600 ft)	N/B SR65 253+00 to 289+00	Mitigation
	C1.6	4.6 m (14 ft)	1707 m (5,600 ft)	S/B SR65 to Nicolaus Off-Ramp 356+00 to 300+00	Mitigation
	C1.7a	4.6 m (16 ft)	396 m (1,300 ft)	Nicolaus to S/B SR65 300+00 to 287+00	Mitigation
	C1.7b	4.6 m (16 ft)	518 m (1,700 ft)	S/B SR65 275+00 to 258+00	Mitigation
AAC2	C2.1	4.3 m (14 ft)	671 m (2,200 ft)	N/B SR65 to Westwood Off-Ramp 165+00 to 187+00	Mitigation
	C2.2	4.3 m (16 ft)	1859 m (6,100 ft)	W/B Westwood to N/B SR65 187+00 to 248+00	Mitigation
	C2.3	4.3 m (16 ft)	975 m (3,200 ft)	S/B SR65 248+00 to 216+00	Mitigation
	C2.4	4.3 m (14 ft)	671 m (2,200 ft)	E/B SR65 Westwood to S/B SR65 187+00 to 165+00	Mitigation
	C2.5	4.6 m (16 ft)	1402 m (4,600 ft)	N/B SR65 to Nicolaus Off-Ramp 257+00 to 303+00	Mitigation
	C2.6sb(alt)	4.6 m (16 ft)	610 m (2,000 ft)	S/B SR65 335+00 to 355+00	Mitigation
	C2.7	4.6 m (16 ft)	1311 m (4,300 ft)	E/B Nicolaus to S/B SR65 303+00 to 260+00	Mitigation

Alignment	Sound Wall	Height (ft)	Length (ft)	SW Location Description	SW Proposed as Mitigation or Abatement
D1	D1.1	4.3 m (16 ft)	671 m (2,200 ft)	N/B SR65 to Westwood Off-Ramp 168+00 to 190+00	Mitigation
	D1.2a	4.3 m (14 ft)	610 m (2,000 ft)	W/B Westwood to N/B SR65 190+00 to 210+00	Mitigation
	D1.2b	4.3 m (16 ft)	610 m (2,000 ft)	N/B SR65 220+00 to 240+00	Mitigation
	D1.3	4.3 m (16 ft)	610 m (2,000 ft)	S/B SR65 240+00 to 220+00	Mitigation
	D1.4	4.3 m (16 ft)	671 m (2,200 ft)	E/B Westwood to S/B SR65 190+00 to 168+00	Mitigation
	D1.6	4.6 m (16 ft)	823 m (2,700 ft)	N/B65 322+00 to 349+00	Abatement
D13	D13.1	4.3 m (14 ft)	671 m (2,200 ft)	N/B SR65 to Westwood Off-Ramp 664+00 to 686+00	Mitigation
	D13.2	4.6 m (16 ft)	1859 m (6,100 ft)	W/B Westwood to N/B SR65 686+00 to 747+00	Mitigation
	D13.3	4.6 m (16 ft)	1036 m (3,400 ft)	S/B SR65 746+00 to 712+00	Mitigation
	D13.4	4.3 m (14 ft)	671 m (2,200 ft)	E/B Westwood to S/B SR65 686+00 to 664+00	Mitigation
	D13.6	4.6 m (16 ft)	518 m (1,700 ft)	N/B SR65 765+00 to 781+00	Mitigation

4.6.4 Construction Noise Impacts

Short-term impacts resulting from construction are considered significant under the following conditions;

- Hourly average construction noise levels exceeding 60 dBA during the daytime or 55 dBA during the nighttime outside of a residence and
- Bypass noise levels exceeding existing ambient noise levels.

Two types of short-term noise impacts would occur during construction of the project. First, construction crew commutes and the transport of construction equipment and materials to the project site would incrementally increase noise levels on access roads leading to the site. The pieces of heavy equipment for grading and construction activities will be moved on site, will remain for the duration of each construction phase and will not add to the daily traffic volume. When added to the current traffic volumes along SR 65 and Main Street, the projected volume of construction traffic will be small and its associated long-term noise level change will not be perceptible. However, there will be a relatively high single event noise exposure potential with passing trucks at a maximum level of 87 dBA L_{max} at 15.24 m (50 ft).

The second type of short-term noise impact is related to noise generated during excavation, grading and building erection on the project site. Construction of the proposed project is expected to require the use of earthmovers, bulldozers, water and pickup trucks. Noise typically associated with the use of construction equipment is estimated between 79 and 89 dBA at a distance of 50 feet from the project site for the grading phase.

To minimize the construction noise impact for existing residences adjacent to the project site, noisy construction activity will be limited to the standard hours of 7:00 a.m. to 7:00 p.m. Later phases of construction, such as the pouring of concrete into forms, typically involve smaller and quieter pieces of equipment.

Construction noise impact abatement

Initial construction has the potential to create noise impacts at the homes located along SR 65 and mitigation is warranted to reduce these impacts to the extent feasible. Implementation of these measures would reduce construction noise impacts. Applicable mitigation includes the following:

- Standard practice requires that construction be restricted to between the hours of 7:00 a.m. and 7:00 p.m. (8:00 a.m. and 7:00 p.m. on Saturdays) and not permitted on Sundays and Federal holidays.
- All construction equipment must conform to the provisions of the Department Standard Specifications, Section 7-10/I; "Sound Control Requirements." This section requires the contractor to comply with all local ordinances (i.e., City of Lincoln and Placer County) that apply to any work as part of the contract.
- Portable equipment should be located as far as possible from noise sensitive locations as is feasible.
- Construction vehicle staging areas and equipment maintenance areas should be located as far as possible from sensitive receptor locations.

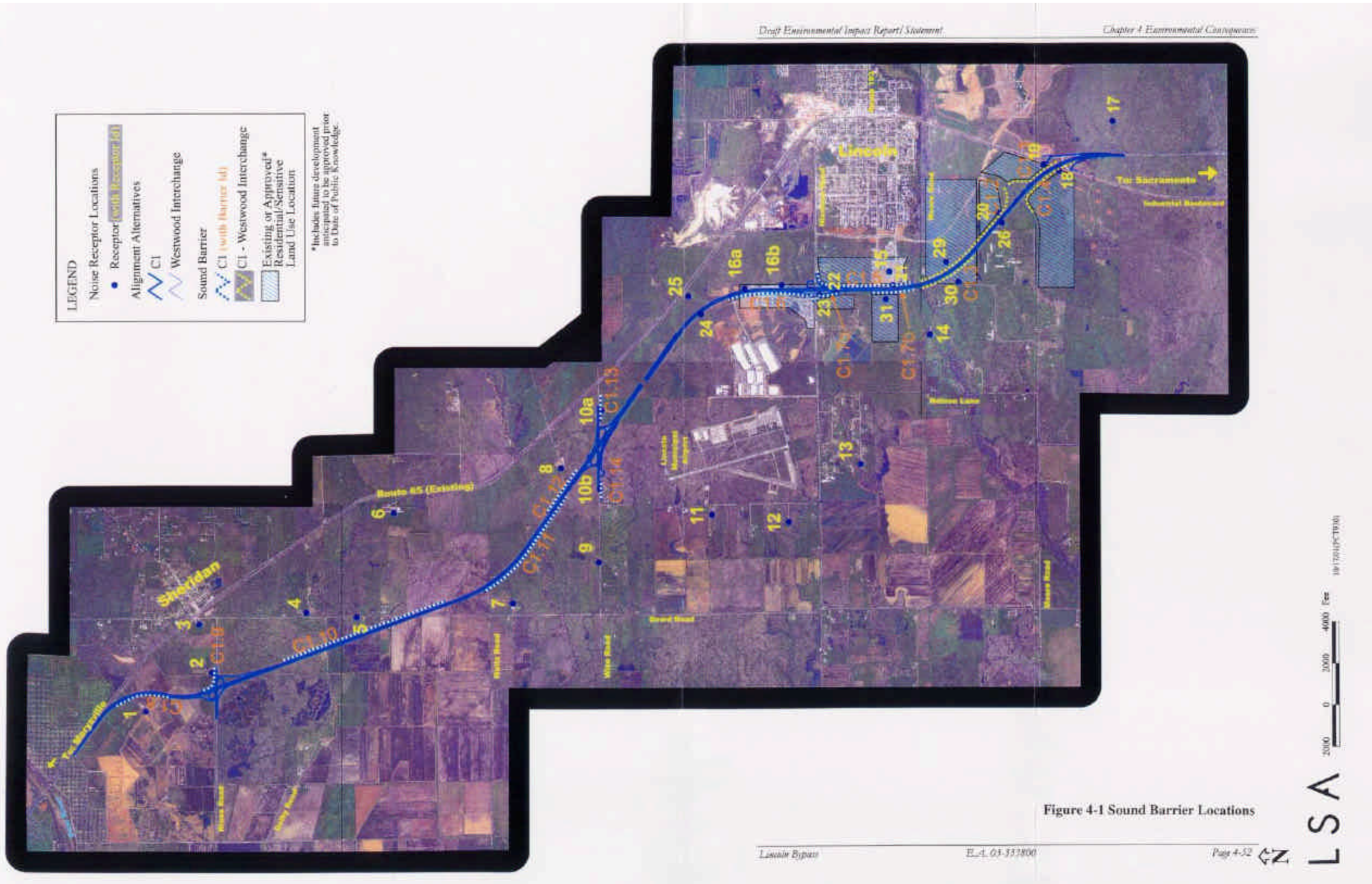


Figure 4-1 Sound Barrier Locations

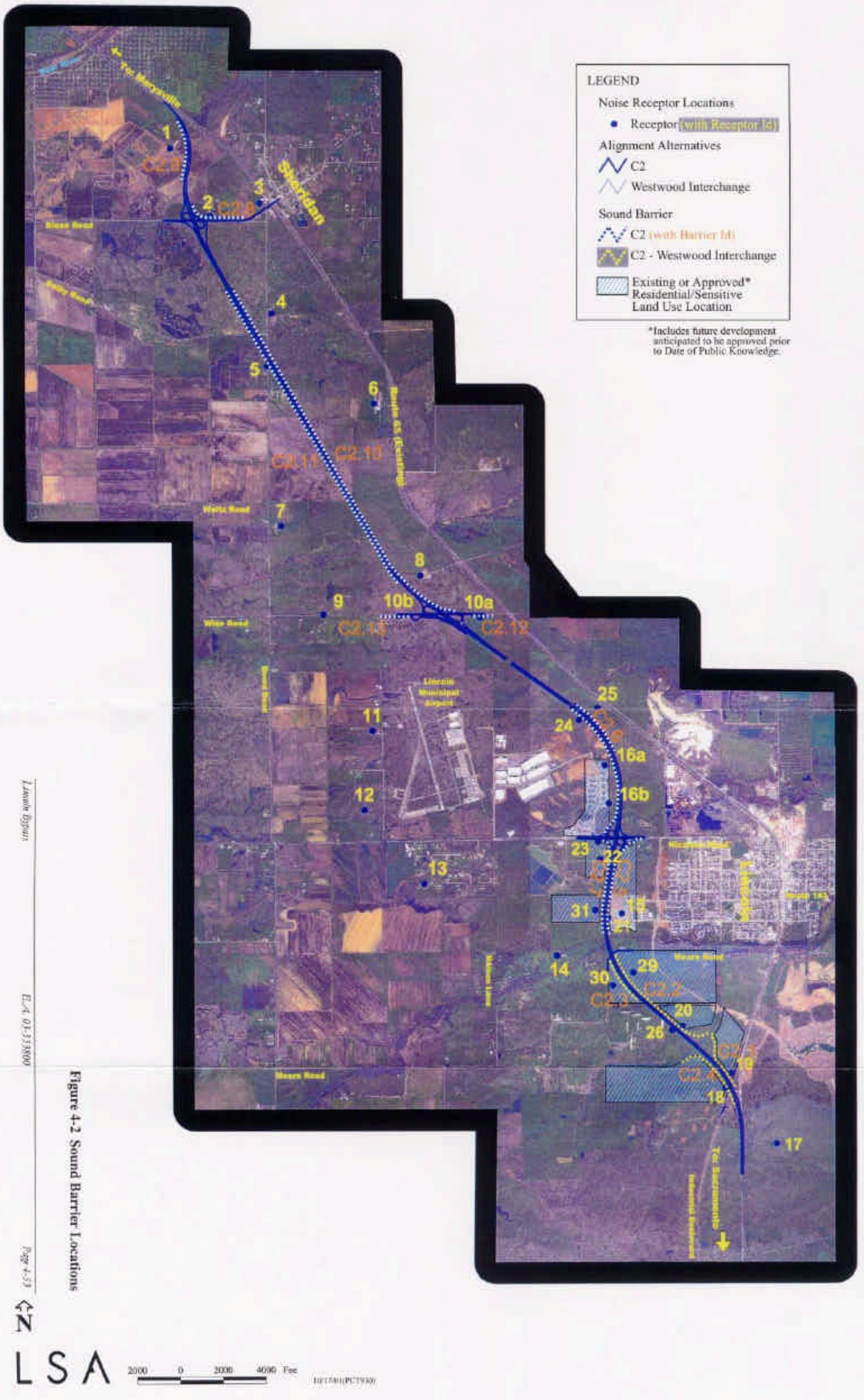


Figure 4-2 Sound Barrier Locations

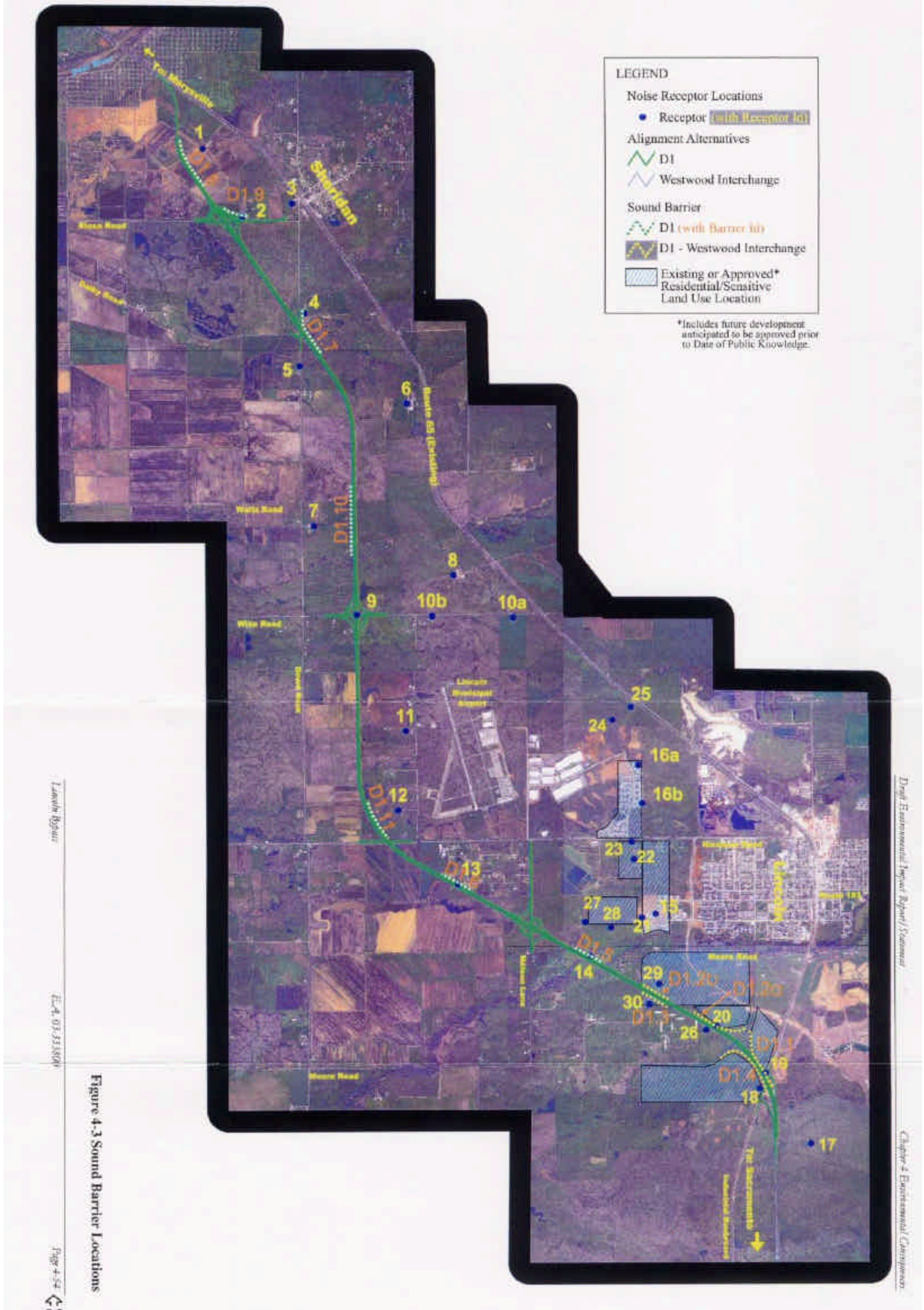


Figure 4-3 Sound Barrier Locations

LSA 2000 0 2000 4000 Feet

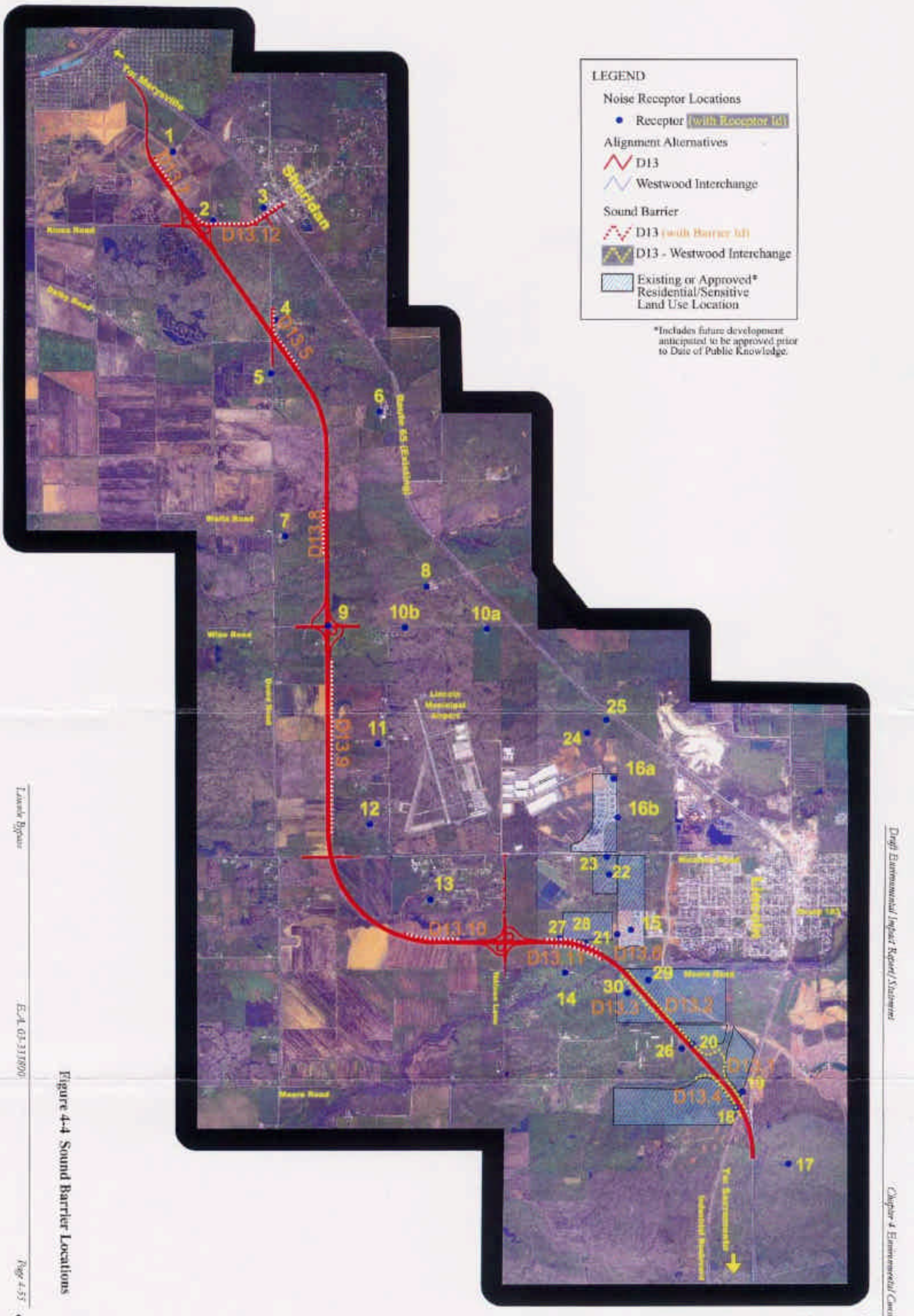


Figure 6f

Modeled Sound Barrier Locations
for Alternative D13

Figure 4-4 Sound Barrier Locations

Lincoln Bypass
EA 03-331800

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4.7 WATER QUALITY

This section summarizes the Water Quality Assessment Report, which documents which streams, lakes, rivers and other receiving waters could be affected by this project and the potential impacts on those waters by the construction and maintenance of each alternative. In addition, this section evaluates the project for compliance with the Sole Source Aquifer (SSA) program and the Drinking Water Source Assessment and Protection (DWSAP) program.

Other regulatory requirements discussed below are the ACOE Section 404 permit, the California Department of Fish and Game 1601 Agreement, and the California Regional Water Quality Control Board Section 401 water quality certification and the National Pollution Discharge Elimination System (NPDES) permit.

In Section 4.9, Natural Resources, the impacts of the project on water quality are discussed as they pertain to the natural resources and protected species.

Potential impacts for this project can be divided into those associated with short-term construction activities and long-term operations and maintenance activities. The construction activities discussed below would apply to all of the build alternatives, while the operation activities would apply to all the "build" and "no build" alternatives.

4.7.1 Regulatory Requirements

The National Pollution Discharge Elimination System (NPDES) was established by the EPA and implemented by the states Regional Water Quality Control Boards. The Department's currently has a statewide permit for the NPDES program. The Department's has developed a State Storm Water Management Plan (SWMP) designed to reduce the discharge of pollutants associated with storm water and non-storm water to the maximum extent practicable. The SWMP describes how the Department's will comply with NPDES requirements through the application of various Best Management Practices (BMP). BMP include those practices that provide pollution control benefit, are feasible to implement and meet legal and legislative funding restraints (Camp, Dresser & McKee 1999).

In addition to BMP the SWMP requires a Storm Water Pollution Prevention Plan (SWPPP) for projects where the impacts are greater than 2 ha (5 ac). The SWPPP requires that pollution sources be identified and also identifies and commits to implementing storm water pollution prevention measures to reduce pollutants in storm water discharges from construction sites both during construction and after construction has been completed.

Other regulatory/permit requirements are the ACOE Section 404 permit, the California Department of Fish and Game Section 1601 Stream Bed Alteration Agreement and the California Regional Water Quality Control Board Section 401 water quality certification. These requirements are discussed in more depth in the Natural Resources section. Measures to comply with permit requirements as they pertain to water quality are discussed below.

4.7.2 Impacts On Sole Source Aquifers Or Well Head Protection Areas

To help prevent groundwater contamination, the EPA has established the Sole Source Aquifer (SSA) program. The SSA program was established to increase public awareness of groundwater resources and help prevent contamination of aquifers that are the only available local or regional source of drinking water and supply more than 50 percent of a community's drinking water. The EPA web site listing the SSA in California was consulted and showed no sole source aquifer in Placer County (EPA, 1999).

The State of California Department of Health Services (DHS) recently developed the Drinking Water Source Assessment and Protection Program (DWSAP) program to help protect drinking water wells from contamination. All public water supply wells used for domestic purposes will be subject to the DWSAP. This program evaluates individual wells' susceptibility for potential contamination caused by existing conditions (e.g., underground tanks, septic systems, etc.), and provides guidelines to evaluate the potential impacts of proposed projects such as the Lincoln Bypass.

4.7.3 Groundwater Impacts

The only penetration into the water table that would be anticipated as part of any build alternatives would be support piles and footings for bridges and structures. These minor and isolated intrusions are not expected to impact the quality of groundwater.

Wells within the proposed right-of-way will be treated in accordance with the requirements set forth in the Highway Design Manual (Caltrans 1992) and other California codes. Municipal wells are required to have wellhead protection areas delineated under the State of California Department of Health Services DWSAP program. These protection areas can be delineated in a site-specific manner or in a more general calculated fixed radius (CFR) method. Until the City of Lincoln completes their delineation, the CFR minimum distances should be considered in the design: 183 m (600 ft) for Zone A (microbiological), 305 m (1,000 ft) for Zone B5 (chemical), and 457 m (1,500 ft) for Zone B10 (chemical). The final delineation of the wellhead protection areas is anticipated to be complete before the Department’s completes designing the preferred alternative.

If any wells are affected by the project, then additional municipal wells may need to be provided for the water supply for the City of Lincoln. This is not expected to impact the quality of ground water.

Impacts to groundwater for all of the alternatives are less than substantial. The remainder of this water quality section focuses on surface water quality impacts.

4.7.4 Construction Impacts

Suspended material caused by erosion in storm water runoff is considered by the Department as a pollutant of primary importance. Project construction activities such as grading and vegetation removal would result in soil and ground disturbances, creating loose or unprotected soil that could be transported by surface runoff or wind to nearby watercourses. Such increases in sediment and turbidity could adversely affect receiving water quality. These impacts have the potential to occur for the duration of construction activities. Beneficial uses that could be affected include REC-1, REC-2, WARM, COLD, WILD, MIGR and SPWN[1].

The following construction activities would be part of any of the build alternatives, and may contribute to increases in sediment, turbidity, and floating materials to receiving waters:

- **Daily contractor activity** - Routine construction activities such as material delivery, storage and usage, waste management, vehicle/equipment cleaning and operation and use of a construction staging area could result in generation of dust, sediments and debris.
- **Vegetation removal/trimming** - Removal or trimming of vegetation would be required for both construction and access. This activity would eliminate the groundcover that protects the topsoil. Exposed topsoil would be more susceptible to erosion. Additionally, trimmings could fall or be carried by runoff into surface waters, resulting in introduction of floating material and the potential for increased organic loading to the creeks.
- **Grading** - Grading would include removal of the natural and/or stabilizing cover (topsoil) and the creation of engineered slopes using fill material. Prior to establishment of temporary or permanent erosion control measures, graded material would be highly susceptible to erosion.

[1] The beneficial uses for the two watersheds are: MUN = Municipal, AGR I = Agricultural Irrigation, AGR S = Ag. Stock Watering, POW = Industry Power, REC-1 = Recreation Contact, REC-2 = Other Non-Contact Recreation, WARM = Freshwater Habitat Warm, COLD = Freshwater Habitat Cold, MIGR(W) = Migration Warm, MIGR(C) = Migration Cold, SPWN(W) = Spawning Warm, SPWN(C) = Spawning Cold, and WILD = Wildlife Habitat.

- **Temporary roads** - Construction of temporary roads would require grading, vegetation removal and other changes to the topography and drainage characteristics of the watershed. These temporary roads are typically composed of native material and/or aggregate base rock.
- **Activities within the creek corridor** - Construction of culverts, bridges and viaducts require an extensive presence in stream corridors. These activities may also require construction of temporary access roads; temporary cofferdams and/or jetties to re-route the watercourses.
- **De-watering** - Construction may require localized de-watering in areas of shallow groundwater. De-watering activities would be continuous but temporary for the duration of work in a particular area. Discharged groundwater may be high in turbidity.
- **Construction of temporary structures** - To support construction equipment, laborers and construction forms, it would be necessary to erect falsework. Falsework is typically constructed of wood and metal connectors. Although the majority of woodcutting would take place outside of the stream corridors, some woodcutting would be necessary as the falsework is erected. This woodcutting could introduce sawdust to surface waters. Disassembly of the falsework may result in small pieces of wood, nails and metal cuttings entering creeks.
- **Seeding and application of fertilizers and nutrients** - To prepare the ground for temporary and/or permanent cover and promote better growth, fertilizers and plant nutrients may be applied before and after planting. In the early stages of the seeding process, surface runoff could wash some of the re-vegetation material, fertilizers, nutrients and seeds into surface waters.

Mitigation of Construction impacts due to erosion

To address these potential water quality impacts, the Department would require the contractor to use a combination of Best Management Practices (BMP) during construction through the Plans, Specification and Estimates (PS&E) documents. the Department would include special provisions in the PS&E for this project requiring the contractor to prepare and implement a Storm Water Pollution Prevention Plan (SWPPP), and other project specific Standard Special Provisions (SSP).

The purpose of the BMP is to stabilize disturbed soil, to minimize erosion and to capture and remove sediment suspended in runoff before the runoff leaves the site. These measures would provide a high degree of protection to the local receiving waters from discharge of sediment during construction. With the implementation of the Department's

standard practices and procedures, all of the build alternatives would have less than substantial impacts from construction induced erosion.

4.7.5 Construction impacts from Oil, Greases, and Chemical Contamination

Construction activities may introduce chemicals, oils and greases that could be carried by surface runoff to surface water if not properly managed. These impacts have the potential to occur for the duration of construction activities. Beneficial uses that could be impacted include REC-1, REC-2, WARM, COLD, RARE, MIGR and SPWN. The following construction activities would be part of any of the build alternatives:

- **Cement and grout** - As part of the bridge construction process, concrete and grout work would take place within stream corridors. Spillage of concrete and grout into receiving waters during bridge construction could increase turbidity and alter the pH.
- **Application and storage of chemicals** - Accidental spills, improper storage, and improper application of chemicals during construction could potentially impact water quality. Chemicals such as herbicides and fertilizers could also be washed into the creeks. Herbicides could be poisonous to fish and aquatic plants. Conversely, fertilizers may promote algae growth, which would reduce dissolved oxygen levels.
- **Application and storage of oils, greases and fuels** - Improper storage of oils and fuels could result in accidental spills and/or leaks within the construction area. Accidental spills during refueling and maintenance of construction vehicles and equipment could occur. Surface runoff could transport these materials to the local creeks. Similarly, application of petroleum chemicals during road construction could be washed into surface waters. These materials could have toxic effects on aquatic organisms.

Mitigation of Construction impacts from Oil, Grease or chemical contamination

The Department's SSP prohibit the contractor from discharging oils, greases or chemicals into receiving waters. For example, on this project, equipment operating in water bodies would be required to be steam cleaned prior to arrival on site and be maintained in a clean condition during the length of activities. With implementation of the BMP and SSP, all of the build alternatives would not have a major impact from construction induced oils, greases and chemicals.

4.7.6 Construction Impacts Due To Increases In Water Temperature

Certain construction activities may contribute to short-term temperature changes of the surface water. Beneficial uses that could be affected include COLD, MIGR and SPWN. These activities include:

- **Concrete curing** - Piers are typically constructed using reinforced concrete. Once concrete is poured in the forms, it takes up to several weeks to set - referred to as the curing period. During the curing period, concrete releases heat into its surrounding environment. Water is often used during this process to prevent the concrete from hardening too fast. To the extent that this water were to reach surface waters, it could cause a localized increase in the ambient temperature.
- **Vegetation removal/trimming** - During construction, vegetation at or near the creeks would require trimming or removal. Vegetation provides shade, which maintains cooler water temperature in the creeks. Once vegetation is removed or trimmed, water temperatures may increase due to exposure to direct sun light.
- **Creek realignment** - Where segments of creeks are realigned, they may not have the same canopy cover/shade as before the project. Prior to vegetation reestablishment, increases in temperature may occur.

Mitigation for Short-Term Increases in Water Temperature

The Department does not have any standard BMP or other provisions that directly address temperature impacts. However, concrete curing would occur over a period of several weeks and is so localized in nature that it is not expected to have a major impact on water temperature.

Regarding vegetation removal/trimming and creek realignments, The Department would follow standard practices for minimizing the amounts of vegetation trimmed or removed at crossings. To some extent, the project would tend to be self-mitigating with respect to impacts, since shade provided by the new crossings would tend to offset some loss in canopy cover through trimming/removal and realignment. Measurable temperature impacts are not expected where work is done in limited areas.

Treatment of runoff, such as diverting the water to detention ponds, may be required where storm water enters sensitive receiving waters, such as vernal pools. Additional drainage studies, surveys and bridge modeling will be required to finalize project plans and complete floodplain encroachment mitigation proposals.

4.7.7 Long-term Impacts to Water Quality Due to Erosion

As previously mentioned, sediment is of specific concern in the project area since it is listed as a source of impairment to beneficial uses. Following the construction process,

disturbed areas would be stabilized through permanent re-vegetation or other means. The Storm Water Quality Handbook-Planning and Design Staff Guide (P&DSG) provide detailed procedures for design of permanent slope stabilization controls. Storm runoff detention is typically provided by detention ponds accessed via roadside ditches (Caltrans 1999).

In spite of re-vegetation efforts, sediment and turbidity could still have an adverse effect on water quality. These impacts have the potential to occur for the duration of the project operation. Beneficial uses that could be affected include REC-1, REC-2, WARM, COLD, WILD, MIGR and SPWN. The following factors may also contribute to adverse impacts:

- **Hydrologic impacts** - The increase in impervious areas could cause an increase in the peak flow and higher runoff volumes that could lead to stream downcutting, stream bank erosion and loss of stream structure. The result could be an increase in sediment and turbidity in receiving waters. Along with the increase in sediment, there is an increased opportunity for pollutants such as herbicides and road pollution to enter the streams.
- **Concentration of runoff** - Typical highway drainage design involves collecting runoff in pipes or ditches and discharging, either directly or indirectly, into creeks. To the extent that localized flows were concentrated and/or altered from pre-project conditions, potential impacts would be similar to those described for increases in impervious areas.

Mitigation for long-term impacts of erosion

To address these potential water quality impacts resulting from project hydrology and concentration of runoff, the Department would utilize permanent BMP incorporated into the design and construction of the project in combination with BMP during maintenance operations.

Examples of the BMP likely to be used in this project as mitigation for long-term impacts of erosion would be directing highway runoff via ditches and culverts into retention basins.

Grading of embankments to minimize erosion potential will also be incorporated into the design of the highway.

In addition, the P&DSG require that the design team take into account hydrologic impacts of the project and provide measures such that stream channel stability is maintained.

4.7.8 Long-term impacts from Oils, Greases, and Chemical Contamination

Highway runoff and other long-term maintenance activities may introduce chemicals, oils and greases to surface water. Beneficial uses that could be impacted include REC-1, REC-2, WARM, COLD, WILD and SPWN. Typical highway related activity and maintenance that affect runoff quality are:

- **Highway runoff** - Contaminants generated by traffic, pavement materials and airborne particles that settle and are carried by runoff into receiving waters.
- **Accidental spills** - Spills caused by highway-related traffic accidents have the ability to cause great damage to water quality, depending on the type and quantity of the material spilled.
- **Application of chemicals** - Application of chemicals from landscaping operation and maintenance activities could potentially enter into receiving waters. Herbicides could be poisonous to fish and aquatic plants. Conversely, fertilizers may promote algae growth, which would reduce dissolved oxygen levels.

Few, if any, of the hydrocarbons (except oil and grease), volatile and semi-volatile organic compounds or pesticides/herbicides are anticipated to be found in highway runoff, given the rural setting of the site. There are no large industrial (manufacturing), agri-industrial (packing plants), or agricultural operation/activities in the project area that use large amounts of solvents, pesticides or herbicides.

Table 4-24 summarizes the results of the Department study on pollutants of concern in typical highway runoff. Mean values are presented for 17 parameters. Water quality objectives established for the Bear River are also presented. Constituents with mean values exceeding water quality are highlighted in bold type.

Table 4-24 Pollutants of Concern in Typical Highway Runoff

Pollutant	No. of Samples	Mean Value (mg/L)	Water Quality Objective for the Bear River (mg/L)
Barium	25	0.13	1.0
Cadmium	30	0.0009	0.005
Chromium	56	0.0082	0.05
Copper	52	0.035	1.3
Iron	27	3.76	Not listed
Lead	**35**	**0.0814**	**0.015**
Manganese	17	0.08	Not listed
Nickel	56	0.0091	0.1
Zinc	62	0.186	Not listed
Oil and Grease	Not listed	10.3	Qualitative Standard
TSS	Not listed	112	Not Available
COD	Not listed	120	Not Available
Ammonia	25	1.9	Not Available

Pollutant	No. of Samples	Mean Value (mg/L)	Water Quality Objective for the Bear River (mg/L)
Nitrate	33	2.8	10
TKN	37	2.6	Not Available
Phosphate	5	0.4	Not Available
Phosphorus	67	0.3	Not Available

Source: Mean Values: Brown and Caldwell, 1997; Water Quality Objectives: RWQCBCVR, 1998.

If these concentrations were not sufficiently diluted upon entering the receiving waters, they could cause potential significant impacts to water quality. The proposed impervious surface that would create highway runoff was compared to the total area in the watershed to determine whether the proposed project would result in an increase in pollutant loading to the receiving water that would exceed the water quality objectives.

The watershed areas were delineated on 7.5 minute USGS topographic maps. The paved width of the highway was assumed to be 36.6 m (120 ft), the maximum paved area, even though the right-of-way may exceed this dimension in places. The results are as follows:

The **Orchard Creek watershed** above SR 65 covers approximately 17.7 km^2 (11 mi^2) (2849 ha [7040 ac]). All build alternatives will cover about 2.4 km (1.5 mi) (8.8 ha [21.8 ac]) of land. Any of the build alternatives would affect about 0.3% of the watershed.

The **Auburn Ravine watershed** above the City of Lincoln covers an area of about 53 km^2 (33 mi^2) (8547 ha [21120 ac]). The alternative that has the longest section within the Auburn Ravine watershed is D13. This alternative affects about 8.8 ha (21.8 ac) or less than 0.1% of the watershed. Other alternatives would also affect less than 0.1% of the watershed.

The **Markham Ravine watershed** above the D alternatives is about 19.3 km^2 (12 mi^2) (3108 ha [7680 ac]). The D alternatives affect about 20.6 ha (50.9 ac) or less than 0.6% of the watershed. Only 11.26 km^2 (7 mi^2) (1813 ha [4480 ac]) of the Markham Ravine watershed is above the AC alternatives. These alternatives affect about 14.6 ha (36 ac) or approximately 0.8% of the watershed.

The **Coon Creek watershed** covers over 112.6 km^2 (70 mi^2). Approximately 11.7 ha (29 ac) of land will be affected, or less than 0.1% of the watershed.

The **Yankee Slough watershed** above all of the alternatives is about 27.4 km^2 (17 mi^2) (4403 ha [10,880 ac]). The AC and D alternatives affect about 23.6 ha (58.2 ac) or approximately 0.5% of the watershed.

Mitigation for long-term impacts of Oil, Grease and Chemical Contamination

The results demonstrate that paved surfaces in the Department's right-of-way would not be a very big percentage of the watershed. In all cases, the paved area is less than 1% of the watershed. Therefore, highway runoff would be sufficiently diluted as to not cause an impact to receiving water quality.

Runoff from the highway right-of-way would be retained on-site to prevent significant adverse effects on the local surface and groundwater quality. When construction is complete, permanent erosion control measures and landscaping would be implemented throughout the project area. Final plans may include sediment basins, detention ponds and other design mechanisms to treat the storm water run-off if the run-off cannot be separated from the sensitive receiving waters. Vernal pools complexes that are cut off from sheet flow are included in the total impacts to wetlands. However, culverts will be used extensively to maintain flows to vernal pools. Environmentally Sensitive Areas (ESA) will be established to prevent herbicides and pesticides from contaminating the vernal pools and waterways.

During final design, a more detailed evaluation will be made of the corridor hydraulics, with particular emphasis on ensuring that existing water flows are maintained.

4.7.9 Long-term Increases in Water Temperature

Certain activities may contribute to long-term temperature changes of the surface water after construction is complete which may adversely affect existing water quality. Beneficial uses that could be affected include COLD, MIGR and SPWN. These activities include:

- **Increase in paved areas** - Due to continuous use and its affinity to absorb heat from sunlight, pavement surfaces may get warmer than soil. Highway runoff may be warmer than pre-project runoff temperature.
- **Creek crossings and realignments** - Where segments of creeks are crossed and possibly realigned, they may not have the same canopy cover/shade as before the project. The bridge crossings will provide permanent shade to the waterway. However, prior to vegetation reestablishment increases in water temperature may occur.

Mitigation for Long-term Increase in Water Temperature

As discussed previously, the estimated area of paved surfaces associated with the Department's right-of-way, and therefore the percentage of runoff discharged, is a minimal percentage of the local watersheds for all alternatives. Therefore, it is not anticipated that increases in runoff temperatures from paved areas would lead to a measurable increase in stream temperatures.

4.7.10 Summary of Effects on Water Quality

Each of the alternatives will affect the water temperature and toxicity to varying degrees. The "No Build" alternative has the least affect, the AAC2 and A5C1 alternatives the next greatest affect and the D1 and D13 alternatives have the most affect. The magnitude of the increase in water temperature and toxicity from the bypass project is relatively small when comparing the impervious surface area of each alternative to the size of the watershed.

The geographic extent of the effects is relatively small. The watersheds involved are a small segment of the Sacramento River Basin, approximately 0.5%.

The duration and frequency of the effect varies. During the first major rainfall, the toxic nature of the water is higher than any other time and the water quality objectives may be exceeded. Throughout the rest of the rainy season, the pollutant level is much lower, probably lower than the water quality objective. Monitoring of the water constituents would be necessary to determine when water quality objectives would be exceeded.

Water temperature would fluctuate throughout the rainy season. Whenever rain would wash into the waterways from impervious surfaces, the temperature would be higher than if it had washed from vegetated surfaces. During the time that fall-run Chinook salmon would be migrating and spawning, the water temperature of the waterways could be higher than normal. It is not possible to determine whether the elevation of the water temperature would be sufficient to affect the spawning and early development.

The city's monitoring program could be an effective evaluative mechanism for managing development and mitigation measures in order to maintain water quality objectives for the receiving waters. If monitoring indicated that water temperatures exceeded the water quality objective for cold water spawning, then additional shade could be created along the waterway with more plantings in order to cool the water. If monitoring indicated that the water exceeded toxic water quality objectives, then additional mechanisms could be instituted to limit the amount of toxic loading that enters the waterways.

4.8 FLOODPLAIN

A Floodplain Hydraulic Study update was completed for the proposed alignments A5C1, AAC2, D1 and D13 using information from the District 3 Hydraulics Branch files and library. The exhibits were compiled from Placer County and City of Lincoln Flood

Insurance Rate Maps (FIRM) effective date June 8, 1998. (See Figure 3-12) Floodplain elevations are referenced to the National Geodetic Vertical Datum (NGVD) of 1929.

Floodplain encroachments are unavoidable with the Lincoln Bypass. The north/south route of the roadway crosses the east/west drainage pattern existing between the Sierra Foothills and the Sacramento Valley. All of the resulting floodplain crossings are transverse encroachments.

The proposed alternative alignments encroach upon the 100-year floodplain at Auburn Ravine, Markham Ravine, Coon Creek and Yankee Slough. Additional waterway crossings which are not within the floodplain boundaries include; Ingram Slough, tributaries of Markham Ravine and the South Sutter Water District Aqueduct.

The roadway encroachments upon the 100-year floodplain are subject to Federal regulations. The alignment will be designed to avoid or minimize floodplain encroachment. Encroachments that impact a regulatory floodway or exceed the permitted increase to the water surface elevation require administrative determination by the Federal Emergency Management Agency (FEMA). An amendment to the FEMA floodway/floodplain mapping along with supporting hydraulic studies are required submittals for significant floodplain encroachments.

The Department's Division of Structures has responsibility for determining hydraulic adequacy for bridge waterway openings. By providing sufficient survey and topographic data to Structures Design the proposed bridge crossings will be engineered to minimize impacts on the existing floodplains.

The proposed project will be designed to provide for an all-weather route to ensure safe passage of emergency vehicles and serve as an emergency evacuation route. The roadway profile grade elevation will be 1.43 m (4.7 ft) above the original ground elevation.

In general, the proposed floodplain crossings will include a bridge over the floodway or main stream channel. Cross culverts will be provided through any embankment within the floodplain overbank area / floodway fringe to mitigate the impacts of bridge approach embankment fills within the floodplain boundaries.

The vegetation and soils along the various proposed waterway crossings are similar in nature. The erosion hazard of the soils varies from slight erosion hazard in the floodway fringes to high erosion hazard in the recent alluvium deposits adjacent to stream channels. The availability of detailed soil information will ensure that appropriate erosion control measures are included to mitigate the floodplain encroachments.

Discussions with the Placer County Flood Control Engineer indicate that storm water detention facilities should be provided to mitigate increases to the peak flows

resulting from the proposed roadway construction. The roadside ditches will typically provide storm runoff detention. Additionally, the proposed bridges will be designed to minimize downstream impacts.

To establish the estimated 100-year Base Floodplain Elevation (BFE), the Flood Insurance Rate Map Zone A floodplain boundaries were superimposed onto a USGS topographic map and the contour elevation was interpolated. The estimated 100-year BFE for the riverine flooding typical to this study is adjusted by one-half the contour interval to account for any elevation difference between the left overbank boundaries and the right overbank boundaries.

Alternative AAC2

The project alignment conforms to the existing SR 65 alignment approximately 0.5 km (0.3 mi) south of Industrial Avenue. There is no anticipated encroachment by this project onto the floodplain at the north tributary of **Orchard Creek**.

Alternative AAC2 crosses **Ingram Slough** approximately 915 m (3,000 ft) west of the existing SR 65. Ingram Slough is not designated as a 100-year floodplain. The City of Lincoln is currently constructing a new bridge on SR 65 at Ingram Slough. The bridge on the existing highway alignment will have a length of 42 m (138 ft). Additionally, the Union Pacific Railroad is constructing a 40 m (130 ft) trestle immediately west of the existing highway alignment. The November 10, 1999 Hydraulic Evaluation for Advance Planning Study (HEAPS) by the Department's Division of Structures noted that the South Lincoln Master Drainage Plan proposes to split Ingram Slough into two reaches just west of the existing SR 65 alignment. The existing Ingram Slough channel would be abandoned.

The bridge for the south reach of the realigned Ingram Slough will be designed to clear the railroad tracks, the south reach channel and a maintenance roadway. The profile grade over the channel will be approximately 51 m (170 ft). The HEAPS estimates the 100-year BFE at 41 m (135 ft).

The north reach of the realigned Ingram Slough is at a 60-degree skew to the Lincoln Bypass alignment and would require a 91 m (300 ft) long bridge. The proposed profile grade elevation is 44 m (144 ft) compared to an estimated 100-year BFE of 42 m (137 ft).

Alignment AAC2 encroaches on the 100-year floodplain at **Auburn Ravine** in the vicinity of Moore Road for a distance of 320 m (1,050 ft). The floodplain at this location is designated Zone A with no base flood elevations determined. The HEAPS estimates a 100-year BFE of 39 m (128 ft) at the alignment AA crossing. The HEAPS for Auburn Ravine Bridge proposes bridge length of 213.4 m (700 ft). The structure would span

Auburn Ravine from bank to bank with a minimum soffit elevation of 39.9 m (131 ft). This elevation would provide 0.9 m (3 ft) of freeboard, as required by the Reclamation Board, over the estimated 100-year BFE of 39 m (128 ft).

Alignment AAC2 encroaches on the 100-year floodplain at the Lower Tributary of **Markham Ravine** in a location approximately 550 m (1,800 ft) south of Nicolaus Road for a distance of 75 m (250 ft). The floodplain at this location is designated Zone AE Floodway, base flood elevations determined. The BFE at this crossing is 38.7 m (127 ft). The designated floodway for the AAC2 crossing at the Lower Tributary of Markham Ravine encompasses the entire width of the Zone AE floodplain boundaries. Any fill encroachment within the floodway would likely result in a greater than 0.3 m (1 ft) increase to the BFE. Additional studies are required if this alignment alternative is selected.

Alignment AAC2 encroaches on the 100-year floodplain at Markham Ravine again approximately 335 m (1,100 ft) north of Nicolaus Road for a distance of 21 m (70 ft). The floodplain at this location is designated Zone AE Floodway. The 100-year BFE at this proposed AAC2 crossing is 37.9 m (124.5 ft). The HEAPS proposes a bridge length of 85.3 m (280 ft) for the alignment AAC2 crossing of Markham Ravine. The proposed soffit elevation is 0.9 m (3 ft) or greater than the 100-year BFE.

Alignment AAC2 encroaches on the **Coon Creek** floodplain approximately 550 m (1,800 ft) north of Wise Road for a distance of 640 m (2,100 ft). The floodplain at this location is designated Zone A. The estimated 100-year BFE is 32 m (105 ft) according to the HEAPS. The HEAPS proposes a bridge length of 76m (250 ft) at the C2 alignment crossing.

Additional hydraulic modeling will be required for the Coon Creek crossing to determine the revised 100-year flood zone boundaries and the need for flooding easements upstream of the proposed crossing. If the AAC2 alignment is selected a flood map revision may be required.

Alignment AAC2 encroaches on the **Yankee Slough** floodplain in the vicinity of Dowd Road for approximately 213 m (700 ft). The floodplain at this location is designated Zone A. The HEAPS for this alignment recommends a bridge length of 61 m (200 ft) and a minimum soffit elevation of 29 m (95 ft).

It is recommended that the proposed interchange for the Dowd Road / Dalby Road connections be located north of the existing County road intersection to minimize encroachments into the Yankee Slough 100-year floodplain.

Alignment AAC2 crosses an existing **irrigation aqueduct** approximately 488 m (1,60 ft) south of Riosa Road. The aqueduct is the jurisdiction of South Sutter Water

District. A review of the proposed crossing by the District Hydraulics Branch in 1994 concluded that a double 3.7 m by 2.1 m (12 x 7 ft) reinforced concrete box culvert will be required at the aqueduct crossing location.

Alternative A5C1

Alignment A5C1 crosses **Ingram Slough** at a location approximately 915 m (3,000 ft) west of the existing SR 65. Please see the description for the Alignment AAC2 crossing of Ingram Slough as all proposed alignments cross Ingram Slough in close proximity to that alignment.

Alignment A5C1 encroaches on the 100-year floodplain at **Auburn Ravine** in the vicinity of Moore Road for a distance of 305 m (1,000 ft). The floodplain at this location is designated Zone A. The HEAPS for Auburn Ravine Bridge proposes a bridge length of 213 m (700 ft). The structure would span Auburn Ravine from bank to bank with a minimum soffit elevation of 40 m (131 ft). This elevation would provide 0.9 m (3 ft) of freeboard, as required by the Reclamation Board, over the estimated 100-year BFE of 39 m (128 ft).

Alignment A5C1 encroaches on the 100-year floodplain at the **Lower Tributary of Markham Ravine** at a location approximately 490 m (1,600 ft) south of Nicolaus Road for a distance of 183 m (600 ft). The floodplain at this location is designated Zone AE, base flood elevations determined. A HEAPS bridge length estimate is not available for this location.

The designated floodway for the A5C1 crossing at the Lower Tributary of Markham Ravine encompasses the entire width of the Zone AE floodplain boundaries. Any fill encroachment within the floodway would likely result in a greater than 0.3 meter (1 ft) increase to the 100-year BFE. Additional studies are required if this alignment alternative is selected.

Alignment A5C1 encroaches on the 100-year floodplain at the **main channel of Markham Ravine** approximately 427 m (1,400 ft) north of Nicolaus Road for 122 m (400 ft). The floodplain at this location is designated Zone AE. The HEAPS proposes a bridge length of 85.3 m (280 ft) at the A5 crossing. The profile grade should be set to allow for minimum freeboard of 0.9 m (3 ft).

Alignment A5C1 encroaches on the **Coon Creek** floodplain approximately 518 m (1,700 ft) north of Wise Road for a distance of 884 m (2,900 ft). The floodplain at this location is designated Zone A. A HEAPS bridge length estimate is not available for the A5C1 crossing location. The adjacent AAC2 crossing 244 m (800 ft) upstream proposes a bridge length of 76.2 m (250 ft). The HEAPS notes that the peak discharge of 594

cubic meters per second (m^3/s) may not reach this crossing location due to upstream constriction at the existing highway and railroad crossings.

Alignment A5C1 crosses the **Yankee Slough** floodplain at two locations. The alignment encroaches on Yankee Slough approximately 914 m (3,000 ft) south of Dalby Road for a distance of 152 m (500 ft) and again approximately 213 m (700 ft) south of Dalby Road for a distance of 107 m (350 ft). The floodplain at these locations is designated Zone A. A detailed FEMA Flood Insurance Study is not available for Yankee Slough. The estimated 100-year BFE is 27 m (88 ft). A HEAPS bridge length estimate is not available for these crossing locations. The adjacent AAC2 alignment, crossing approximately 274 m (900 ft) upstream of the A5C1 alignment, proposes a bridge length of 61 m (200 ft) for the northerly third of Yankee Slough. If the A5C1 alignment is selected additional studies will be required to determine a bridge length for the southerly crossing of Yankee Slough.

Alignment A5C1 crosses an existing **irrigation aqueduct** approximately 549 m (1,800 ft) south of Riosa Road. The aqueduct is the jurisdiction of South Sutter Water District. A review of the proposed crossing by the District Hydraulics Branch in 1994 concluded that a double 3.7 m by 2.1 m (12 ft x 7 ft) reinforced concrete box culvert will be required at the aqueduct crossing location.

Alternative D1

Alignment D1 crosses **Ingram Slough** at a location approximately 915 m (3,000 ft) west of the existing SR 65.

Alignment D1 encroaches on the 100-year floodplain at **Auburn Ravine** approximately 792 m (2,600 ft) north of Moore Road for a distance of 396 m (1,300 ft). The floodplain at this location is designated Zone A. The Flood Insurance Study (FIS) for Auburn Ravine does not include this crossing location. The November 10, 1999 HEAPS does not include recommendations for the D1 alignment crossing of Auburn Ravine, however, the A5C1 and AAC2 alignments, approximately 610 m (2,000 ft) upstream of D1, call for a bridge length of 213.4 m (700 ft). The Reclamation Board will require 0.9 m (3 ft) of freeboard between the 100-year BFE and the bridge soffit. If the D1 alignment is selected additional studies will be required.

Alignment D1 encroaches on the 100-year floodplain at **Markham Ravine** in three locations. The floodplain at these locations is designated Zone A. A detailed FIS is not available for this portion of Markham Ravine. Two of the floodplain encroachments occur on the branches of a reservoir within the Markham Ravine watershed. The estimated 100-year BFE at these crossings is 35.8 m (117.5 ft). The third floodplain encroachment is located approximately 548 m (1,800 ft) south of Nicolaus Road for a

distance of 122 m (400 ft) across the main stream channel. The estimated 100-year BFE is 34.3 m (112.5 ft) at the D1 crossing of the main stream channel. The HEAPS recommendation for the adjacent D13 alignment estimates the bridge length at 129.5 m (425 ft). The HEAPS notes that additional survey data will be required to determine backwater effects.

Alignment D1 encroaches on the 100-year floodplain at **Coon Creek** in the vicinity of Wise Road for a distance of 1,128 m (3,700 ft). The floodplain at this location is designated Zone A. The estimated 100-year BFE of 32.7 m (107.3 ft) per the HEAPS is based on an estimated flow of 594.3 m^3/s (21,000 cfs). According to the Placer County Flood Control Engineer the estimated peak discharge for a 100-year event ranges from 311.3 m^3/s (11,000 cfs) to 594.3 m^3/s (21,000 cfs) for ultimate build-out of the upstream watershed area. The D1 and D13 alignments cross Coon Creek at the same location. The APS proposes a bridge length of 91.4 m (300 ft) at this crossing. The HEAPS notes that the peak discharge of 594 m^3/s may not reach the D1 crossing location due to upstream constriction at the existing highway and railroad crossings.

Alignment D1 encroaches on the 100-year floodplain at **Yankee Slough** in the vicinity of the Dalby Road / Dowd Road intersection for a distance of 213 m (700 ft). The floodplain at this location is designated Zone A. The estimated 100-year BFE is 28.0 m (92 ft). Alignments D1 and D13 cross Yankee Slough at the same location. The APS proposes a bridge length of 61.0 m (200 ft) and a minimum soffit elevation of 29.0 m (95 ft).

It is recommended that the proposed interchange for the Dowd Road / Dalby Road connections should be located north of the existing County road intersection to minimize encroachments into the Yankee Slough 100-year floodplain.

Alignment D1 crosses **Big Yankee Slough** in the vicinity of the Dalby Road Dowd Road intersection. This crossing is not within the designated floodplain boundaries. The estimated 100-year water surface elevation is 28.0 m (92 ft). Alignments D1 and D13 cross Big Yankee Slough at the same location. The HEAPS proposes a bridge length of 30.5 m (100 ft) and a minimum soffit elevation of 29 m (95 ft).

Alignment D1 crosses an existing **irrigation aqueduct** approximately 549 m (1,800 ft) south of Riosa Road. The aqueduct is the jurisdiction of South Sutter Water District. A review of the proposed crossing by the District Hydraulics Branch in 1994 concluded that a double 3.7 m by 2.1 m (12 ft x 7 ft) reinforced concrete box culvert will be required at the aqueduct crossing location.

Alternative D13

Proposed alignment D13 crosses **Ingram Slough** approximately 915 m (3000 ft) west of the existing SR 65. Please see the description for the Alternative alignment AA crossing of Ingram Slough as all proposed alignments cross Ingram Slough in close proximity to alignment AA.

Alignment D13 encroaches on the 100-year floodplain at **Auburn Ravine** in the vicinity of Moore Road for a distance of 305 m (1,000 ft). The floodplain at this location is designated Zone A. The HEAPS estimates a 100-year BFE of 39 m (128 ft) at the D13 alignment crossing. The HEAPS proposes a bridge length of 158.5 m (520 ft) and a minimum soffit elevation of 31.7 m (104 ft)

Alignment D13 encroaches on the 100-year floodplain at **Markham Ravin**e approximately 914 m (3,000 ft) south of Nicolaus Road for a distance of 91.4 m (300 ft). The floodplain at this location is designated Zone A. The estimated 100-year BFE is 30.8 m (101 ft). The HEAPS proposes a bridge length of 129.5 m (425 ft) and a minimum soffit elevation of 31.7 m (104 ft). The HEAPS advises that additional survey data will be required at Markham Ravine to determine backwater effects. The bridge length may be reduced based on additional studies.

Alignment D13 joins alignment D1 at a location approximately 2,286 m (7,500 ft) south of Wise Road. Please see the D1 alignment descriptions for floodplain encroachment and waterway crossing information north of the D1/D13 convergence.

4.8.1 Summary

Table 4-25 is a summary of the 100-year floodplain encroachment lengths. Figure 4-5 shows the location of these encroachments.

Table 4-25 Summary of 100 year Floodplain Encroachment Lengths

Alignment	Auburn Ravine	Markham Ravine	Markham Ravine Lower Tributary	Coon Creek	Yankee Slough
AAC2	320 m *(1050 ft)*	21 m *(70 ft)*	75 m *(250 ft)*	640 m *(2100 ft)*	213 m *(700 ft)*
A5C1	305 m *(1000 ft)*	122 m *(400 ft)*	183 m *(600 ft)*	884 m *(2900 ft)*	152 m *(500 ft)*
D1	396 m *(1300 ft)*	91 m, 61 m, &122m[1] *(300 ft, 200 ft & 400 ft)*	NA	1128 m *(3700 ft)*	213 m *(700 ft)*
D13	305 m *(1000 ft)*	91 m *(300 ft)*	NA	1128 m *(3700 ft)*	213 m *(700 ft)*

[1] Crosses at three locations

Source: Location Hydraulic Study Update (1999)

Figure 4-5 Flood Boundary Map

Alignment D13 appears to have the lowest potential for adverse impacts due to floodplain encroachments. The proposed crossings at Coon Creek may require submittals to FEMA for floodplain boundary revisions.

When the final alignment is selected for the Lincoln Bypass, additional drainage studies, surveys and bridge modeling will be required to finalize project plans and complete floodplain encroachment mitigation proposals.

4.9 NATURAL RESOURCES

This section discusses and compares the impacts to biological resources and wetlands that are expected to occur as a result of the proposed project. All impact determinations are based on 76 m (250 ft) wide alignments. The actual impact to some resources may be less depending on the final roadway footprint within the selected alignment.

A Park and Ride has been proposed for all the alignments as a part of this project. The park and ride facility will be located within the proposed right-of-way for the braided ramps and the existing state right-of-way adjacent to the Industrial Blvd. and Highway 65 intersection. The geometric layout of the park and ride can be designed independently from any alignment selected. It is proposed to build the first stage of the park and ride facility that will accommodate approximately 120 cars with the possibility of increasing to 1200 cars for future demand. The location of the park and ride is shown in Figure 2.3. Impacts for the Park and Ride would be the same for all the alignments and are shown in the table below.

Table 4-26 Park and Ride Resources Impacts

Resource	Impact
Northern Hardpan Vernal Pools	9.7 ha (23.9 ac)
Northern Volcanic Mudflow Vernal Pool	1.8 ha (4.5 ac)
Vernal Pool	0.3 ha (0.7 ac)
Vernal Swales	0.16 ha (0.4 ac)
Vernal Marsh	0.04 ha (0.1 ac)
Valley Freshwater Marsh	0.24 ha (0.6 ac)

Two alternatives were developed well after initial studies were completed. These alternatives; D13 North Modification and D13 South Modification were developed in response to public input in the case of D13 South and the potential for a Conservation Easement on land required for all alternatives at the north end of the project in the case of and D13 North Modification. The Study Area was expanded to allow consideration of these alternatives.

Once an alternative is selected, additional evaluation of the potential impacts to listed species will be conducted, supported by additional focused surveys where necessary. A Biological Assessment documenting these specific impacts will be prepared that will be used for Section 7 consultation with the U.S. Fish and Wildlife Service (FWS) and the National Marine Fisheries Service (NMFS) under the Federal Endangered Species Act and coordination with California Dept. of Fish and Game (CDFG) as necessary under the California Endangered Species Act.

To initiate the current studies, an annotated list of special status plant and wildlife species potentially occurring within the project area was compiled. The list was generated by querying the California Natural Diversity Data Base (CNDDB 1998) and California Native Plant Society Electronic Inventory (CNPS) for the Sheridan, Lincoln, Pleasant Grove and Roseville quadrangles, and by obtaining a FWS list of special status species potentially occurring in the project area. Species lists generated through this process are included in Chapter 7, Comments and Coordination. Personnel from FHWA, the Department, FWS, NMFS and CDFG were contacted to discuss potential species-related issues and to review/coordinate survey efforts. Agency staff contacted and the issues discussed are listed in Chapter 7, Comments and Coordination.

4.9.1 Regulatory Requirements

This section summarizes the responsibilities of key agencies involved in the review of the Natural Environment Study Report (NESR) and related project documents. Coordination with the agencies is also discussed. Copies of correspondence with the agencies are included in Appendix D and E.

U.S. Environmental Protection Agency (EPA)

EPA has primary responsibility for administration of the Clean Water Act and has oversight authority on 404 permitting issues. EPA has concurred with the project purpose and need and the range of alternatives to be evaluated.

U.S. Army Corps of Engineers (ACOE)

The ACOE is a signatory agency under the NEPA/404 Memorandum of Understanding (MOU) and has concurred with the projects purpose and need and the range of alternatives. Under Section 404 of the Clean Water Act, the ACOE regulates the discharge of dredged or fill material into waters of the U.S. A Section 404 permit will be required authorizing the discharge of dredged or fill material associated with roadway construction into vernal pools and other wetlands and regulated waters.

The ACOE verified the original wetland delineation for the Study Area in 1991, and has provided direction on updating the delineation and re-verifying the findings. A meeting was held with ACOE personnel on March 10, 1998 (Cavanaugh, March 10,

1998) to discuss the possibility of delaying the update and re-verification of wetlands until a preferred alternative was chosen. It was agreed that that approach would be acceptable.

U.S. Fish and Wildlife Service (FWS)

Under the Fish and Wildlife Coordination Act of 1958, Federal agencies are required to coordinate during project planning stages with the FWS and with the State agency responsible for fish and wildlife resources on activities that modify any body of water. Under Section 7 of the Federal Endangered Species Act, Federal agencies are required to consult with FWS on any action that "may affect" a Federally listed threatened or endangered species or designated critical habitat. FWS is also a signatory agency to the NEPA/404 Integration MOU and has concurred with the purpose and need and the range of alternatives evaluated for the project.

FWS will continue to be involved in the project through review of environmental documents, participation in the 404 permitting process and in Section 7 consultation for potential project effects on listed species.

National Marine Fisheries Service (NMFS)

Under Section 7 of the Federal Endangered Species Act, Federal agencies are required to consult with NMFS on any action that "may affect" a Federally listed threatened or endangered species or designated critical habitat for which NMFS has responsibility. For this project, NMFS has responsibility for reviewing project effects to anadromous fish.

California Regional Water Quality Control Board (RWQCB)

A Section 401 Water Quality Certification from the Regional Water Quality Control Board is required in conjunction with the Section 404 permitting process. A 401 Certification will be required before the 404 permit is considered valid. Application to the RWQCB is generally made after the environmental document is complete.

California Department Of Fish and Game (CDFG)

Coordination with CDFG will be necessary under the Fish and Wildlife Coordination Act and under the California Endangered Species Act for potential impacts to State listed species. In addition, a Section 1601 Agreement will be required from CDFG to authorize work in streams and other waterbodies. CDFG will also be involved in the review of project environmental documents and in the 404 permitting process.

4.9.2 Impacts to Plant Communities

The potential impacts to plant communities within each alternative are presented in Table 4-27. Figure 3-14 in Chapter 3 shows the plant communities along with the project

footprint. The total area of each community type within the project Study Area is also provided for perspective. This information is presented graphically in a bar chart in Figure 4-6.

Figure 4-6 Comparison of Potential Impacts to Key Resources

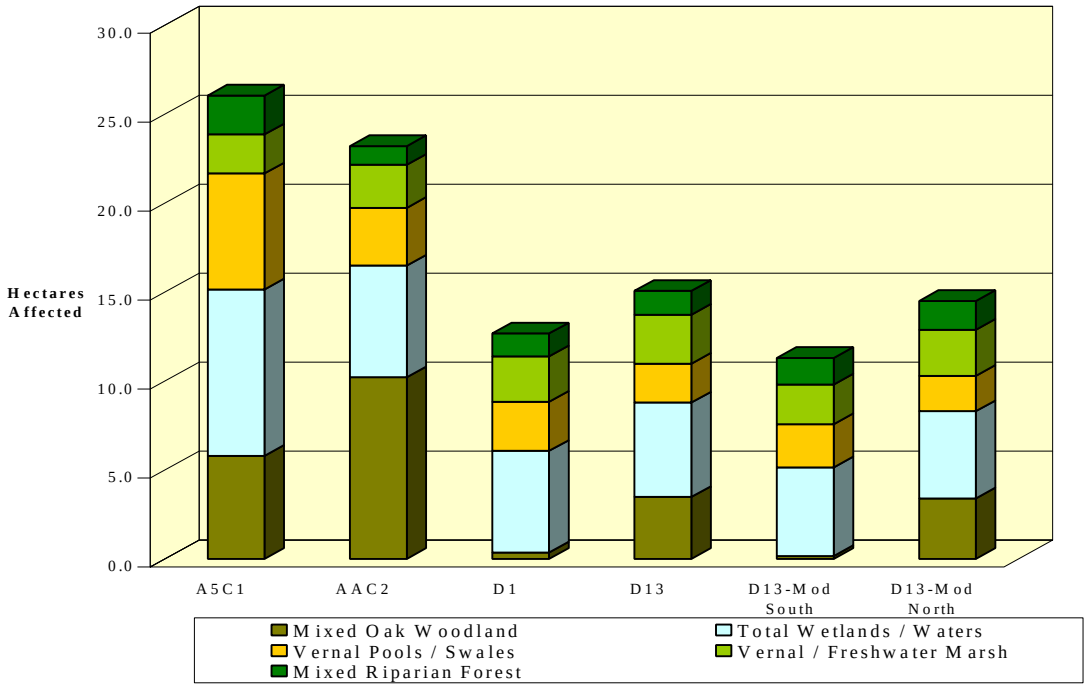


Table 4-27 Potential Impacts to Plant Communities Occurring in the Study Area

Community	Total Within Study Area	A5C1	AAC2	D1
Developed/Disturbed	177.1 ha	26.1 ha	18.5 ha	11.1 ha
	437.2 ac	*64.5 ac*	*45.7 ac*	*27.3 ac*
	8.5 %	14.0%	10.3%	6.0%
Agricultural Lands	874.6 ha	54.4 ha	51.1 ha	84.4 ha
	2159.6 ac	*134.3 ac*	*126.1 ac*	*208.5 ac*
	42.2 %	29.2%	28.5%	46.0%
Non-native Grassland	211.6 ha	14.8 ha	19.4 ha	34.9 ha
	522.4 ac	*36.6 ac*	*48.0 ac*	*86.1 ac*
	10.2 %	8.0%	10.8%	19.0%
Mixed Oak Woodland	49.4 ha	5.8 ha	10.2 ha	0.4 ha
	122.0 ac	*14.3 ac*	*25.2 ac*	*0.9 ac*
	2.4 %	3.1%	5.7%	0.2%
Mixed Riparian Forest	17.9 ha	2.2 ha	1.1 ha	1.3 ha
	44.1 ac	*5.4 ac*	*2.6 ac*	*3.2 ac*
	0.9 %	1.2%	0.6%	0.7%
Valley Freshwater Marsh	61.5 ha	1.6 ha	1.5 ha	2.4 ha
	151.9 ac	*4.0 ac*	*3.7 ac*	*5.9 ac*
	3.0 %	0.9%	0.8%	1.3%

Community	Total Within Study Area	A5C1	AAC2	D1
Great Valley Willow Scrub	1.9 ha	0.1 ha	0.1 ha	0.2 ha
	4.7 ac	*0.3 ac*	*0.3 ac*	*0.4 ac*
	0.1 %	0.1%	0.1%	0.1%
Grassland / Northern Hardpan Vernal Pool Complex	646.9 ha	79.4 ha	75.6 ha	48.3 ha
	1597.3 ac	*196.0 ac*	*186.7 ac*	*119.2 ac*
	31.2 %	42.6%	42.2%	26.3%
Grass/Northern Volcanic Mudflow Vernal Pool Complex	11.9 ha	0.7 ha	0.4 ha	0.1 ha
	29.4 ac	*1.7 ac*	*1.0 ac*	*0.2 ac*
	0.6 %	0.4%	0.2%	0.0%
Vernal Marsh	10.3 ha	0.6 ha	0.9 ha	0.2 ha
	25.5 ac	*1.4 ac*	*2.3 ac*	*0.6 ac*
	0.5 %	0.2%	0.5%	0.1%
Open Water	11.3 ha	0.5 ha	0.5 ha	0.2 ha
	28.0 ac	*1.3 ac*	*1.2 ac*	*0.6 ac*
	0.5 %	0.4%	0.3%	0.1%
Total	**2074.5 ha**	**186.2 ha**	**179.3 ha**	**183.4 ha**
	5122.1 ac	***459.8 ac***	***442.8 ac***	***452.7 ac***
	100.0 %	**100.0%**	**100.0%**	**100.0%**

Community	Total Within Study Area	D13	D13 – Modified South	D13 - Modified North
Developed/ Disturbed	177.1 ha	12.6 ha	15.1 ha	15.6 ha
	437.2 ac	*31.2 ac*	*37.2 ac*	*38.6 ac*
	8.5 %	6.3%	7.5%	7.6%
Agricultural Lands	874.6 ha	102.5 ha	95.5 ha	96.7 ha
	2159.6 ac	*253.2 ac*	*235.7 ac*	*238.8 ac*
	42.2 %	51.4%	47.5%	46.9%
Non-native Grassland	211.6 ha	26.3 ha	33.2 ha	21.7 ha
	522.4 ac	*64.9 ac*	*82.0 ac*	*53.6 ac*
	10.2 %	13.2%	16.5%	10.5%
Mixed Oak Woodland	49.4 ha	3.5 ha	0.2 ha	3.5 ha
	122.0 ac	*8.6 ac*	*0.4 ac*	*8.6 ac*
	2.4 %	1.7%	0.1%	1.7 %
Mixed Riparian Forest	17.9 ha	1.3 ha	1.2 ha	1.3 ha
	44.1 ac	*3.3 ac*	*3.0 ac*	*3.3 ac*
	0.9 %	0.7%	0.6%	0.6 %
Valley Freshwater Marsh	61.5 ha	2.5 ha	2.4 ha	2.5 ha
	151.9 ac	*6.1 ac*	*6.0 ac*	*6.1 ac*
	3.0 %	1.2%	1.2%	1.2 %
Great Valley Willow Scrub	1.9 ha	0.1 ha	0.1 ha	0.1 ha
	4.7 ac	*0.3 ac*	*0.2 ac*	*0.3 ac*
	0.1 %	0.1%	0.0%	0.1%

Community	Total Within Study Area	D13	D13 – Modified South	D13 - Modified North
Grassland / Northern Hardpan Vernal Pool Complex	646.9 ha	49.7 ha	51.8 ha	63.5 ha
	1597.3 ac	*122.6 ac*	*128.0 ac*	*156.9 ac*
	31.2 %	24.9%	25.8%	30.8 %
Grassland/Northern Volcanic .Mudflow Vernal Pool Complex	11.9 ha	0.7 ha	0.7 ha	0.7 ha
	29.4 ac	*1.7 ac*	*1.7 ac*	*1.8 ac*
	0.6 %	0.3%	0.3%	0.4 %
Vernal Marsh	10.3 ha	0.2 ha	0.3 ha	0.2 ha
	25.5 ac	*0.5 ac*	*0.8 ac*	*0.5 ac*
	0.5 %	0.1%	0.2%	0.1 %
Open Water	11.3 ha	0.2 ha	0.3 ha	0.2 ha
	28.0 ac	*0.6 ac*	*0.7 ac*	*0.6 ac*
	0.5 %	0.1%	0.1%	0.1%
Total	**2074.5 ha**	**199.7 ha**	**200.8 ha**	**206.2 ha**
	5122.1 ac	***493.2 ac***	***495.8 ac***	***509.1 ac***
	100.0 %	**100.0%**	**100.0%**	**100.0%**

The project may have adverse direct and indirect impacts on special status species and their habitats. Direct effects are defined by the Council on Environmental Quality (CEQ) as those effects that are caused by the project or action and occur at the same time and place as the project or action. Indirect effects are caused by the project or action, but occur later in time or are farther removed in distance, but still foreseeable.

Direct effects of this project may include the permanent removal of vegetation and associated wildlife within the construction footprint, as well as temporary effects resulting from construction access and staging. Indirect effects include changes in hydrology (flooding or de-watering), shading (under bridges or adjacent to large fills), increased disturbance and noise, introduction of exotic species, etc. Except for altered hydrology, the potential for indirect effects is generally limited to the area directly adjacent to the new roadway.

Provisions will be made in the project design to "pass through" all significant natural drainage features. Consequently, project effects due to altered hydrology will be minimal except, perhaps, in the direct vicinity of the project footprint.

As shown in Table 4-28 and Figure 4-6, the greatest impacts, regardless of the alternative alignment, are to agricultural lands and annual grassland, with and without vernal pools. These are the most common communities in the project area. The western alignments (D1 and D13) have a proportionately greater impact on agricultural lands, while the eastern alignments (A5C1 and AAC2) have a proportionately greater impact on vernal pool habitats. The eastern alignments also affect more developed and disturbed

acreage. Impacts to riparian forest vary from 2.2 ha (5.4 ac) for A5C1 to 1.1 ha (2.6 ac) for AAC2. Impacts to freshwater marsh habitat range from about 1.5 ha (3.7 ac) for AAC2 to 2.5 ha (6.1 ac) for Alternatives D13 and the D13 North Modification. The impacts to mixed oak woodland vary widely, from a low of 0.36 ha (0.9 ac) for the D13 North Modification to a high of 10.2 ha (25.2 ac) for the AAC2 alignment. Impacts to volcanic mudflow vernal pool/grassland complex and vernal marsh are relatively small with any alternative. Volcanic mudflow vernal pool/grassland impacts range from 0.1 ha (0.2 ac) for the D 1 to 0.7 ha (1.8 ac) for the rest.

All alternatives will impact wildlife associated with the affected plant communities. Agricultural land and non-native grasslands (both with and without vernal pools) are the most common habitats, and the extent of wildlife impacts is directly related to the acreage of these habitats affected by each alternative. While there is much less acreage of mixed oak woodland, mixed riparian forest and valley freshwater marsh within the Study Area, these communities provide higher quality wildlife habitat, generally due to the availability of water and/or greater structural diversity. Further, the more limited extent of these habitats in the Study Area amplifies the importance of project impacts to these habitats. Consequently, impacts to these high quality communities are generally considered more likely to have adverse impacts to wildlife.

Disturbance to wildlife habitat will likely disrupt intra- and inter-specific wildlife interactions, particularly to the less mobile amphibians, reptiles and small mammals. During the initial phases of construction, these less mobile wildlife species may be killed outright, while more mobile species such as birds and larger mammals will be displaced into adjacent habitat that is likely currently occupied, resulting in increased competition and predation pressures on the newly displaced individuals as well as those already present in the habitat. These interactions could lead to increased stress, which in turn could lead to reduced reproduction.

4.9.3 Wildlife Corridors

Although the riparian communities, particularly along Auburn Ravine and Coon Creek, provide relatively unobstructed wildlife corridors through the Study Area, these corridors are crossed by existing SR 65, the UPTC tracks, and a number of secondary roads and farm roads. Existing SR 65 is immediately adjacent to the UPTC tracks through most of the Study Area, and the main drainage (Auburn Ravine, Markham Ravine, Coon Creek) are conveyed through culverts beneath these features. These culverts have a combined length of up to 61 m (200 ft). Consequently, the SR 65/ UPTC tracks represent an existing hindrance to wildlife movement along the east side of the Study Area.

The new freeway corridor, which will be constructed on a raised road prism, will impede local wildlife movements for several species of amphibians, reptiles and mammals. Movement by smaller, less mobile species may be blocked by the roadway, possibly limiting the availability of resources and hindering dispersal and genetic exchange within populations. More mobile species (e.g., lizards, snakes, skunks, raccoons, ground squirrels, coyotes) may incur increased mortality by attempting to cross the freeway. Culverts will be provided at drainage locations, but are not expected to mitigate the potential impacts to wildlife movements. The western alignments (D1 and D13), which are more isolated from existing roads and developed areas, are expected to have the greatest impact to wildlife movements.

A5C1 and AAC2 Alignments

These alternatives follow the eastern corridor (on the east side of the airport). As noted previously, this corridor has a proportionately greater percentage of developed/disturbed acreage and less agricultural land than the western corridor. While the impact to non-native grassland is somewhat less with these alternatives, the impact to grassland/vernal pool complex is substantially (73%) greater than with the western alignments.

The A5C1 Alignment has the greatest potential impact to mixed riparian forest (2.2 ha [5.4 ac]) of any alternative. Much of this habitat is associated with Coon Creek. This habitat is structurally diverse and represents the highest quality wildlife habitat available in the Study Area. A number of mammal, bird, reptile and amphibian species would potentially be affected, including many special status species. Indirect impacts may also occur due to displacement of more sensitive species away from the highway corridor. The AAC2 alignment crosses Coon Creek further east, where the riparian corridor is much narrower. Consequently, the direct impact 1.05 ha (2.6 ac) and indirect impact to the riparian corridor are reduced.

D1 and D13

These alternatives follow the western alignment (west of the airport) around Lincoln. As noted previously, these alternatives impact much more agricultural land and less developed/disturbed acreage than the A5C1 and AAC2 alignments. While these alternatives would impact a somewhat greater area of non-native grassland, the impacts to grassland/vernal pool complex would be substantially (43%) less. The impacts to mixed oak woodland would also be less, the D1 alignment impacts only 0.36 ha (0.9 ac) of this community, compared with 10.2 ha (25.2 ac) AAC2 alignments. Marsh impacts are somewhat greater with these alternatives due to the crossing of extensive marsh habitat along Markham Ravine.

The D1 and D13 alternatives will adversely affect wildlife associated with agricultural lands and grasslands (with and without vernal pools) that comprise about 90% of the alignment acreage. Impacts to wildlife species associated with woodland and forest habitats would be reduced with these alternatives compared to the eastern alternatives. Marsh impacts are greater with these alignments, and the marsh habitat affected is of particularly high quality, including a high diversity of open water, emergent wetlands and willow scrub habitats. Consequently, impacts to waterfowl and wading birds will likely be greater with these alternatives.

D13 Modifications

D13 North Modification has similar impacts to most plant communities compared with D13. D13 South Modification avoids the large oak woodland at the southern end of the Study Area; consequently, the impact to oak woodland with this alignment is reduced by 95% compared with D 13 and the other D13 modifications. However, this alignment impacts more vernal pools, marsh and total wetlands than any other D alignment.

4.9.4 Special Status Plants & Animals

Plants

The proposed project will directly impact special status plants. Indirect impacts may also occur although they are not likely to extend beyond the limits of the 76 m (250 ft) wide alignments. The species most likely to be affected are Ahart's dwarf rush, Bogg's Lake hedge hyssop, dwarf downingia and legenere. Ahart's dwarf rush and Bogg's Lake hedge-hyssop have only been found in the eastern portion of the Study Area and may be limited to the eastern corridor. The downingia occurs throughout the Study Area. While the legenere has not been observed, it is likely to occur. For purposes of comparing alternatives, it is assumed that Ahart's dwarf rush and Bogg's Lake hedge hyssop are more likely to be present within the "AC" alignments, while dwarf downingia and legenere are equally likely be present in all alignments. These are all vernal pool plants; thus, the potential for impacts is directly related to the extent of vernal pool impacts within an alignment.

Impacts to these plants can be mitigated through minimization of vernal pool impacts in the final alignment routing and through preservation and re-creation of appropriate habitat.

Oak Woodland Impacts

The oak woodlands impacted by the project include valley oaks, blue oaks and interior live oaks. The average size of oak trees in the woodland areas is about 4.8 cm (19 in) dbh.

Wildlife

Mammals

The project will potentially affect a number of protected wildlife species. Several special status bat species (greater western mastiff bat, small-footed myotis, long-eared myotis, fringed myotis, long-legged myotis, Yuma myotis, pale big-eared bat and Townsend's western big-eared bat) may potentially occur in the Study Area based on the availability of suitable habitat. These bats may use trees and/or buildings and other structures (e.g., bridges) for roosting and may forage over a variety of habitats in the Study Area. Alternatives that impact large numbers of trees (e.g., AAC2) and buildings and other structures would have greater potential to impact bats. Pre-construction surveys will be required to accurately assess the potential for impacts to bats. Impacts can be mitigated through timing of construction, excluding bats from structures and minimizing impacts to potential roost sites.

The San Joaquin pocket mouse is a federal species of concern. It is not listed as threatened or endangered. This species occurs in grasslands and oak savanna habitats with friable soils. San Joaquin pocket mice were not observed in the study area. Implementation of proposed mitigation measures to minimize impacts to oak woodlands and other habitats would reduce potential impacts to this species.

Birds

A number of special status bird species are known to occur in the Study Area and may be adversely affected by the project. Forest and woodland areas provide habitat for Cooper's hawk, sharp-shinned hawk and Swainson's hawk. Habitat for northern harrier, burrowing owl, tricolored blackbird, California horned lark, grasshopper sparrow and lark sparrow occurs throughout the Study Area. Habitat for double-crested cormorant, white-faced ibis and American bittern occurs along Markham Ravine and other locations. Nests or nesting behavior have been observed for several of these species. Foraging habitat for prairie falcon, golden eagle, mountain plover and ferruginous hawk also occurs in the Study Area.

The project will directly eliminate foraging and/or nesting habitat used by these species. The AAC2 alignment, which potentially impacts 10.8 ha (26.8 ac) of mixed oak woodland, may impact nesting and/or foraging habitat for Cooper's, sharp-shinned and Swainson's hawks. The western alignments (D1 and D13 and modified D 13's) affect the largest acreage of agricultural land, grassland, riparian forest and marsh; consequently, these alternatives would potentially have greater impacts to special status bird species.

Pre-construction surveys of the selected alignment are required in order to accurately determine the potential for impacts to special status bird species. In addition to avoidance of key habitat and habitat preservation, construction timing will help mitigate potential impacts.

Swainsons' Hawk

During a two-day survey in May 1999, at least eight different Swainsons' hawks were observed within the project area and a 16.1 km (10 mi) radius. The observations included one pair of hawks constructing a nest and a second pair exchanging prey, indicating the establishment of a territory. At least three of the hawks were observed within the Study Area, including one of the pairs. The combination of extensive foraging habitat adjacent to suitable nesting sites makes the Study Area highly suitable for this species. The project may eliminate 121-162 ha (300-400 ac) of foraging habitat.

Potential impacts to this species from the proposed project include direct loss of foraging and nesting habitat and indirect effects due to disturbance along the highway corridor. Mitigation for potential impacts to Swainson's hawk in accordance with CDFG guidelines will be required.

The primary reason for the decline of this species, as with other raptors, is thought to be agricultural conversion of native habitats, primarily grassland and riparian forest.

Reptiles

Special status reptiles observed or expected to occur in the study include the northwestern pond turtle and California horned lizard. Potential impacts to pond turtles will be greatest with the western alignments that remove more aquatic habitat. The horned lizard occurs in a variety of habitat types; consequently, potential impacts to this species are generally related to the overall acreage of habitat impacted.

Amphibians

The special status amphibians potentially occurring in the Study Area are the western spadefoot toad and the California red-legged frog. Spadefoots occupy a variety of lowland habitats, and potential impacts to this species are related to the overall acreage of habitat impacted by the selected alignment.

Red-legged frogs inhabit lowlands and foothills in or near permanent sources of deep water. The frog prefers ponds or creeks with extensive shoreline vegetation but will disperse 1.6 km (1 mi) or more during or after rain events. Although suitable habitat for the California red-legged frog exists in the project area, due to the presence of non-native predators (i.e.,bullfrog, crayfish, largemouth bass etc.) this species is not expected to occur.

Fish

Fall-run chinook salmon have been observed in low numbers in Auburn Ravine, Coon Creek and Ingram Slough; Central Valley steelhead may also occur in similar habitat in the project area. Pacific lampreys have been observed and the river lamprey could potentially occur. In general, impacts to these special status fish species (and other fish), if present, should be minor. Bridges or culverts are proposed for all stream crossings. The project will not block migration or otherwise impede fish movements. Additional mitigation measures (e.g., erosion/siltation control) can be implemented to ensure that the project does not adversely affect these species.

Formal surveys were not conducted, but chinook salmon were observed, and steelhead are assumed to be present because of historic occurrences in this area.

Chinook Salmon

Juvenile fall-run/late fall-run chinook salmon have been observed in low numbers in the project area in Auburn Ravine, Coon Creek and Ingram Slough. The previous NES reported that these fish were most likely surplus fingerlings planted by CDFG. It is documented that CDFG planted surplus fingerlings in drainage within the project area in an attempt to maximize natural rearing habitat. However, it is also possible that naturally occurring fall-run/late fall-run chinook salmon could occur in the project area. The reaches of the drainage that flow through the project area do not contain suitable spawning habitat for fall-run/late fall-run salmon but upstream reaches of Auburn Ravine and Coon Creek contain potential spawning habitat. In addition, drainage and tributaries within the project area could provide non-natal rearing habitat for salmon fry in early stages of development.

No winter-run or spring-run chinook salmon have been observed in the project area, and these evolutionary significant units (ESU) are not expected to occur.

Potential project-related impacts to chinook salmon could include direct impacts to individuals during work in the drainage and degradation of habitat due to vegetation removal, siltation, etc.

Central Valley Steelhead

Although not observed in the Study Area during previous surveys, Central Valley steelhead could potentially utilize upstream reaches of Auburn Ravine and/or Coon Creek as spawning habitat. In addition, drainage and tributaries within the project area could provide non-natal rearing habitat for steelhead fry in early stages of development.

Potential project-related impacts to steelhead would be similar to those for chinook salmon.

Invertebrates

The Federally listed vernal pool fairy shrimp and vernal pool tadpole shrimp have been recorded in the project area or immediate vicinity and are assumed to be present within all alignments. Tadpole shrimp were not found in the study area, but are known to occur in vernal pools outside the study area, near the western boundary of the study area. Because of the close proximity of this species to the project site, populations of this species could become established on the project site in the future. These species are generally restricted to vernal pools; thus, alternatives with greater potential impacts to vernal pools (A5C1 and AAC2) will likely have greater impact to these invertebrates. Because all alignments impact vernal pools, it is not possible to avoid impacting these species. The primary threat to vernal pool fairy shrimp and tadpole shrimp is habitat loss associated with development. Potential project-related impacts to this species included direct filling of vernal pools, indirect impacts through changes in hydrology and degradation of pools through introduction of invasive species. Mitigation in accordance with FWS guidelines will be required.

Valley Elderberry Longhorn Beetle

The valley elderberry longhorn beetle may also occur in the Study Area, although the beetle's host plant, blue elderberry, is not common in the Study Area and no signs of beetles have been recorded in the Study Area. All alignments may potentially impact elderberry plants. Mitigation for any impacts to appropriate habitat will be required in accordance with the most recent FWS guidelines. Elderberry shrubs occur at low density in the project area near Auburn Ravine, but no evidence of beetle usage was observed.

Threats to this species consist of habitat loss, generally from development activities. Potential project-related impacts to this species consist of direct and indirect impacts to elderberry shrubs during project construction.

4.9.5 Impacts to Key Resources

Table 4-28 provides a side-by-side comparison of the impacts to key resources associated with each of the six alternatives. Figure 4-6 on page 4-77 provides a graphical presentation of this same information. As the table and figure show, none of the alternatives are obviously superior in terms of the impacts to key resources. These resources are broadly distributed throughout the project corridor and none of the alignments minimizes impacts to all resources.

In addition to project impacts on biological resources, another factor that must be considered in evaluating alternatives is the effectiveness of available mitigation measures in offsetting project-related losses. It is not possible to fully offset impacts to mixed oak woodland and mixed riparian forest, regardless of the mitigation measures employed

since many of the trees are over 100 years old, and development of mature riparian forest requires decades. Young trees can be planted and, over time, viable habitat will develop. However, the temporal loss of habitat value while the trees grow and the habitat structure develops cannot be directly offset. Vernal pool impacts may also be difficult to offset due, in part, to the high probability of special status species being present. In comparison, freshwater marsh impacts are relatively easy to offset. Consequently, impacts to oak woodlands, riparian forest and vernal pool habitats should be viewed as more significant than impacts to freshwater marsh.

Table 4-28 Comparison of Direct Impacts to Key Resources

Align-ment	Natural Communities	Wetlands / Waters	Summary
A5C1	80.1 ha (197.7 acres) grasslands containing vernal pools 2.2 ha (5.4 acres) riparian forest 5.8 ha (14.4 acres) oak woodland	9.3 ha (23.1 acres) wetlands/waters 6.5 ha (16.1 acres) vernal pools/swales 2.2 ha (5.4 acres) of marsh Two high value vernal pool complexes	Greatest total wetland, vernal pool, grassland w/ vernal pools and riparian forest impacts of any alternative
AAC2	76.0 ha (187.7 acres) grasslands containing vernal pools 1.1 ha (2.6 acres) riparian forest 10.2 ha (25.2 acres) oak woodland	6.1 ha (15.5 acres) wetlands/waters 3.2 ha (8.0 acres) vernal pools/swales 2.4 ha (6.0 acres) of marsh Two high value vernal pool complexes	Less impact to riparian forest, total wetlands and vernal pools than A5C1; large impact to oak woodlands
D1	48.8 ha (119.4 acres) grasslands containing vernal pools 1.3 ha (3.2 acres) riparian forest 0.4 ha (0.9 acre) oak woodland	5.7 ha (14.1 acres) wetlands/waters 2.8 ha (6.8 acres) vernal pools/swales 2.6 ha (6.3 acres) of marsh One high value marsh	Less impact to vernal pool grasslands, vernal pools and total wetlands than AAC2 and A5C1. Small impact to oak woodlands.
D13	50.4 ha (124.3 acres) grasslands containing vernal pools 1.3 ha (3.3 acres) riparian forest 3.5 ha (8.6 acres) oak woodland	5.3 ha (13.1 acres) wetlands/waters 2.2 ha (5.4 acres) vernal pools/swales 2.8 ha (6.8) acres of marsh One high value marsh	Comparable to D1 except for greater impact to oak woodlands, less impact to vernal pools.
D13 Mod. South	52.5 ha (129.7 acres) grasslands containing vernal pools 1.2 ha (3.0 acres) riparian forest 0.2 ha (0.4 acres) oak woodland	6.8 ha (16.8 acres) wetlands/waters 3.5 ha (8.8 acres) vernal pools/swales 2.8 ha (7.0) acres of marsh One high value marsh	Greatest impact to wetlands and vernal pools of any D alternative. Smallest impact to oak woodlands of any alternative.
D13 Mod. North	64.2 ha (158.7 acres) grasslands containing vernal pools 1.3 ha (3.3 acres) riparian forest 3.5 ha (8.6 acres) oak woodland	5.1 ha (13.8 acres) wetlands/waters 2.1 ha (5.2 acres) vernal pools/swales 3.1 ha (7.6) acres of marsh One high value marsh	Impacts comparable to D13 except for greater impact to grassland/vernal pool complex.

4.9.6 Jurisdictional Waters

Coordination with the ACOE has been on-going. A wetlands delineation was completed in 1994, and verified by the ACOE. (See Chapter 7, Comments and Coordination) However, that delineation has long since expired. After discussion with the ACOE, it was agreed that for the purposes of comparison of the alternatives, the 1994 delineation would be used (Personal communication, Cavanaugh, March 10,1998). When an alignment has been chosen, an additional wetland verification will be completed

which will be used to determine the precise impacts of the project. The project will impact wetlands and other waters subject to regulation by the ACOE and/or CDFG.

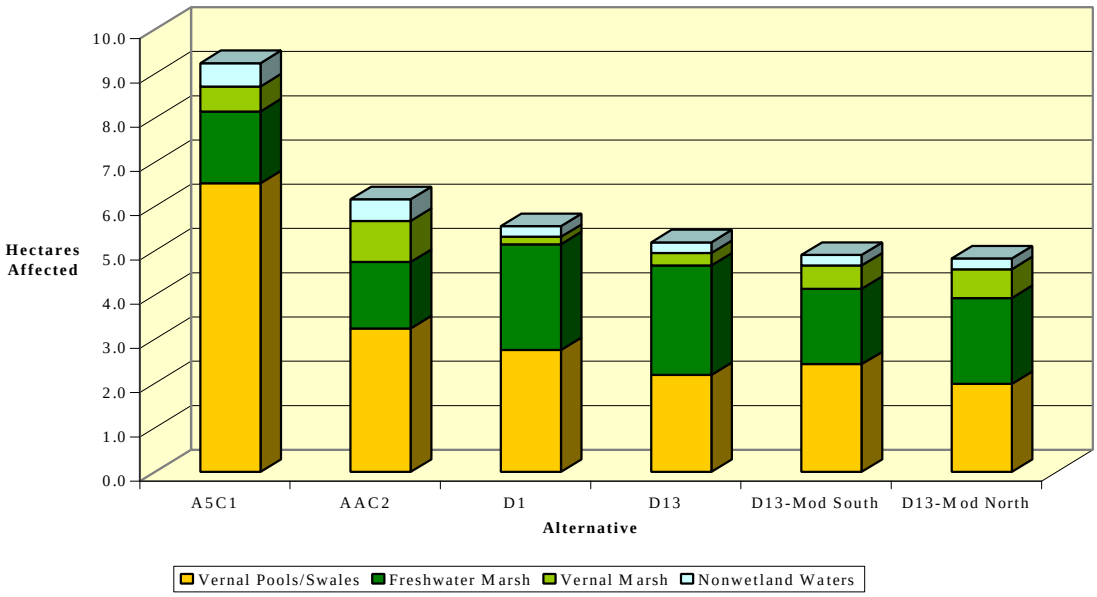
Impacts to wetlands and other jurisdictional waters within each alternative alignment are presented in Table 4-29 . The table shows acreage of each wetland type within each alternative alignment and the percentage of each type relative to the total wetland area within the alignment. The total acreage of jurisdictional waters within the project area, and the percentage of each wetland type relative to the total, is also provided for comparison.

Figure 4-7 provides a graphical presentation of the impacts to ACOE jurisdictional waters with each project alternative. Figure 3-16 in Chapter 3, shows an aerial with the wetlands marked along with an overlay of the proposed project.

Table 4-29 Impacts to Jurisdictional Waters Occurring in the Study Area

ACOE Wetlands	Total Within Study Area	A5C1	AAC2	D1	D13	D13 - Mod. South	D13 - Mod. North
Willow Scrub	1.9 ha	0.1 ha	0.1 ha	0.2 ha	0.1 ha	0.1 ha	0.1 ha
	4.7 ac	*0.3 ac*	*0.3 ac*	*0.4 ac*	*0.3 ac*	*0.3 ac*	*0.3 ac*
	1.8%	1.4%	2.1 %	3.0 %	2.4%	1.9%	2.3 %
Freshwater Marsh	61.5 ha	1.6 ha	1.5 ha	1.9 ha	2.5 ha	2.4 ha	2.5 ha
	151.9 ac	*4.0 ac*	*3.7 ac*	*2.4 ac*	*6.1 ac*	*6.0 ac*	*6.1 ac*
	58.4%	18.3%	25.9 %	43.7%	48.8%	37.3 %	46.2%
Vernal Marsh	8.9 ha	0.6 ha	0.9 ha	0.2 ha	0.3 ha	0.4 ha	0.6 ha
	21.9 ac	*1.4 ac*	*2.3 ac*	*0.4 ac*	*0.7 ac*	*1.0 ac*	*1.6 ac*
	8.4%	6.4%	16.1%	3.0%	5.6 %	6.2%	12.1%
Vernal Pool	31.0 ha	6.2 ha	3.1 ha	2.5 ha	1.9 ha	3.2 ha	1.9 ha
	76.5 ac	*15.4 ac*	*7.6 ac*	*6.1 ac*	*4.6 ac*	*8.0 ac*	*4.7 ac*
	29.4%	70.6 %	53.1 %	45.2%	36.8%	49.7%	35.6 %
Vernal Swale	2.1 ha	0.3 ha	0.2 ha	0.3 ha	0.3 ha	0.3 ha	0.2 ha
	5.2 ac	*0.7 ac*	*0.4 ac*	*0.7 ac*	*0.8 ac*	*0.8 ac*	*0.52 ac*
	2.0%	3.2%	2.8%	5.2%	6.4%	5.0%	3.8 %
Total ACOE Wetlands	105.4 ha	8.8 ha	5.8 ha	5.5 ha	5.1 ha	6.5 ha	5.3 ha
	260.2 ac	*21.8 ac*	*14.3 ac*	*13.5 ac*	*12.5 ac*	*16.1 ac*	*13.2 ac*
ACOE Waters of U.S.	11.7 ha	0.5 ha	0.5 ha	0.2 ha	0.2 ha	0.3 ha	0.2 ha
	28.9 ac	*1.3 ac*	*1.2 ac*	*0.6 ac*	*0.6 ac*	*0.7 ac*	*0.6 ac*
Total Wetland & Waters	117.1 ha	9.4 ha	6.3 ha	5.7 ha	5.3 ha	6.8 ha	5.6 ha
	289.1 ac	*23.1 ac*	*15.5 ac*	*14.1 ac*	*13.1 ac*	*16.8 ac*	*13.8 ac*
CDFG Jurisdictional Waters	92.6 ha	4.5 ha	3.2 ha	4.1 ha	4.2 ha	4.1 ha	4.2 ha
	228.7 ac	*11.0 ac*	*7.8 ac*	*10.1 ac*	*10.3 ac*	*10.0 ac*	*10.3 ac*

Figure 4-7 Potential Impacts to ACOE Jurisdictional Waters



CDFG jurisdiction excludes vernal pools and other wetland features that are not part of a stream or lake, however; riparian habitat is included in CDFG jurisdiction.

As shown in the table and figure, all alignments impact jurisdictional waters, including wetlands. The eastern corridor alternatives impact a proportionately greater area of vernal pools and swales, including the high value vernal pool complex west of the clay pits identified in the Wetland Value Assessment (Chapter 3, Wetlands/Jurisdictional Waters Assessment). The western corridor alternatives impact slightly more marsh habitat, including the high value marsh complex along the east end of Markham Ravine identified in the Wetland Value Assessment. Overall, the impacts to jurisdictional waters are greater with the eastern corridor alternatives, and particularly the A5C1 alignment, which impacts 66 percent more jurisdictional waters than the next highest impacting alternative, AAC2.

4.9.7 Indirect Impacts

This section describes potential indirect impacts to biological resources expected to occur as a result of growth enhanced or facilitated by construction of the proposed project. Because indirect impacts will be similar for all the alignments within the general corridor, conclusions have been generalized for the eastern alignment and western alignment alternatives. Growth is reasonably likely to occur along the new highway corridor, and particularly at the locations of proposed new interchanges. Given the project's proximity to the City of Lincoln, and the growth anticipated for the Lincoln

area, it is reasonable to expect that the SR 65 project may facilitate additional development at these interchange locations beyond what would be expected to occur without the bypass project. However, at this time, most of the surrounding area, especially towards the north end of the project is zoned agricultural.

Indirect Impacts for Eastern Alignments

Nicolaus Road

An interchange is proposed at Nicolaus Road, west of Joiner Parkway serving the AC alternatives. This location is near an area currently being developed with residential uses. According to the City of Lincoln General Plan, this area is all planned to be developed with residential, commercial and industrial uses, except for an open space corridor along Markham Ravine. With growth already planned in this area, growth-inducing impacts associated with the SR 65 project are not expected at this location.

Wise Road

An interchange is proposed at Wise Road serving the AC alternatives. The proposed interchange is located along the City of Lincoln Planning Area[2] boundary, partially within the Planning Area and partially within unincorporated Placer County. Within the Lincoln Planning Area, land use designations are for agriculture and industrial development. The Placer County portion is designated to remain in agriculture. This interchange is located in an area composed of northern hardpan vernal pools. Most of the pools are located just outside of the actual interchange alignment and would not be directly impacted by the project. However, development in the area could result in impacts to vernal pools at this location. Growth in areas zoned for agriculture would require a General Plan amendment and no amendments have been proposed at this time.

Riosa Road

An interchange is proposed for Alignments AAC2 and A5C1 at Riosa Road, west of Sheridan. This area is within unincorporated Placer County, in an area designated to remain in agriculture. This area is currently predominantly agricultural, but also includes some vernal pools east of the proposed interchange. A large freshwater marsh lies just to the south of the proposed interchange. A new interchange at this location could facilitate new development west of Sheridan, resulting in the possible loss of agricultural lands and some vernal pools. Depending on the magnitude of the additional growth, freshwater marsh could also be impacted. A General Plan amendment would be required in order for this additional development to occur.

[2] The City of Lincoln Planning Area includes the City limits plus the Sphere of Influence.

Indirect Impacts for Western Alignments

Nelson Lane

A new interchange is proposed at Nelson Lane, in the southern portion of the project area. Improvements are also proposed along Nelson Lane north to Nicolaus Road. This area, which is within unincorporated Placer County, includes agricultural land, non-native grassland with and without vernal pools and oak woodland. A moderate quality vernal pool complex containing a high density of pools occurs just southeast of the proposed interchange. The County General Plan land use designation for this area is agriculture. The interchange and associated street improvements would facilitate access to the Lincoln Airport area and surrounding industrial uses. Development in this area would result in the possible loss of vernal pools, oak woodland and non-native grassland. A General Plan amendment would be required in order for this additional development to occur.

Nicolaus Road

An interchange is proposed at Nicolaus Road, west of Lincoln Airport. Similar to the Nelson Lane interchange, this location is within unincorporated Placer County and designated for agricultural uses. Most of this area is currently in agricultural production. Nicolaus Road is a primary east/west artery serving the Lincoln area. The Lincoln General Plan identifies improvements to Nicolaus Road to meet future traffic demands. The new interchange would create additional demand on Nicolaus Road, and possibly facilitate additional development. Additional growth in this area would primarily result in the loss of agricultural land; some vernal pools could also be impacted. A General Plan amendment would be required in order for this additional development to occur.

Wise Road

A new interchange is proposed for Wise Road, northwest of Lincoln Airport. Like the other western alignment interchanges, this location is within unincorporated Placer County and designated for agricultural uses. This area is currently agricultural land and non-native grassland; a small oak woodland occurs to the southeast of the proposed interchange. Development at this location would primarily impact non-native grassland and agricultural land. A General Plan amendment would be required in order for this additional development to occur.

Riosa Road

The interchange proposed at this location was previously described under the Eastern Alignments.

4.9.8 Recommended Mitigation Measures for Natural Resources

The mitigation measures described below are recommended in order to offset direct and indirect impacts to biological resources resulting from the proposed project. Mitigation measures are based upon agency guidelines. Mitigation ratios were based on experience with what the Federal and State agencies have required in the past and on professional experience with what replacement ratios and preservation ratios are required to re-establish levels of habitat function and values that are equivalent to or greater than pre-project levels. Oak woodland and oak tree replacement ratios are based on requirements provided in Placer Counties Oak Tree Ordinance and Senate Concurrence Resolution No. 17.

It is likely that mitigation requirements for various biological resources can be combined. For example, preservation of suitable grassland habitat containing vernal pools may provide mitigation for vernal pools and associated special status invertebrates and plants, and for Swainson's hawk (foraging habitat). Preservation and, if appropriate, enhancement of one or more large plots of land providing a variety of biological resource values (e.g., wetlands, wildlife habitat, etc.) may mitigate for a large proportion of the total project-related impacts.

An example of potential mitigation requirements for two alternative alignments (A5C1 and D13) based on impacts to key resources is presented in Table 4-30. This example is based on project alignments, rather than actual construction footprints. Consequently, final mitigation requirements may be less than indicated in the table.

Table 4-30 Potential Mitigation Requirements for A5C1 and D13

		A5C1		D 13	
Impact Category	**Basic Mitigation Requirement**	**Resources Present**	**Mitigation Required**	**Resources Present**	**Mitigation Required**
Vernal Pools & Swales	2:1 preservation & 1:1 compensation	6.6 ha *(16.1 ac)*	13 ha *(32.2 ac)* preservation & 6.5 ha *(16.1 ac)* compensation on 217 ha *(537 ac)*	2.2 ha *(5.4 ac)*	4.4 ha *(10.8 ac)* preservation & 2.1 ha *(5.4 ac)* compensation on 73 ha *(180 ac)*
Marsh Wetlands	Minimum 1:1 replacement	2.1 ha *(5.4 ac)*	2.1 ha *(5.4 ac)*	2.8 ha *(6.8 ac)*	2.8 ha *(6.8 ac)*
Mixed Riparian Forest	3:1 replacement or enhancement of degraded habitat	2.3 ha *(5.4 ac)*	6.6 ha *(16.2 ac)* of new or enhanced habitat	1.3 ha *(3.3 ac)*	4.9 ha *(12.0 ac)* of new or enhance habitat
Mixed Oak Woodland	2:1 habitat preservation based on acreage impacted	5.8 ha *(14.3 ac)*	11.6 ha *(28.6 ac)* preservation of oak woodland	3.5 ha *(8.6 ac)*	6.8 ha *(16.8 ac)* preservation of oak woodland
Oak Trees	Tree planting at 1 sampling per 1" dbh impact	263 trees 68.58 m (2,700")	2,700 sapling oaks @ 60/ac on 18.2 ha *(45 ac)*	205 trees 43.18 m (1,700")	1,700 sapling oaks @ 60/ac on 10.5 ha *(28 ac)*
Grasslands /Ag land	1:1 preservation	149 ha *(369 ac)*	149 ha *(369 ac)* preservation	179 ha *(442.4 ac)*	179 ha *(442 ac)* preservation
Summary		**244.3 ha *(603.6 ac)* mitigation**		**197.4 ha *(487.9 ac)* mitigation**	

Mitigation for Natural Communities

1. To the maximum extent feasible, the final project alignment shall be routed to avoid or minimize impacts to high quality natural communities including oak woodland, riparian forest and grasslands with high concentrations of vernal pools.

2. Crossings of Auburn Ravine, Markham Ravine and Coon Creek shall be located where riparian resources are least extensive; crossings shall be aligned perpendicular to the riparian corridor to minimize the crossing impact.

3. Unavoidable impacts to riparian forest habitat shall be mitigated through restoration or enhancement (including expansion) of existing degraded riparian habitat at a ratio of 1.2 ha (3 ac) restoration or enhancement for every 0.4 ha (1 ac) impacted. Riparian forest mitigation areas shall be protected in perpetuity through conservation easements, deed restrictions or other equivalent measures.

4. Unavoidable impacts to oak woodland habitats shall be mitigated through preservation of 1.2 ha (3.0 ac) of existing oak woodland for every 0.4 ha (1 ac) of impact. In addition, impacts to individual oak trees shall be mitigated by planting one sapling tree or equivalent (direct seeding of acorns may also be acceptable) for every one inch of tree

diameter at breast height impacted. Oak mitigation areas shall be protected in perpetuity through conservation easement, deed restriction or other equivalent measures.

5. Prior to construction during the spring breeding season, a qualified biologist shall conduct pre-construction surveys of impact areas to check for nesting birds. If nesting activity is detected, construction activities shall avoid nest sites until the biologist determines that the young have fledged or nesting activity has ceased.

6. All significant drainage shall be passed through the roadway prism via bridge or culvert. Culverts shall be straight (without bends) to facilitate wildlife movements.

7. All significant habitats located outside of construction areas shall be designated as Environmentally Sensitive Areas (ESA) and so designated on construction plans and specifications. No encroachment into ESA shall be allowed.

Mitigation for Special Status Species

1. Once an alignment for the SR 65 Lincoln Bypass project is selected, focused surveys for special status species shall be conducted within the project impact area at the appropriate time of year. Surveys shall include 100 percent coverage of habitats likely to support special status species. Where appropriate, prescribed survey protocols shall be followed. The following species/species groups shall be emphasized:

- Bats
- Nesting birds
- Reptiles and amphibians
- Vernal pool plants

2. If special status species are located within the project impact area, appropriate mitigation measures shall be developed in coordination with the resource agencies and implemented to offset project effects. The mitigation measures shall be specific to the species affected. Where applicable, previously developed agency mitigation guidelines shall be followed.

3. A mitigation plan for project impacts to the Swainson's hawk shall be developed in accordance with CDFG guidelines. These guidelines stipulate 1) avoidance of disturbance adjacent to active nests during the breeding season and 2) provision of Habitat Management lands to compensate for loss of foraging habitat.

4. Mitigation for special status vernal pool invertebrates (fairy shrimp and tadpole shrimp) and for special status vernal pool plants (Ahart's dwarf rush, Bogg's Lake hedge hyssop, dwarf downingia and legenere) shall be accomplished through implementation of a comprehensive vernal pool mitigation plan. The mitigation plan shall offset impacts to vernal pools, and associated invertebrates and plants, through 2:1 preservation of existing, equivalent vernal pools and 1:1 creation of new vernal pools in an appropriate

setting to be selected in coordination with the resource agencies. Some or all of this mitigation may be accomplished through purchase of credits from approved mitigation banks or purchase and dedication of an appropriate mitigation bank site to be approved by the resource agencies.

5. Once an alignment for the SR 65 Lincoln Bypass project is selected, a qualified biologist shall survey the selected alignment for elderberry plants that potentially provide habitat for the Valley elderberry longhorn beetle (VELB). If suitable habitat is found, a mitigation plan shall be developed and implemented. Mitigation for VELB shall be accomplished in accordance with *Mitigation Guidelines for the Valley Elderberry Longhorn Beetle* provided by the FWS (July 9, 1999). These guidelines specify that elderberry plants shall be avoided whenever possible. If avoidance is not possible, elderberry shrubs shall be transplanted. In addition, each elderberry stem greater than 2.54 cm (1") diameter at ground level that is impacted (either by removal or transplanting) must be replaced with seedlings or cuttings at a ratio ranging from 2:1 to 5:1. Long-term maintenance and monitoring are also required.

Mitigation for Wetlands & Jurisdictional Waters

1. Once an alignment for the Lincoln Bypass project is selected, a qualified delineator shall perform a final delineation of all wetlands and non-wetland waters within the project impact area. The final delineation shall be submitted to the ACOE and/or Natural Resource Conservation Service for verification.

2. Impacts to wetlands and non-wetland waters shall be mitigated in accordance with the final ACOE Sacramento District Habitat Mitigation and Monitoring Proposal (HMMP) Guidelines. Appropriate mitigation ratios shall be established to ensure no net loss of wetland acreage or value. The HMMP shall address, at minimum, the following:

- *Project Description:* location and summary of project; jurisdictional areas to be filled; types, functions and values of impacted jurisdictional areas;
- *Goal of Mitigation:* type, functions and values of habitats to be created or enhanced; temporal losses; estimated costs;
- *Proposed Mitigation Sites:* location, size and ownership of mitigation areas; existing functions, values and jurisdictional waters; present and proposed uses and zoning;
- *Implementation Plan:* rationale for expecting success, responsibilities; schedule; site preparation; planting plan, irrigation plan; as-built plans;
- *Maintenance*: activities; schedule; responsible parties;
- *Monitoring Plan:* success and performance criteria; jurisdictional waters to be created/enhanced; monitoring methods; reports and schedule;
- *Completion of Mitigation*: agency notification and confirmation; and
- *Contingency Measures*: initiation, locations and funding.

4.9.9 Compensatory Mitigation Plan

Several potential mitigation sites have been considered and conceptually evaluated. They range from mitigation banks to participating in the Placer Legacy Project and are summarized below. These options will be explored more fully once the final mitigation requirements have been determined. A final mitigation plan will be adopted before the Final Environmental Impact Report/Statement is distributed.

The Placer Legacy Project is sponsored by Placer County and is dedicated to protecting open space in Placer County. To further this goal, Placer Legacy pursued an option to buy the Moore Ranch, located adjacent to Moore Rd. northwest of Lincoln. The Department offered to provide partial funding for the acquisition of Moore Ranch as mitigation for impacts related to the Lincoln Bypass project. The Department did a cursory evaluation of the habitat available on this site and found it suitable for mitigation. Since that time, a developer has exercised their option to buy the property and it is no longer available. However, Placer Legacy has numerous habitat restoration projects proposed in the project vicinity. Discussion with Placer Legacy about financial participation in these other efforts could be another way to achieve mitigation goals.

Mitigation banking is another option being explored by the Department. The Wildlands, Inc. Wetlands Mitigation Bank, northeast of Lincoln, has all of the habitats needed to compensate for project impacts. Discussions with Wildlands, Inc. have taken place to evaluate the feasibility of this option. Wildlands, Inc. is also looking into re-establishing a variety of habitats on an 128 ha (317 ac) parcel called Aitkens Ranch, located southwest of the project. The possibility of the Department's financial participation is being considered.

The opportunity to mitigate for seasonal and perennial wetlands and riparian habitat exists at Beach Lake, a mitigation bank created by the Department's along the banks of the Sacramento River, near the town of Freeport and adjacent to the Stone Lakes National Wildlife Refuge.

Portions of property acquired for the project may not be used for the project, yet are also unusable to the property owner. These parcels are known as "Excess Land." There are several parcels of possible excess land associated with this project which have been identified as potential mitigation opportunities.

4.10 CULTURAL RESOURCES

A cultural resources inventory resulted in the identification of fifteen archaeological resources and the evaluation of eight pre-1946 architectural resources. The Historic Architectural Survey Report (HASR) and the supplemental HASR (completed in 1989

and 1990) evaluated a total of eight properties, two of which were determined to be potentially eligible for listing in the NRHP: the Fickewirth Ranch and the Sheridan Cash Store (a.k.a. Country Store). Two additional properties in the vicinity of the project have been listed on the National Register since 1990; the Lincoln Public Library at 590 Fifth Street (listed 12/10/90) and the Women's Club of Lincoln at 499 E Street (listed 5/30/01). Both of these buildings are within the town of Lincoln and not directly affected by the project.

In the Supplemental HASR (dated August 1990), 39 properties were treated in accordance with the December 20, 1989 "Memorandum of Understanding Regarding Evaluation of Post-1945 Buildings, Moved Pre-1945 Buildings, and Altered Pre-1945 Buildings." Of the 39 properties, 21 do not predate 1957 and thus require no further study. The remaining eighteen properties predate 1957 and need to be formally evaluated. The application of "Caltrans Interim Policy for the Treatment of Buildings Constructed in 1957 or Later" will be documented in a statement of findings in the Supplemental HASR that will update the August 1990 Supplemental HASR

Four of the archaeological finds were adjacent to, but outside of, the Project Study Area and were not considered further. Eight of the remaining eleven archaeological resources were recorded as isolated finds or features and three were recorded as archaeological sites. Two of these three sites are considered potentially eligible for inclusion in the National Register of Historic Places (NRHP) until they have been evaluated for significance.

These two sites are potentially affected by the AAC2 alignment. The alignment passes through one of the sites and is in close proximity to the other. If the AAC2 alternative is selected, the first site will be tested for significance and eligibility for listing in the NRHP. An assessment of the impacts on this site cannot be made until the deposit has been evaluated.

Preliminary plans indicate that the third site will not be directly impacted by the proposed construction. As a result, the site will be designated as an environmentally sensitive area (ESA) to ensure its protection. If design plans are modified such that the site is impacted, it will be tested for significance for listing in the NRHP, and an assessment of the effects would be made at that time.

Two of the eight architectural resources were determined eligible for the NRHP by consensus of the State Historic Preservation Officer (SHPO) on October 21, 1991; the Fickewirth Ranch and the Sheridan Cash Store. Copies of the correspondence with SHPO can be found in Chapter 7, Comments and Coordination.

The Sheridan Cash Store is adjacent to A5C1, AAC2 and D1 and D13, but will not be affected by any of these alternatives. The storefront sits approximately 24 m (80 ft) from the pavement edge of SR 65. This distance will not change if the highway is relinquished to the county, nor will additional right-of-way be required for any potential road improvements near the store. Traffic and its attendant noise are likely to decrease if any of the longer build alternatives are selected.

The eligibility of the Sheridan Cash Store under Criterion A is based on its association with Sheridan's economic development and for embodying the characteristics of its time, period or method of construction. The brick false-front store was designated a Point of Historical Interest by the California Historic Resource Commission on August 3, 1990,by virtue of being the only remaining commercial brick building in Sheridan. No new elements will be introduced into the setting; thus none of the proposed alignments will alter the characteristics of the property that qualify it for the NRHP.

The Fickewirth Ranch is located at 2780 Dowd Road, approximately 4.8 km (3.0 mi) south of the town of Sheridan. The property consists of a residence, a tank house, a windmill, a long shed (originally a chicken house), a timber-framed hay barn, a one-time blacksmith shop and several smaller miscellaneous sheds. The residence and most of the outbuildings were constructed in 1901. The house was originally built as a one-story Queen Anne cottage; a second story was added about 1912. The buildings on the property have been maintained in their original form with little or no modification. Materials used to maintain the property were of the same kind as the original, thereby serving to preserve the original character and integrity of the farm complex. The house is one of the earliest intact residences remaining in the local area.

Mr. and Mrs. Fickewirth currently own the ranch. The property is approximately 1524 m by 762 m (5000 ft by 2500 ft).

The Fickewirth Ranch has been determined eligible for the NRHP at the local level under Criterion C as an embodiment of its time, period, and method of construction. All of the structures on the property, in their form and function, contribute to this determination. Furthermore, the property remains in its rural setting.

Alternatives D1 and D13 and A5C1 require a portion of the Fickewirth Ranch. The Department's and the FHWA, in applying the Criteria of Effect and Adverse Effect (36 CFR 800.9) have concluded that a "Finding of No Effect" is appropriate for each of the three alignments going through this property, and have obtained SHPO's concurrence on this determination. SHPO concurred with this determination on January 30, 1995. Copies of this correspondence can be found in Chapter 7, Comments & Coordination.

4.10.1 Application of the Criteria of Effect on the Fickewirth Ranch

Alternatives A5C1, D1 and D13 pass through the 104 ha (258 ac) agricultural parcel containing the Fickewirth Ranch. The proposed alignment for Alternative A5C1 lies approximately 457 m (1500 ft) from the ranch complex, while Alternative D1 and D13 are about 610 m (2000 ft) from the buildings. The elevation drops approximately 1.5 m (5 ft) between the building complex and each of the alignments. The proposed highway for these two alternatives will not be seen from the building complex, although vehicles on the highway will be visible. A similar condition would exist for the A5C1 alternative. Furthermore, the view of the alignments would largely be blocked from the Fickewirth residence by the surrounding outbuildings.

Projected traffic counts on this section of the proposed freeway are anticipated to be relatively low. A noise level projection model found that any increase in sound would be well below the criteria level of a significant noise impact as the minimum distance of 183 m (600 ft) from the ranch complex. The proposed alternatives are all at a much greater distance; thus the increase in noise from the new highway will be negligible. Furthermore, because it is located immediately adjacent to Dowd Road, traffic and its attendant impacts have always been a factor in the setting of the ranch complex. The addition the proposed freeway at a distance of 457 to 610 m (1500-2000 ft) will not create elements that did not previously exist.

The eligibility of the Fickewirth Ranch is based on the type and period of the building complex. As no new elements would be introduced into the setting of the property, none of the alignments would alter any characteristic of the property that qualifies it for the National Register of Historic Places. Thus, the proposed project will have no effect on the Fickewirth Ranch.

4.10.2 Mitigation Measures

The proposed project will have no effect on the two National Register eligible properties; thus no mitigation measures are proposed.

If the AAC2 alignment is chosen, the archeological sites within that alignment will be evaluated for inclusion in the NRHP and mitigation will be proposed at that time.

4.11 HAZARDOUS WASTE

The parcels listed in Table 4-31 were determined to warrant further investigation if they are adjacent to the alternative that is ultimately chosen.

Figure 4-8 shows the location of these parcels.

Table 4-31 Parcels Possibly Requiring Further Investigation

No.	Assessors Parcel Number	Problem
1	021-380-001& 002	Surface staining under some above-ground storage tanks.
2	021-380-056	Surface staining under a waste oil container.
3	021-150-076	Potential leaking underground storage tank.
4	020-150-31	Listed on the SPL[1] list.
5, 6, 7, 8, 9	021-262-11, 019-320-002,021-262-004, 021-033-007,21-035-007	Underground storage tanks located on parcels.
10, 3	021-02-005, 21-02-025	Abandoned farm equipment and vehicles covered the soil. Removal of equipment may reveal impacts that were not clearly visible during initial investigation.
12	021-262-012	Municipal Sewer Treatment Plant.
13, 14, 15	019-29-010, 019-29-019, 020-150-030	Storage and use of hazardous materials such as pesticides and fuel.
16	021-056-016	Collection of discarded batteries.
17	Adjacent to 021-002-08	Questionable disposal practices by WECO Aerospace and Infinity Aviation.

[1] The State Priority List (SPL) is the state equivalent of the Federal Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS list.)

In addition; any buildings that are to be acquired will be evaluated for the presence of asbestos. Due to the agricultural nature of the area, many of the parcels contain above ground storage tanks, which will be investigated. In addition, many of the residences are equipped with septic systems. Unknown conditions relating to the septic systems may exist.

Due to the former use of waste oil (potentially containing PCB) to control dust in railroad right-of-ways, the railroad areas within the alignment could contain PCB affected soil. Work in the Railroad right-of-way could generate hazardous waste, and will be handled accordingly.

The Department's Chapter 18 "Hazardous Waste" Article 1-Policies (PDPM) states that "if a contaminated site is encountered and avoidance is not possible, the Department should make every effort to have the owner and /or responsible party investigate and cleanup the contamination prior to acquisition. In addition, Chapter 18 "Cleanup Time Table" states; "Regardless of who is responsible for performing the cleanup, such cleanup should be completed prior to PS&E submittal for advertising."

Figure 4-8 Potential Hazardous Waste Locations

4.11.1 Mitigation Recommendations

It is recommended that soil sampling be conducted on a site specific basis after a preferred alignment has been chosen. In addition, comprehensive asbestos and lead-based paint inspections that meet the requirements of current EPA and OSHA regulations are recommended prior to any demolition activities associated with structures in the proposed alignment corridor. Any component that is planned to be impacted by demolition activities should be characterized to ensure proper handling and disposal.

4.12 VISUAL RESOURCE IMPACTS

Visual character within the Study Area is changing due to planned growth as indicated in the Lincoln General Plan, Land Use Map (refer to Chapter 3 Affected Environment; Social, Economic and Land Use Section). Eventually, as more land becomes developed in this corridor, the rural visual quality will slowly transform into urban build-out. Development diminishes visual quality and character due to soundwalls and structures built adjacent to the right-of-way.

The D 13 modifications are expected to be similar to the other D alternatives. All six alignments begin in the same general location, approximately 1.6 km (1 mi) south of the City of Lincoln. The alignments then cross over the UPTC railroad tracks and pass through west Lincoln where development is occurring. A park and ride site is planned slightly north of the overhead between the UPTC railroad tracks and existing SR 65. The large overhead (also known as an overpass) will provide expansive panoramic views from the roadway. Views from the overhead will provide a variety of visual elements, such as the City of Lincoln, pastureland, creek corridors, oak woodland, the Sierra Nevada, Sutter Buttes and Coast Range.

This overhead could provide areas for planting on its soil-covered slopes. Once plantings mature, trees will provide an important visual vertical element. Once development and build-out occurs, this overhead may become the gateway to the City of Lincoln. It is very important to have an aesthetically pleasing, architecturally interesting structure since the overhead will dominate over surrounding uses, becoming a prominent visual feature.

All of the alignments, except for D1, break up a small cluster of rural home sites at the bend in Moore Road. This disrupts the unity and harmony of such enclaves and may lead to viewer confusion. It may be necessary to screen residences from the proposed highway. Screening methods include dense plantings for screening and barriers, possible soundwalls for noise attenuation and/or fencing with wood slats. A landscape architect could suggest the most feasible and appropriate screening method.

In and around Moore Road and Auburn Ravine is predominantly oak woodland. All the alignments run through this fading piece of California heritage land, causing the removal of prime oak habitat. California white oaks, also known as valley oaks, are the predominant species. Mitigation for these heritage oak trees is of prime importance.

All of the alignments traverse Auburn Ravine. The bridge crossing Auburn Ravine should be integrated into existing landforms with a simple, clean and aesthetically pleasing design. If the channel needs to be relocated, its banks should be replanted with native species and restored to its existing conditions. This creek corridor provides a prime location for oak plantings.

The AC corridor

The **AAC2** and **A5C1** pull away from SR 65 approximately 322 km (200 ft) farther northward causing a wider bend to the west. After crossing Ingram Slough, these alignments remove part of the Aitken Ranch Turkey Farm, causing the removal of three buildings and also divide the rural home sites on Moore Road.

The AAC2 and A5C1 alignments continues northwest, requiring a second railroad overhead before tying into existing SR 65. This overhead is very similar to the first overhead where the Lincoln Bypass pulls away from existing SR 65. However, northbound views now show the rural nature of the foothills, the Sierra Nevada, Sutter Buttes, Coon Creek and nearby agriculture along with the rural community of Sheridan. Just before the Lincoln Bypass ends, the four-lane expressway narrows down into a two-lane highway and ties into existing SR 65. The Joiner Ranch Project Area to the east of the AC corridor, is rapidly developing.

Figure 4-9 illustrates the typical height, size, color and location of a soundwall which may occur along the Lincoln Bypass. From this key view, the height of the soundwall will obliterate most views of existing oaks in the background. However, through appropriate mitigation, oak tree replacement may occur adjacent to freeway soundwalls. This simulation shows mature oak trees. However, one must also remember that in the future, this area will be completely developed to the soundwall.

The **A5C1 and AAC2** alignments begin approximately one-half mile north of Nicolaus Road with a wide gradual northwest curve. Both alignments follow the same route for approximately two miles before breaking apart south of Coon Creek, passing through vernal pools for approximately 4.8 km (3 mi) between Nicolaus and Dowd Roads.

Alignment **AAC2** connects into the AA alignment north of the Nicolaus Road interchange and Markham Ravine, near the powerlines on the Foskett property, following the same route as A5C1 until the Nader Ranch. After the Nader Ranch, AAC2 curves

northward in a wide, gradual curve and crosses Coon Creek approximately 243 m (800 ft) upstream from the A5C1 alignment. By going between oak clusters, this alignment promotes more of the feeling of crossing from one area and entering another area.

After crossing Coon Creek, **A5C1** curves widely through agricultural lands, with an overcrossing at Dowd Road. Rural ranches and meandering creek corridors are visible to the east while traveling through the relatively flat terrain. Two bridges are needed for Yankee slough and Dalby Road will be realigned. A5C1 gradually rises into the unique mile-wide foothill that was described in Chapter 3. An interchange is planned for Riosa Road.

The D corridor

The **D1 and D13** alignments veer west of the Lincoln Municipal Airport. Both D1 and D13 present negative views for residents of the rural subdivision on Rockwell Lane. These residents now have panoramic rural views of Markham Ravine and agricultural areas to the south. Once the bypass is built, head and taillights will be the most dominant visual intrusion to the south.

After curving to the northwest, crossing Ingram Slough and cutting through the corner of Aitken Farms, the **D13** alignment breaks up the small rural cluster of home sites at the bend in Moore Road. After crossing Auburn Ravine, it then curves gradually to the west. This section of the proposed alignment provides exceptional views of sunrises and sunsets.

The Nelson Road interchange provides changes in topography while also allowing oak restoration areas. D13 parallels the rural Rockwell Lane subdivision. The closest structures within this rural subdivision are a minimum of 457 m (1500 ft) away from the D13 alignment. Even though this rural subdivision diminishes the integrity of the natural visual setting, it provides a middle ground focal point. This 457 m (1500 ft) distance retains the visual quality of this rural subdivision, both from the residents' viewpoint and for users of the Lincoln Bypass.

Alignment D13 then widely curves to the north, crossing Markham Ravine. The bridge should be simple; complimenting existing landscapes through color, size, form, texture and an aesthetically pleasing architectural design as previously discussed. In addition, a small triangular portion of land adjacent to the creek crossing could be used for oak mitigation. Additional plantings along the creek corridor could provide areas for oak replacement while also augmenting receding oak populations. This wide curving alignment straightens out near Nicolaus Road where a future overcrossing is planned. D13 then continues northward through agricultural areas until it combines with the D1 alignment.

Figure 4-9 Visual Simulation

The major difference between the D alignments is that D1 is slightly further northward, disrupting the rural Rockwell Lane subdivision. Two home sites would be demolished and other homes may be as close as 30.5 to 76 m (100 to 250 ft) away from the proposed alignment.

The pooling, tributary area of Markham Ravine on the south side of the proposed D1 alignment allows attractive views for Lincoln Bypass travelers during the wet months. In addition, this alignment cuts through the southern tip of a long eucalyptus wind break, adding an immediate vertical visual element directly adjacent to the right-of-way.

D1 has the same overall visual qualities of D13 except for the area near Auburn Ravine. The rural neighborhood at the bend in Moore Road is now entirely on the north side of the proposed route. Visually and socially, it is wise to not break up this neighborhood. By leaving the enclave of homes intact, the foreground views of rustic home sites tucked inside an oak woodland provides visual integrity and promotes the rural quality of this region. Once development occurs, the rural home sites may disappear, leaving mixed-use development. D1 joins with D13 just past Nicolaus Road.

All of the longer alignments **(A5C1, AAC2, D1 and D13**) generally cross the same area from Wise Road on to where they join with existing SR 65. These alignments either cross over or weave through small hills north of Coon Creek. These low-lying foothills exaggerate the feeling of traveling and passing through an area due to their vertical relief upon otherwise horizontal fields. The alignments cross extensive vernal pools, agriculture and non-native grasslands for over 2.4 km (1.5 mi) before arriving at the unique, mile-wide rolling foothill between Dalby and Riosa Rds.

Even though these alignments tie into existing SR 65 at different locations before reaching the Bear River, they are within 457 m (1,500 ft) of each other. The D1 and D13 alignments go through existing fruit and nut orchards whereas A5C1 and AAC2 do not. Disturbing the existing orchards and their geometric plant spacing will cause the visual quality and character to be altered. However, orchards normally create interesting, geometric views from the roadway.

4.12.1 Mitigation

Mitigation encompasses the enhancement of positive effects as well as the reduction or elimination of negative effects. The mitigation goal for Lincoln Bypass is to restore the indigenous appearance to areas affected by construction and to form the highway so it blends into adjacent terrain. In achieving this goal, the highway should appear to be a part of the natural landscape. The most effective mitigation is to design the project with as little disturbance to the land as possible.

Oak Regulations

The California Senate passed a resolution effective September 1, 1990 protecting heritage oak stands. State agencies shall “assess and determine the effects of their land use decisions or actions within any oak woodlands.” State agencies should "preserve and protect native oak woodlands to the maximum extent feasible... or provide for replacement plantings" according to SCR17. There are eight stands of oaks meeting the criteria as heritage trees within the Study Area. In addition, Placer County adopted a tree preservation ordinance in October of 1991. This ordinance was established to preserve and protect the remaining native oak and other species of trees within Placer County. Within the project area, landmark trees and trees within a riparian zone provide the majority of trees affected by this ordinance.

Oak Removal

Tree removal should be kept to a minimum. Because of the loss in change of spatial enclosure and the number of heritage oak stands, it is particularly important to leave existing trees as close to the highway as safety will allow. Prior to clearing operations, trees needing to be removed should be individually marked for cutting and all other trees should be protected from damage.

Determination of the final alignment is not an easy task due to many constraints, some of which include oak preservation, wetland habitats, potential endangered species and scenic quality considerations. All proposed alignments remove portions of existing mature oak woodlands. The total diameter at breast height (dbh) varies between the alignments but D1 has the least oaks being removed and AAC2 has the most oaks being removed. Below is an approximation of total oak removal for each alignment:

D1 alignment	17.8 m (700") of oaks to be removed
D13 alignment	43.2 m (1,700") of oaks to be removed
A5C1 alignment	68.6 m (2,700") of oaks to be removed
AAC2 alignment	85.1 m (3,350") of oaks to be removed

Oak Replacement

Mitigation of oak woodland habitat will be necessary for the Lincoln Bypass. It is best to locate replacement trees in areas where existing oaks have been removed. Creek corridors also provide an exceptional location to augment existing oak woodlands with additional replacement oaks. In addition, wider right-of-ways allow naturalistic arrangement of replacement oaks while also enhancing visual quality and character. Landscape architects can provide re-vegetation plans, which will further enhance the Lincoln Bypass. More information on oak woodland replacement can be found in Section 4.9.8.

Vegetation Preservation

The natural vegetative layers of tree canopy, understory vegetation of small trees and shrubs, groundcovers, native grasses and natural mulches should be reestablished.

4.12.2 Erosion Control

Potential damage from erosion and runoff can be severe. Sedimentation barriers such as simple hay bales or soil filter fabrics attached to fences (silt fences) can help prevent erosion. To establish effective re-vegetation on slopes, topsoil can be collected from the project site prior to construction, stockpiled, and later applied to the completed slopes. Erosion control plans can be custom-tailored to specific sites by a landscape architect. Erosion control is discussed in depth in the Water Quality Section of this chapter.

If re-vegetation is not accomplished, roadside scars will become prominent on cut and fill slopes. The magnitude of these visual impacts depend upon how the slopes are treated. All slope treatments should blend with existing features, simulating natural forms. This consists of rounding the top and edges of the cuts and fills to present a softer transition line between constructed and existing slopes. Particularly where a significant tree or group of trees can be saved, slopes could be cut steeper to preserve them. In addition, slopes should be designed to be flat enough to readily re-vegetate them. A 4:1 slope is recommended. This means that for every four feet of horizontal length the slope will rise vertically one foot.

Contour grading may increase the overall size and length of graded areas, requiring adequate right-of-way to be wider than the 70 m (230 ft) as proposed. The unique, mile-wide foothill near Dalby and Riosa Roads is a prime example where contour grading principles should be employed along with establishing wider right-of-way, smoothing the natural to standard transition edge along the roadway.

Bridges and Other Structures

Special attention should be given to structures since they have a strong impact on the visual quality of a highway. All structures should be aesthetically pleasing when viewed from the road and other viewpoints. Landforms should blend into bridge abutments to maintain visual continuity for the motorist. Structures should complement the natural landscape in color and not dominate existing landforms.

Soundwalls

Soundwalls are an important element in highway design where homes and other noise-sensitive properties are close to the right-of-way. The compatibility between highways and residential areas is significantly improved by the provision of attractively designed soundwalls. Planting is effective in complementing and softening the

appearance of soundwalls. Visual impacts must be considered once final locations of soundwalls are determined.

4.13 CUMULATIVE IMPACTS

Evidence is increasing that the most disturbing environmental effects may result not from the direct effects of individual projects, but from the cumulative effects of individually minor projects over time. The Council on Environmental Quality (CEQ) guidance define cumulative effects as "the impact on the environment which results from the incremental impact of the action when added to other past, present and reasonable foreseeable future actions, regardless of what agency or person undertakes such other actions" (40 CFR § 1508.7). Environmental cumulative effects accumulate when the environment does not have enough time to recover to its original condition before another outside action takes place to affect the environment.

Cumulative effects analysis necessarily involves uncertainties and assumptions, but useful information can be presented now to facilitate better decision making. This section will investigate the cumulative effects of this and other projects in the Lincoln area.

Identifying the major cumulative effects involves defining the direct and indirect effects of the proposed action and other projects in the area, which resources, ecosystems and human communities are affected and which effects on these resources are important from a cumulative effects perspective. The resources primarily affected by this project are air quality, wildlife habitat and wetlands and agricultural land. These resources are described in detail in the "Affected Environment" chapter, so this chapter will focus just on the cumulative effects to these resources.

The geographic scope of cumulative impacts varies by technical area; for example the scope of cumulative impacts for water quality would be the Sacramento River watershed, for air quality; the Sacramento Valley Air Basin. The evaluation area for biological resources includes the Central Sacramento Valley, but also includes portions of the lower Sierra foothills on the east and bottomlands to the west. Natural communities within the cumulative impacts evaluation area are similar to those occurring within the project Study Area.

Temporally, the scope of this cumulative impact chapter is the existing condition and all reasonably foreseeable projects in the future, both development activities and transportation projects.

When considered with other reasonably foreseeable projects, such as described in Table 1-9 in Chapter 1, cumulative impacts to some resources will be more severe than impacts caused by the highway project alone. The EIR for the Placer County General

Plan Update concluded that development in eight major areas[3], taken as a whole, will result in potentially significant adverse impacts to land conversion and habitat quality reduction, and cause an increase in air pollutant emissions and traffic noise.

4.13.1 Socioeconomic Impacts / Farmland Impacts

Growth within the Cumulative Impacts Study Area (CISA) is expected to continue to be concentrated, for the most part, around existing developed communities. (See Figure 4-10) Based on the planning documents reviewed, it appears that the areas closest to Lincoln will exhibit the most growth in the foreseeable future.

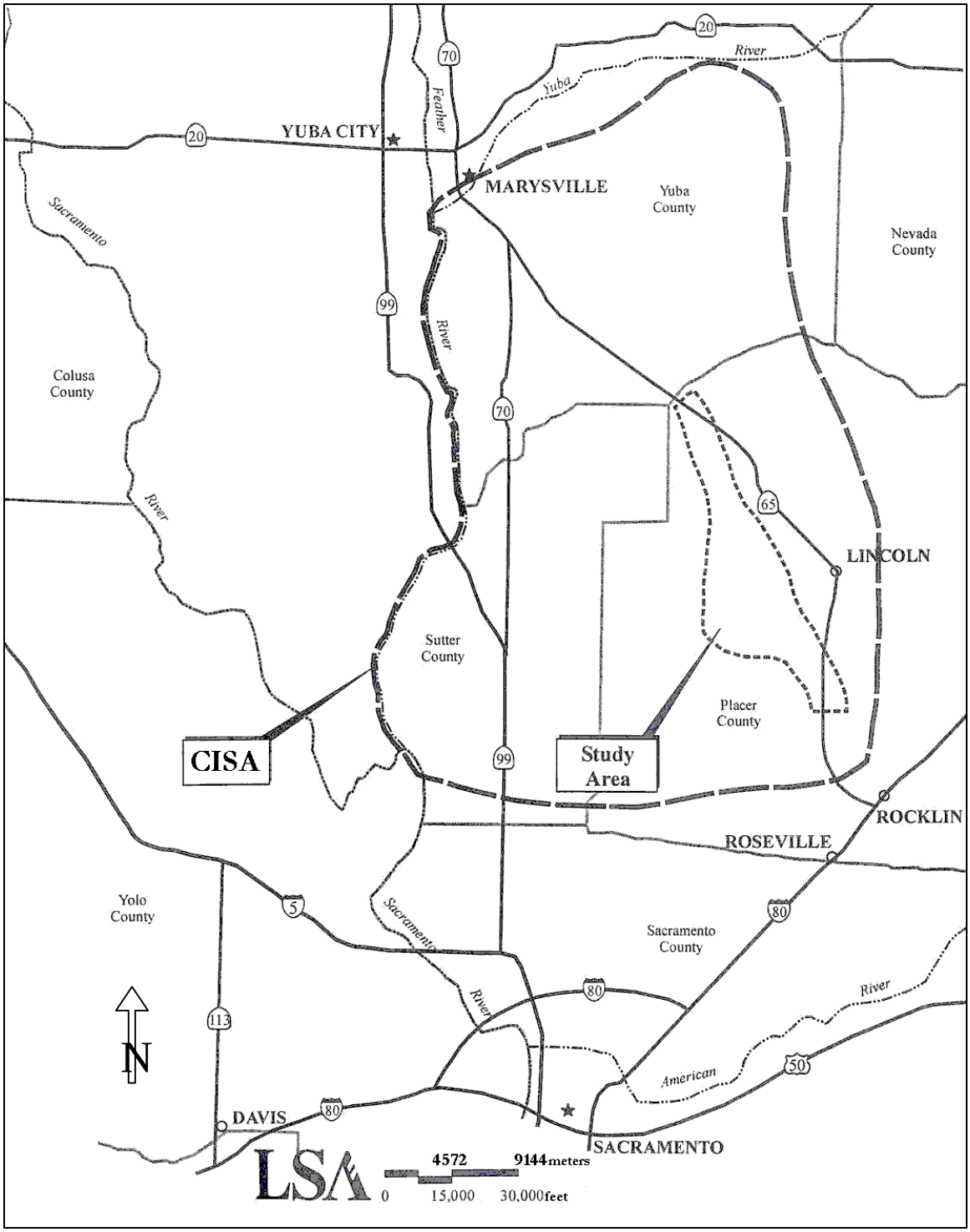
Preservation of agricultural lands is one of the primary planning goals within the CISA, as emphasized by City and County planning policies. It appears that, at least for the foreseeable future, agricultural uses will continue to dominate. However, loss of farmland continues as housing tracts replace small farms. Table 4-32 illustrates the loss of farmland in Placer County.

Table 4-32 Loss of Farmland in Placer County

	Total Acreage Inventoried		**1994-1996 Acreage Changes**			
Land Use Category	**1994**	**1996**	**Acres Lost**	**Acres Gained**	**Total Acreage Changed**	**Net Acreage Changed**
Prime Farmland	4232 ha *10,458 ac*	3993 ha *9,867 ac*	255 ha *630 ac*	16 ha *39 ac*	271 ha *669 ac*	-239 ha *-591 ac*
Farmland of Statewide importance	2269 ha *5,608 ac*	2244 ha *5,546 ac*	71 ha *176 ac*	6 ha *14 ac*	117 ha *290 ac*	-25 ha *-62 ac*
Unique Farmland	9651 ha *23,848 ac*	931 ha *2,300 ac*	415 ha 1,025 ac	193 ha 477 ac	608 ha *1,502 ac*	-222 ha *-548 ac*
Farmland of Local Importance	45 934 ha *113,505 ac*	46 244 ha *114,271 ac*	253 ha *624 ac*	563 ha *1,390 ac*	815 ha *2,014 ac*	310 ha *766 ac*
Important Farmland subtotal	**62 086 ha** ***153,419 ac***	**53 412** ***131,983 ac***	**994 ha** ***2,455 ac***	**817 ha** ***2,020 ac***	**1811 ha** ***4,475 ac***	**-176 ha** ***-435 ac***
Grazing Land	14 509 ha *35,853 ac*	13 632 ha *33,686 ac*	877 ha *2,167 ac*	0	877 ha *2,167 ac*	-877 ha *-2,167 ac*
Agricultural Land Total	**76 595 ha** ***189,272 ac***	**67 044 ha** ***165,668 ac***	**1 871 ha** ***4,622 ac***	**817 ha** ***2,020 ac***	**2 688 ha** ***6,642 ac***	**-1 053 ha** ***-2,602 ac***
Urban and built-up land	13 178 ha *32,563 ac*	14 162 ha *34,994 ac*	0	984 ha *2,431 ac*	984 ha *2,431 ac*	984 ha *2,431 ac*
Other Land	74 696 ha *184,577 ac*	74 766 ha *184,748 ac*	147 ha *364 ac*	217 ha *535 ac*	364 ha *899 ac*	69 ha *171 ac*
Water Area	2071 ha *5,118 ac*	2071 ha *5,118 ac*	0	0	0	0
Total Area Inventoried	**166 540 ha** ***411,525 ac***	**158 043 ha** ***390,529 ac***	**2 018 ha** ***4,986 ac***	**2796 ha** ***6908 ac***	**4036 ha** ***9,972 ac***	**0**

[3] These 8 areas include: land use, traffic congestion, cultural resources, loss of farmland, loss of agricultural production, habitat conversion and habitat qualtity reduction, increase in air pollutant emissions and traffic noise (Placer County Planing Dept., 1994).

Figure 4-10 Cumulative Impacts Study Area



A number of highway improvement projects are proposed within the CISA to address existing congestion and safety concerns and provide for the inter-regional transportation needs. While possibly facilitating development in some areas, it is not expected that the proposed highway improvements will result in accelerated conversion of agricultural and other open space lands to developed uses except where this conversion is already occurring (e.g., Lincoln). Rather, the proposed road improvements are needed to keep pace with developing conditions and prevent further deterioration in level of service. These projects are described in Chapter 1, "Other Transportation Projects in the Area." Briefly, they are:

Table 4-33 Transportation Projects in the Lincoln Area

Project	County	Year Constructed
SR 65 Improvement from Roseville to Industrial Blvd.	Placer	1997
Blue Oaks Interchange	Placer	1998
SR 193 improvements.	Placer	1999
Future Improvements to the State Highway System include:		**Year Proposed**
Wheatland Bypass	Sutter/Yuba	2006
SR 70, McGowen to Striplin widening	Sutter/Yuba	2005
SR 99 Improvements	Sutter	2003
Third River Crossing	Yuba	2004
Marysville Bypass	Yuba	2005
Placer Parkway*	Placer	Not determined

*Not part of the State Highway System.

Environmental documentation either has been or is being prepared for all of these highway projects. The highway improvement projects are consistent with their respective County General Plans. These projects are in response to the growing population and the subsequent development of previously undeveloped areas in southern Sacramento Valley. A detailed discussion of the socioeconomic pressures this region is experiencing can be found in Chapter 1. To summarize Table 1-12; eleven residential development projects have been approved within the Lincoln sphere of influence. These projects encompass over 3000 ha (7,410 ac) and will involve the building of over 15,453 new homes.

Senate Bill (SB) 45 redistributed STIP monies so that the Regional Transportation Planning Agencies (RTPA) and Metropolitan Planning Organizations (MPO) get 75% for regional use and the Department gets 25% for inter-regional use. In addition, SB 45 dictates how the Department prioritizes its funds on the inter-regional transportation system by amending Section 167 of the Streets & Highways Code to read:

167. (a) Funds in the State Highway Account in the State Transportation Fund shall be programmed, budgeted subject to Section 163, and expended to maximize the use of Federal funds and shall be based on the following sequence of priorities:

- Operation, maintenance, and rehabilitation of the state highway system.
- Safety improvements where physical changes, other than adding additional lanes, would reduce fatalities and the number and severity of injuries.
- Transportation capital improvements that expand capacity or reduce congestion, or do both.
- Environmental enhancement and mitigation programs.

As a result of SB 45, the authority over how transportation dollars are spent is put back into the hands of the local agencies. It is the Department's mission to respond to a clearly demonstrated need, safety, highway maintenance or congestion relief, in that order. This legislation has made it clear that the Department's responsibility is to the inter-regional transportation system and the locals will maintain responsibility for local transportation systems. In addition, the responsibility of determining land use lies in local governments' hands.

4.13.2 Cumulative Growth Inducement

Growth inducement is difficult to measure since the impacts are generally indirect and occur over an extended period of time after the project is completed. The relationship is generally evaluated as either facilitating planned growth or inducing unplanned growth. A new roadway may create additional market pressure for growth because one constraint for development has been lifted. However, whether or not the project will induce unplanned growth depends on political, physical and socioeconomic factors as well. The proposed project is intended to meet the existing and/or projected traffic demand based upon the local land use plans. Growth inducement is discussed at greater length in Section 4.2.2.

4.13.3 Cumulative Traffic Impacts

Traffic congestion will be alleviated within the Lincoln city limits by removing inter-regional travelers. However, congestion in the town of Wheatland will become worse. By making SR 65 an expressway; removing cross traffic and driveways and increasing speeds, it will become more appealing to those traveling between Marysville and Roseville, thus increasing congestion in the town of Wheatland, where the bypass ends. Pressure from the raceway and amphitheater traffic will further exacerbate the problem. Operational improvements of the existing highway through Wheatland are currently being pursued, but are not likely to solve the problem.

A highway project to bypass the town of Wheatland has been proposed. The California Transportation Commission has not funded this project at this time, however, it is tentatively scheduled for construction in 2006.

4.13.4 Cumulative Impacts to Natural Resources

Except for those impacts directly associated with construction, most impacts to biological resources are permanent. The ecosystem will generally not absorb, or adapt to, the loss of these resources. Mitigation may help offset a portion of the impacts over time. However, as growth continues to occur, it is expected that biological resources will continue to be lost. The following potential impacts to natural resources will be evaluated in this section:

- Regional habitat loss from the cumulative effects of multiple land conversion activities.
- Habitat fragmentation associated with regional habitat loss.
- Impacts to special status species and loss and degradation of sensitive habitats from the cumulative effects of multiple land conversion activities.
- Loss of fish and wildlife populations due to the creation of multiple barriers to migration.

Habitat Conversion in Placer County

The Placer County General Plan (Placer County, 1994) identifies the predictable effects of planned growth within the county. Development under the Land Use Element described in the General Plan could result in a population increase of 45,000 over the 1990 baseline population. Most of this increase takes place in southern Placer County. The following table illustrates the conversion of natural habitat to urban development for the entire county based on the predicted 2010 scenario.

Table 4-34 Habitat Conversion for Placer County (2010 Scenario)

	Approximate extent of intact vegetation		**Habitat Conversion**		**Habitat conversion or reduced habitat value**		**Limited habitat impacts**	
Vegetation Communities ▼	Vegetation communities in unincorporated areas (1991)		Planned urban development in unincorporated areas		Planned urban, suburban and rural residential development in unincorporated areas		Existing and planned recreational, agricultural and forestry land uses in unincorporated areas	
Urban, agricultural rangeland	61 901 ha *152,960 ac*	100%	2916 ha *7,200 ac*	4.7%	17 143 ha *42,360 ac*	27.7%	41 845 ha *103,400 ac*	67.6%
Grassland	11 736 ha *29,000 ac*	100%	1214 ha *3000 ac*	10.3%	809 ha *2,000 ac*	6.9%	9713 ha *24,000 ac*	82.8%
Oak woodland	11 736 ha *29,000 ac*	100%	0	0.0%	1619 ha *4,000 ac*	13.8%	10 117 ha *25,000 ac*	86.2%
Conifer forest	186 967 ha *462,000 ac*	100%	0	0.0%	19 020 ha *47,000 ac*	10.2%	167 946 ha *415,000 ac*	89.8%
Hardwood forest	4168 ha *10,300 ac*	100%	0	0.0%	2833 ha *7,000 ac*	6.8%	38 850 ha *96,000 ac*	93.2%
Chaparral and shrub	22 663 ha *56,000 ac*	100%	0	0.0%	1214 ha *3,000 ac*	5.4%	21 449 ha *53,000 ac*	94.6%

Preservation as a condition of development

Subsequent to the preparation of the City of Lincoln General Plan in 1988, new development, listed in Chapter 1, Table 1-12, has occurred consistent with Plan designations. These projects generally include open space dedications to preserve areas of vernal pools, riparian corridors or other high quality resources and compensatory mitigation measures to offset unavoidable impacts to wetlands. The Lincoln General Plan recognizes Auburn and Markham Ravines as important open space resources, and both corridors are designated for preservation.

Cumulative Impacts on Natural Communities and Wildlife Habitats

Agricultural lands are abundant in the CISA, representing about 91 530 ha (226,079 ac), or 69 percent of the total area. Natural lands, most of which are grasslands that are used for grazing, represent an additional 34 411 ha (85,030 ac). Together, these "natural communities" account for about 95 percent of the total area within the CISA. The remaining five percent is developed. Despite the trend towards growth and development within portions of the CISA, large areas of agricultural lands and grasslands, particularly in unincorporated County areas, will be preserved for the foreseeable future.

Vernal Pool Impacts

Due to fewer environmental restrictions, development will likely be maximized on grasslands without vernal pools. However, due to the wide distribution of vernal pools in portions of the CISA, it is unlikely that this resource can be totally avoided by future development, and additional losses will likely occur. Vernal pools are a unique wetland resource, limited to suitable soil types, and generally restricted to the eastern portion of the CISA. Given the likelihood of additional impacts to this valuable resource as development continues, the Lincoln Bypass project represents a substantial contribution to the cumulative loss of this resource in the CISA.

It is expected that all wetland impacts would be compensated within the region resulting in a "no-net-loss" of wetland habitat. It is anticipated that habitat mitigation plans will preserve and create natural habitats within the region collectively and would facilitate habitat continuity and sustainability within the region.

Riparian Habitat Impacts

Riparian corridors such as Auburn Ravine and Coon Creek are recognized as valuable resources and designated in local planning documents as open space areas, generally protected from encroachment. Although impacts to these resources will likely be restricted to transportation and utility crossings (bridged to help minimize impacts and

allow wildlife movements), impacts are still likely to occur and are difficult to offset through conventional mitigation measures.

Oak Woodlands

Oak woodlands are considered prime residential development areas due to their aesthetic quality. Development is often planned around the individual trees, and measures are generally taken to protect trees during construction. While individual oak trees may persist in developed settings, there is still a risk of tree loss due to over-watering, disease or compaction of soil within the root zone. Further, in a developed setting, the woodland no longer functions as an ecosystem, but as isolated trees often separated by homes, ornamental landscaping or other related uses.

Marsh Habitat

Marsh habitat is the most common wetland type in the CISA. Similar to vernal pools, marsh habitats are regulated under Section 404, and this additional regulation may discourage development in these wetland areas. Freshwater marsh provides important habitat for resident and migratory waterfowl.

It is expected that all wetland impacts would be compensated within the region resulting in a "no-net-loss" of wetland habitat. It is anticipated that habitat mitigation plans will preserve and create natural habitats within the region collectively and would facilitate habitat continuity and sustainability within the region.

Wildlife Habitat

Continued growth and development within the CISA will cause the fragmentation of continuous large tracts of wildlife habitat into smaller, more isolated blocks. This habitat fragmentation may lead to reduced movements and impaired dispersal of young, and may ultimately result in small, isolated populations of some species. Over time, this may even lead to elimination of some species from the CISA.

Special Status Species

All of the Special status plants occurring in the CISA are associated with vernal pools, thus, the potential for impacts is directly related to the extent of vernal pool impacts. Similarly, potential impacts to special status vernal pool invertebrates are directly related to the extent of vernal pool impacts.

Of the special status bird species occurring in the CISA, the State-listed Swainson's hawk is of primary concern. The combination of extensive foraging habitat adjacent to suitable nesting sites makes the area around Lincoln highly suitable for this species. The abundance of rice fields throughout much of the cumulative impacts CISA, which do not

provide foraging opportunities for Swainson's hawks, makes the suitable habitat around Lincoln even more important for this species. Development in the cumulative impacts CISA will cause the direct loss of foraging habitat and possibly nesting habitat as well.

Wetlands

Wetland areas within the CISA include vernal pools, vernal and freshwater marsh, and riparian scrub and forest. The major development projects currently proposed, or under construction, in the Lincoln Planning Area (Lincoln Crossing, Twelve Bridges) have substantial wetland impacts, as does the proposed aggregate mining project in Placer County. The Lincoln Bypass is expected to result in the loss of approximately 65 ha (160 ac) of wetlands, including vernal pools and vernal marsh. It is expected that all wetland impacts would be compensated within the region resulting in a "no-net-loss" of wetland habitat. It is anticipated that habitat mitigation plans will preserve and create natural habitats within the region collectively and would facilitate habitat continuity and sustainability within the region.

4.13.5 Cumulative Impacts to Air Quality

The Sacramento Valley Air Basin is designated as a severe non-attainment area for the Federal and State ozone standard and also experiences localized violations of the CO and PM_{10} standards. Vehicles and other mobile sources cause about 70 percent of this region's air pollution problem. The Federal Clean Air Act as amended in 1990 requires a comprehensive attainment plan from every ozone non-attainment area classified as serious, severe or extreme. The 1994 State Implementation Plan (SIP) was developed by the California Air Resources Board (CARB) and the Sacramento Metropolitan Air Quality Management District (SMAQMD) as a strategy for achieving attainment by the Clean Air Act deadline of 2005 for the Sacramento Region.

Improved technology in the form of Low Emission Vehicles (LEV) is the cornerstone of the CARB and SMAQMD strategy for improving air quality affected by mobile sources such as automobiles and trucks. Transportation control measures aimed at reducing vehicle miles traveled would be pursued jointly by the CARB, the local air pollution control districts and other local agencies. However, it is not within either CARB or SMAQMD jurisdiction to regulate transportation issues; that authority lies with the local governments.

Individually, this project wouldn't have an impact on the overall air quality. However, as a necessary element of the many development activities happening in the region, this project could contribute to the poor air quality of the air basin. There are 13 residential and commercial developments either being constructed or in the planning stage within the Lincoln Sphere of Influence, including more than 15,000 homes.

Collectively, this will bring over 46,000 additional people to the area. Since no alternative modes of transportation are being seriously pursued, the automobile will be the *de facto* transportation mode of choice.

4.13.6 Cumulative Impacts to Water Resources

The residential growth planned for the CISA will cause an increase in impermeable surfaces and the subsequent runoff associated with roads and the urban environment. This could result in warmer water temperatures of storm water runoff. The wastewater facility could result in increased turbidity and water temperature to Auburn Ravine during low water flows.

Urban runoff generally consists of dry weather runoff, stormwater discharges and irrigation return water containing substances washed from land and streets. Nutrients and pesticides from home use, large-scale urban landscaping projects, parks and golf courses are often present in urban runoff. Storm drains may collect industrial chemicals dumped legally and illegally, oil and antifreeze from home mechanics, refuse from domestic and municipal maintenance and sediments from construction-related erosion (Jones & Stokes 1999). Urban and stormwater runoff and wastewater discharges may have the potential to result in exceedances of adopted water quality criteria.

Detention basins will remove a large portion of pollutants, but not all. They may also increase the temperature of the runoff while the water is exposed to sunlight. It is not possible to predict the total load of pollutants in the receiving waters or the possible water temperature increase from existing data for the City of Lincoln's proposed expansion to a population base of about 10,000 today to between 18,000 and 28,000 by 2010. However, it is reasonable to assume that increased pollution loading and increased water temperature will be a result of the urban expansion regardless of the bypass alternative.

4.14 SECTION 4 (f) EVALUATION

4.14.1 Purpose Of Section 4(f) Evaluation

The Department is proposing to bypass the city of Lincoln with a freeway. The project is described in detail in Chapter 2 of this document. Five of the six alignments being considered require the acquisition of portions of a property that has been determined to be eligible for the National Register of Historic Places (NRHP) by the State Historic Preservation Officer (SHPO).

Alternative D13, D13 North Modified, D13 South Modified, A5C1 and D1 would cross portions of the Fickewirth Ranch, which has been determined eligible for the NRHP by the consensus of SHPO. This section identifies the Fickewirth property as Section

4(f) property affected, describes the nature and extent of the use of the property and evaluates alternatives that would avoid or minimize the use of this property.

In addition, one archaeological site located along the AAC2 alignment is potentially eligible for inclusion in the NRHP. Currently, the D 13 North Modified has been identified as the Preferred Alternative in accordance with the process agreed to in the NEPA/404 MOU. In the event that AAC2 is chosen as the preferred alternative, further evaluation will be required. If it appears that the site is eligible for inclusion and warrants preservation in place, then the Section 4(f) would apply to this site as well and a Section 4(f) Evaluation would be completed for this site. This process is consistent with the current SHPO policy.

Section 4(f) of the U.S. Department of Transportation Act of 1966 (49 USC 303) declares that a "special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites." Section 4(f) applies when a proposed action uses land from a significant national, state, or local historic site. For the purposes of Section 4(f), a historic site is significant only if it is on or eligible for the NRHP, unless the federal agency determines otherwise (23 CFR 771.135[c]).

Under Section 4(f), "use" of a historic property may involve one or more of the following kinds of actions:

- Fee-simple taking.
- Temporary or Permanent easement.
- Constructive Use. A constructive use is an action which does not directly infringe on a property or involve its occupants, but which substantially impairs the historic integrity. For historic sites, a finding of adverse effect under Section 106 of the National Historic Preservation Act (NHPA) would constitute a constructive use.

The objective of this legislation is to preserve parklands, wildlife refuges and historical properties that could be affected by federal transportation projects. Section 4(f) permits the Secretary of Transportation to approve a project that requires the use of Section 4(f) lands only if:

- there is no feasible and prudent alternative to the use of the land from the property; and
- the action includes all possible planning to minimize harm to the property resulting from such use.

4.14.2 Proposed Action

A detailed project description can be found in Chapter 2 of this Draft Environmental Impact Statement /Report. Briefly, the Department proposes to construct

a freeway around the city of Lincoln, beginning near Industrial Boulevard and ending just before the Bear River, a total of 18.6 km (11.6 mi). Initially, a four-lane freeway will be constructed up to Nelson Road or Nicolaus Road, depending on the alternative selected, and a two-lane access controlled freeway will continue up to Riosa Road and SR 65. As traffic demand increases, the lanes from Nelson/Nicolaus to the end of the project will be widened to four lanes and at-grade intersections will be replaced with interchanges.

4.14.3 Purpose Of Project

The purpose of this project is to relieve congestion and improve safety on existing SR 65 in the vicinity of the city of Lincoln and provide for a regional traffic solution to accommodate projected traffic volumes for the year 2020.

4.14.4 Need For Project

The following sections are summarized from Chapter 1 Purpose and Need for the project. For more details, please refer to that chapter.

Safety

Accident rates on existing SR 65 within the City of Lincoln are consistently higher than the average for a similar type of highway.

Traffic

Within the study limits, SR 65 is a "Main Street" highway that will not serve the ultimate interregional and local travel demand. Proposed development in and around the City of Lincoln will significantly add to the congestion on SR 65. Operating at level of Service (LOS) D in 1994, SR 65 through the study limits is anticipated to decline to LOS F by the year 2005. Traffic volumes are expected to increase approximately 55% over the next 20 years. Cross traffic resulting from numerous driveways, signalized intersections and proposed future connections will contribute substantially to the deterioration of the level of service in the downtown area.

Growth Forecasts

Lincoln is a fast growing community. Although the project area is predominantly rural, it is located near communities in the greater Sacramento region where population growth has occurred at high rates in recent years. The need to provide increased capacity on SR 65 is related to this pattern of growth.

Specific plans for eleven proposals for residential development are currently in various stages of approval, including the Planned Developments of Twelve Bridges to the southeast and Lincoln Crossing and Three D to the southwest. These projects encompass over 3000 ha (7,410 ac) and will involve the building of over 15,453 new homes.

Figure 4-11 Location of Fickewirth Ranch



4.14.5 Section 4(f) Properties

The Section 4(f) property potentially affected by the proposed project is the Fickewirth Ranch, shown in Figure 4-11. The Fickewirth Ranch is located at 2780 Dowd Road, approximately 4.8 km (3.0 mi) south of the town of Sheridan. The property consists of a residence, tank house, windmill, long shed (originally a chicken house), timber-framed hay barn, a one-time blacksmith shop and several smaller miscellaneous sheds. The residence and most of the outbuildings were constructed in 1901. The house was originally built as a one-story Queen Anne cottage; a second story was added about 1912. The buildings on the property have been maintained in their original form with little or no modification. Materials used to maintain the property were of the same kind as the original, thereby serving to preserve the original character and integrity of the farm complex. The house is one of the earliest intact residences remaining in the local area. Mr. and Mrs. Fickewirth currently own the ranch. The property is approximately 1524 m by 762 m (5000 ft by 2500 ft).

The elevation drops approximately 1.5 m (5 ft) between the building complex and each of the alignments. The actual roadway will not be seen from the building complex, although vehicles on the highway will still be visible.

The Fickewirth Ranch has been determined eligible for the NRHP at the local level under Criterion C as an embodiment of its time, period and method of construction. All of the structures on the property, in their form and function, contribute to this determination. Furthermore, the property remains in its rural setting. The SHPO has agreed to a "Finding of No Effect" for the project (November 1994).

In addition, one archaeological site located along the AAC2 alignment is potentially eligible for inclusion in the NRHP. Further evaluation will be required if the AAC2 alignment is chosen as the preferred alignment. If it appears that the site is eligible for inclusion and warrants preservation in place, then the Section 4(f) would apply to this site as well and a Section 4(f) Evaluation would be completed for this site. Section 4(f) does not apply if FHWA, after consultation with SHPO and the ACHP, determines that the archeological resource is important chiefly because of what can be learned by data recovery (even if it is agreed not to recover the resources) and has minimal value for preservation in place.

4.14.6 Use of Section 4(f) Properties

Acquisition of portions of the Fickewirth Property

Alternatives A5C1, D1, D13, D13 South Modification and D13 North Modification pass through the 104 ha (258 ac) agricultural parcel containing the Fickewirth Ranch. The proposed alignment for A5C1 lies approximately 457 m (1500 ft) from the ranch

complex. D1 and D13 and its modifications are approximately 610 m (2000 ft) from the buildings. (See Figure 4-11, showing the location of the property, ranch complex and the alternatives.) The D corridor alternatives will remove approximately 10.7 ha (26.5 ac) of walnuts from production and 1.5 ha (3.7 ac) of walnut orchard will be removed for the A5C1 alternative. The area required runs along the eastern edge of the property. In addition, the southeast corner of the property would be required for the interchange. The total acreage of the property is 104 ha (258 ac).

Acquisition of the Archeological Site

Alternative AAC2 does not affect the Fickewirth property; however, there is still the potential for Section 4(f) involvement. Two archaeological sites were identified in the initial review and one of them is potentially eligible for inclusion on the NRHP. The potentially eligible site is located within the APE (Area of Potential Effect) of Alternative AAC2. If the AAC2 alternative were chosen, this site would be evaluated for inclusion in the NRHP. If it were determined eligible for inclusion and warranted preservation in place, Section 4(f) would apply to this site as well.

4.14.7 Avoidance Alternatives

There were several alignments that would avoid the Section 4(f) properties. Alternatives T, E, A3, AA and A5 and the No Build do not affect either the Fickewirth property or the archeological site mentioned above. These alignments were considered, but rejected and confirmed by consensus of the NEPA/404 MOU participants when all agreed on the Purpose and Need and the Range of Alternatives. See Chapter 2, "Alternatives Withdrawn from Further Consideration" for more information on these alignments.

Since the AA, A3 and A5 alternatives were first developed, numerous housing developments have been constructed in the path of these alternatives. Consequently, the A alternatives impact quite a few more residents than the D corridor. The A alignments also cross through areas of high quality vernal pools between Nicolaus Road and the Union Pacific Transit Company (UPTC) railroad tracks. In addition, the shorter alignments would not alleviate congestion within the City of Lincoln. Because of higher social impacts, natural resource impacts and the fact that the alignments will not relieve congestion within the city of Lincoln, these alternatives were not considered further.

The T alternative upgrades the existing SR 65 alignment to four lanes. This alternative would eliminate parking from the downtown area to accommodate the additional lanes.

The primary disadvantage of this alternative is that it fails to satisfy the regional need for an adequate freeway system in the area. It does not alleviate the problems of

numerous cross streets and driveways. Initially, widening to four lanes may reduce the accident rate at the numerous intersections in town. As Lincoln grows, traffic through the central business district will become more congested and it is anticipated the intersection accident rate will increase.

4.14.8 Measures to Minimize Harm

Three design modifications were considered to minimize harm: 1) realigning Wise Road to allow room for an interchange on the adjacent property, 2) realigning the D 13 alignment just around the interchange area and 3) realigning the alignment from the beginning of the curve located parallel to Nicolas Rd.

Figure 4-12 shows the first design modification. In order to construct the interchange while avoiding the Fickewirth property, Wise Road would be curved southward, impacting the adjacent properties to a greater extent and putting a kink in an otherwise straight rural road. This modification is considered less desirable for engineering and safety reasons. This modification was not explored in depth because of the safety issues associated with putting a sudden curve in an otherwise straight rural road.

The second modification investigated was to curve the D 13 alternative east around the Wise Road interchange area. (See Figure 4-13) This modification is also less desirable due to the sudden curve in an otherwise relatively straight road. The geometric design of these modifications are acceptable and would comply with minimum highway design standards, however it is the Department's desire to design roads to the highest standards, and not simply to minimum standards. These alternatives, while complying with minimum standards, would not represent the best possible design.

Figure 4-14 shows the third modification of D13 that avoids the Section 4(f) property. The D-13 alignment is shifted east beginning before the curve at Nicolaus, and then gently curves back into the original D-13 after passing the Fickewirth property. This modification was examined in some detail as shown on the table below. There would be 11 properties affected by this modification. Four additional properties are affected, but 3 properties that would have been affected by D-13 are not affected by the D-13 4(f) modification. An additional $3,000,000 would be required for right of way acquisition because of so many properties being landlocked by this alternative.

There would be an additional 2.6 ha (6.5 ac) of wetlands/waters of the U.S. affected by this alternative, including 0.8 ha (2 ac) of vernal pools. An additional 1.9 ha (4.7 ac) of oak woodlands would also be affected by this alternative.

This alternative meets good engineering standards, however, it affects more wetlands and oak habitat than the D 13 North Modified, therefore probably would not be

the "Least Environmentally Damaging Practicable Alternative" (LEDPA), as defined under the 404 (b)(1) guidelines used by the ACOE and EPA.

Table -4-35 Summary of Impacts; A5C1, D13 North Modified and D13 4(f)

	D13 Alignment	D13 North Modified	D13 South Modified	D13 4(f)
Wetlands/ Nonwetland Waters	5.3 ha (13.1 ac) wetlands/waters 2.2 ha (5.4 ac) vernal pools/swales 2.8 ha (6.8) ac of marsh one high value marsh	5.6 ha (13.8 ac) wetlands/waters 2.1 ha (5.2 ac) vernal pools/swales 3.1 ha (7.6) ac of marsh	6.8 ha (16.8 ac) wetlands/waters 2.4 ha (6.0 ac) vernal pool/swales 2.2 ha (5.5 ac) marsh	8.2 ha (20.3 ac) wetlands/waters 2.9 ha (7.2 ac) vernal pools/swales 3.6 ha (9.0 ac) of marsh
Special Status Species	Vernal pool fairy shrimp Raptor foraging and potential nesting habitat one high value marsh	Vernal pool fairy shrimp Raptor foraging and potential nesting habitat	Vernal pool fairy shrimp Raptor foraging and potential nesting habitat	Vernal pool fairy shrimp Raptor foraging and potential nesting habitat
Natural Communities Wildlife, Fisheries	50.4 ha (123.3 ac) grassland/ vernal pool 1.3 ha (3.3 ac) riparian forest 3.5 ha (8.6 ac) oak woodlan	64.2 ha (158.7 ac) grassland/ vernal pool 1.3 ha (3.3 ac) riparian forest 3.5 ha (8.6 ac) oak woodland	52.5 ha (129.7 ac) grassland/ vernal pool 1.2 ha (3.0 ac) riparian forest 0.2 ha (0.4 ac) oak woodland	86.8 ha (214.5 ac) grassland/ vernal pool 1.5 ha (3.6 ac) riparian forest 5.4 ha (13.3 ac) oak woodland
Water Quality	198.9 ha (491.5 ac) footprint with 9 stream crossings	172.6 ha (426.6 ac) footprint with 8 stream crossings	196.3 ha (485.2 ac) footprint with 9 stream crossings	221.3 ha (546.7 ac) footprint with 8 stream crossings
Cultural Resources	Requires small amount of right-of-way from property eligible for National Register.	Requires small amount of right-of-way from property eligible for National Register.	Requires small amount of right-of-way from property eligible for National Register.	None
Agricultural Land	102.5 ha 253.2 ac	96.7 ha (238.8 ac)	95.5 ha 235.7 ac	87.9 ha (217.1 ac)
4(f) Involvement	Yes 10.7 ha (26.5 ac)	Yes 10.7 ha (26.5 ac)	Yes 10.7 ha (26.5 ac)	No
Land Use/ Socio-economics	Residences: 10 Businesses: 2	Residences: 10 Businesses: 1	Residences: 14 Businesses: 2	Residences: 11 Businesses: 1
Right of Way Costs	$20,000,000	$22,500,000	$20,500,000	$25,500,000
Cost	$161 million (min) $192 million (max)	$162 million (minimum) $193 million (maximum)	$160 million (minimum) $191 million (maximum)	$165 million (minimum) $196 million (maximum)

Table 4-36 Summary of Impacts A5C1, AAC2 and D1

	AAC2 Alignment	A5C1 Alignment	D1 Alignment
Wetlands/ Nonwetland Waters	6.3 ha (15.5 ac) wetlands/waters 3.3 ha (8.0 ac) vernal pool/swales 2.4 ha (6.0 ac) of marsh two high value vernal pool complexes	9.4 ha (23.1 ac) wetlands/waters 6.5 ha (16.1 ac) vernal pool/swales 2.2 ha (5.4 ac) of marsh two high value vernal pool complexes	5.7 ha (14.1 ac) wetlands/waters 2.8 ha (6.8 ac) vernal pool/swales 2.6 ha (6.3 ac) of marsh one high value marsh
Special Status Species	Vernal pool fairy shrimp Ahart's dwarf rush Raptor foraging and potential nesting habitat two high value vernal pool complexes	Vernal pool fairy shrimp Ahart's dwarf rush Raptor foraging and potential nesting habitat two high value vernal pool complexes	Vernal pool fairy shrimp Raptor foraging and potential nesting habitat one high value marsh
Natural Communities Wildlife, Fisheries	76.0 ha (187.7 ac) grassland/ vernal pool 1.1 ha (2.6 ac) riparian forest 10.2 ha (25.2 ac) oak woodland	80.1 ha (197.7 ac) grassland/ vernal pool 2.2 ha (5.4 ac) riparian forest 5.8 ha (14.3 ac) oak woodland	48.4 ha (119.4 ac) grassland/vernal pool 1.3 ha (3.2 ac) riparian forest 0.4 ha (0.9 acre) oak woodland
Water Quality	178.3 ha (440.6 ac) footprint with 11 stream crossings	185.8 ha (59.0 ac) footprint with 11 stream crossings	182.8 ha (451.7 ac) footprint with 9 stream crossings
Cultural Resources	Requires small amount of right of way from property eligible for National Register. Impacts to recorded archeological site.	Requires small amount of right-of-way from property eligible for National Register.	Requires small amount of right of way from property eligible for National Register.
Agricultural Land	51.1 ha 126.1 ac	54.4 ha (134.3 ac)	84.4 ha 208.5 ac
Section 4(f) Use	Possibly[1]	Yes 1.5 ha (3.7 ac)	Yes 10.7 ha (26.5 ac)
Land Use/ Socio-economics	Residences: 20 Businesses: 2	Residences: 78 Businesses: 5	Residences: 20 Businesses: 2
Right of Way Costs	$34,000,000	$56,000,000	$22,000,000
Cost	$163 million (min) $195 million (max)	$155 million (minimum) $196 million (maximum)	$170 million (minimum) $201 million (maximum)

[1]If the archaeological site were determined to warrant preservation in place, then this alternative would affect a Section 4(f) property.

Other measures to minimize harm include eliminating or minimizing the ramps in the northeast quadrant, eliminating the ramps altogether and narrowing the median.

The current ramp configuration, the L-9, is the most efficient ramp configuration available, not only from an operations standpoint, but also from a safety point of view. It is the most often used configuration, which increases safety because the driver knows what to expect. It is the most efficient ramp configuration, also increasing safety and minimizing potential conflicts.

Eventually, Airport Road will be extended to meet Wise Road, which will make the Wise Road interchange appealing to those accessing the airport. An interchange is necessary at this location due to the long distance between the interchanges at Nelson and Riosa Roads, approximately 12.1 km (7.5 mi).

Narrowing the median to the minimum standard would save 0.1ha (0.04 ac) of the Fickewirth's property. However, it would eliminate the possibility of locating a Light Rail facility within the median in the future.



Figure 4-12
Realigning Wise Road

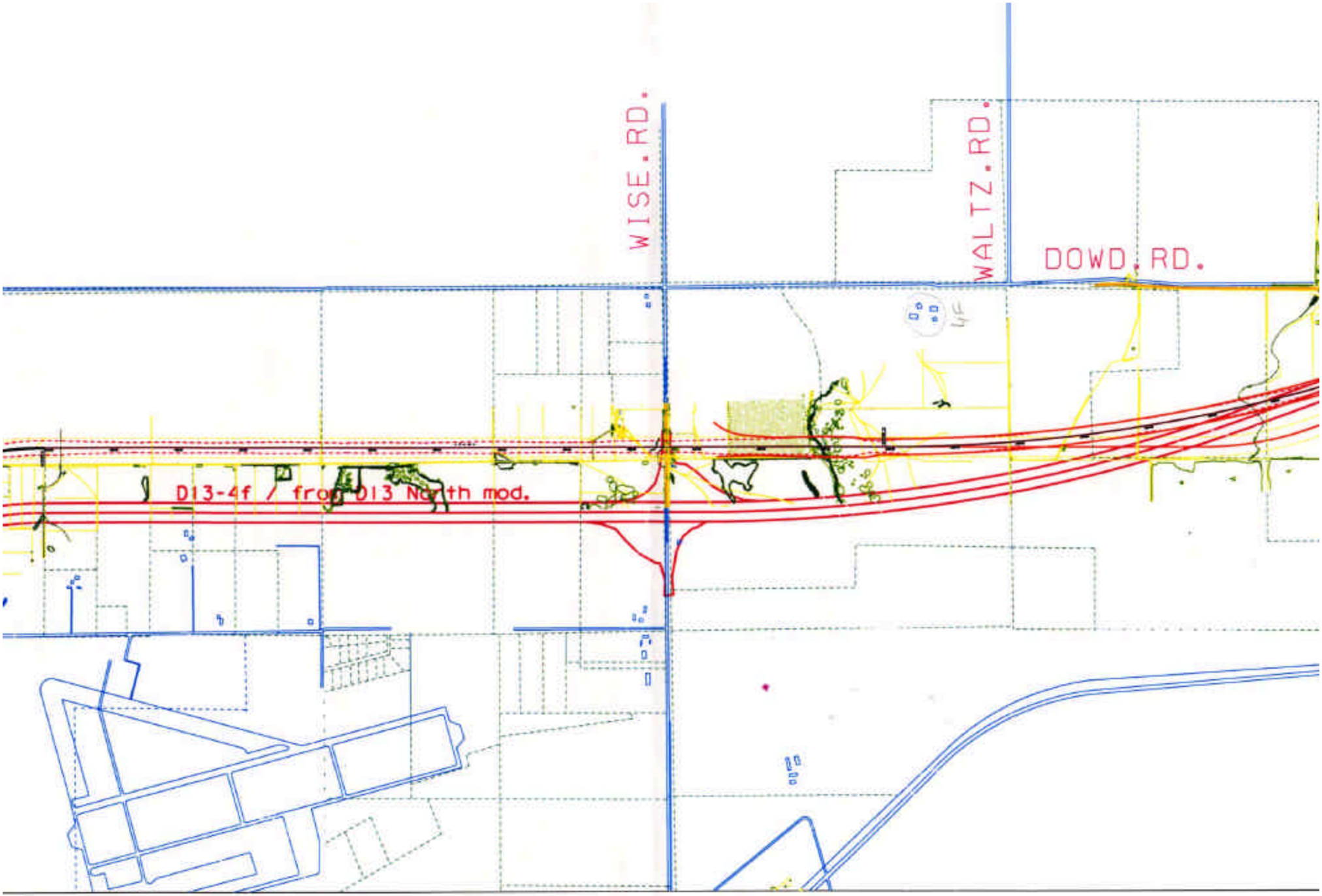

WISE. RD.
WALTZ. RD.
DOWD. RD.
D13-4f / from D13 North mod.

Figure 4-14 Shifting of D 13

5 RELATIONSHIP BETWEEN LOCAL SHORT TERM USES OF MAN'S ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG TERM PRODUCTIVITY

This project is consistent with the Placer County Transportation Planning Agency Regional Transportation Plan, which outlines the ultimate transportation plan for the region, including local road and highway improvements. This Plan was developed to accommodate current and proposed land uses and the associated projected travel. Construction of the project will result in long term environmental impacts such as:

- Removing agricultural land from production.
- Destroying vernal pools and the associated flora and fauna.
- Destroying many large, heritage oak trees.

Conversely, the project would encourage uses of the land consistent with highway uses such as residential, commercial and industrial land use, bringing economic expansion to the area. The long term productivity of the City of Lincoln would be:

- Decreased congestion within the downtown core.
- Improving the quality of life for both the city residents and the commuters once faced with delays during peak hours within the city limits.
- In addition, efficient inter-regional movement of goods, services and people would be enhanced by the addition of a bypass around the City of Lincoln.
- Mitigation for the Bypass would contribute to the preservation of some agricultural lands and wetland habitat. Acorns would be planted to replace the oak trees.

6 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES WHICH WOULD BE INVOLVED IN THE PROPOSED ACTION

Implementation of the proposed action involves a commitment of a range of natural, physical, human and fiscal resources. Land used in the construction of the proposed facility is considered an irreversible commitment during the time period that the land is being used for a highway facility. However, if a greater need arises for use of the land or if the highway facility is no longer needed, the land can be converted to another use. At present there is no reason to believe such a conversion will ever be necessary or desirable.

Considerable use of fossil fuels, labor and highway construction materials such as cement, aggregate and bituminous material would be expended. Additionally, large amounts of labor and natural resources would be used in the fabrication and preparation of construction materials. These materials are generally not retrievable. However, they are not in short supply and their use will not have an adverse effect upon the continued availability of these resources. Any construction will also require a substantial one-time expenditure of both State and Federal funds which are not retrievable.

In addition, for much of the project area, highway use will supplant agricultural use, possibly changing the land use in that area forever by providing a means to develop residential housing. Some the land converted to highway use is prime farmland, which cannot easily be changed back into farmland once the road is built.

Vernal pools will also be irretrievably lost to the highway project. Vernal pools are tens of thousands years in the making, and require specific geologic and topographic conditions in order to occur. Success in reproducing and replacing vernal pools has been uncertain. Together with the loss of the vernal pools will be the plants and animals that inhabit vernal pools, such as the vernal pool fairy shrimp. Due to the incremental loss of their habitat throughout the Sacramento Valley region, their continued existence is uncertain.

The commitment of these resources is based upon the concept that residents in the immediate area, State and region will benefit by the improved quality of the transportation system. These benefits will consist of improved accessibility and safety, savings in time and greater availability of quality services which are anticipated to outweigh the commitment of these resources.

7 COMMENTS AND COORDINATION

Caltrans has conducted a substantial amount of public outreach on this project over the decade that it has been in development. This chapter will discuss coordination with the public and federal, state and local agencies. The NEPA/404 coordination is discussed in a separate section of this chapter.

7.1 Cooperating Agencies

A cooperating agency is any agency, other than the lead agency, that has jurisdiction by law or special expertise with respect to the environmental impacts expected to result from a proposal. The following agencies have agreed to be cooperating agencies under NEPA. Letters from the ACOE and FWS are located in Appendix A.

- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- U.S. Environmental Protection Agency
- National Marine Fisheries Service

7.2 Notice of Preparation and Notice of Intent

A Notice of Intent was published in the Federal Register on June 28, 1990 and a Notice of Preparation was distributed by the Office of Planning and Research (OPR) on June 27, 1990. Copies of these notices are located in Appendix B. The following state agencies received a copy of this Notice either through the OPR or through Caltrans. Copies of the letters can be found in Appendix C. Table 7-1 lists the responses to the NOI and NOP and summarizes the agencies concerns.

California Air Resources Board

California Dept. of Conservation

California Dept. of Fish and Game

California Dept. of General Services

California Dept. of Health

California Dept. of Housing and Community Development

California Dept. of Parks & Recreation, Office of Historic Preservation

California State Lands Commission

California Water Resources Control Board

Central Valley Region Water Quality Control Board

Native American Heritage Commission

Regional Air Pollution Control District/Air Quality Management District

The following agencies responded to these Notices and requests for information:

Table 7-1 Agencies Responding to Notice of Intent and Notice of Preparation

Agency	Date	Issues/Concerns
Federal Government		
U.S. Dept. of Interior, Bureau of Mines	June 12,1990 August 2,1990	Provided a print out locating minerals and mineral claims.
U.S. Dept. of Interior, Bureau of Indian Affairs	July 24,1990	No Indian Lands under the jurisdiction of this agency are involved.
State Government		
California Dept. of Fish and Game	May 26, 1989	Suggested some issues they will be looking for in the NES.
California Dept. of Fish and Game	May 11, 1990	Issues: Riparian habitat, Swainsons' hawk, vernal pools, valley elderberry longhorn beetle, giant garter snake, chinook salmon. They discussed requirements for mitigation.
California Dept. of Fish and Game	July 23, 1990	Referencing the May 11, 1990 letter for concerns.
California Dept. of Boating and Waterways	July 6, 1990	No comments.
Sacramento Area Council of Governments	July 10, 1990	No concerns of an environmental nature. The Lincoln Bypass is included in the 1990 Regional Transportation Improvement Program, and also conforms with the 1982 Regional Air Quality Plan.
California Regional Water Quality Control Board, Central Valley Region	July 12, 1990	The DEIR should; address the implementation of an enforceable erosion control plan, incorporate appropriate grading plan measures, and designate responsible parties for any phase of this project.
Dept. of Parks and Recreation, Office of Historic Preservation	January 30, 1995	Finding of Effect. Agreed that this project would not effect the historic properties in the vicinity.
County & Local Governments		
Placer County Dept. of Public Works	July 25, 1990	Impacts to county roads should be addressed. There is a concern about encroachment into agricultural lands by the freeway, and the conversion of agricultural lands due to growth pressures from the presence of the new road.

7.3 Coordination with Agencies

Coordination with the Resource Agencies is on going. The Resource Agencies have been invited to Project Development Team meetings, provided copies of minutes of those meetings and have been kept up to date on the current status of this project. As personnel changed within the different Resource Agencies, additional material has been sent to the new contact person. Table 7-2 lists the coordination that has taken place with other State, Federal and local agencies. Copies of the letters can be found in Appendix D.

Additional correspondence from the residents of Lincoln and surrounding areas can be found in the "Public Outreach" notebook located in the Caltrans District 3 office in Sacramento. A summary of the public hearings, open houses and informational meetings that have been held for this project are listed in Table and discussed in the next Section.

Table 7-2 Coordination with Agencies

U.S. Fish and Wildlife Service	
Letter to James McKevitt requesting guidance on USFWS concerns.	April 12, 1990
Letter from Wayne White responding to April 12, 1990 letter.	June 29, 1990
Letter from David Harlow responding to request of July 21, 1998 for information.	August 13, 1998
Letter from Karen Miller responding to March 12, 2000 telephone request for comments on survey protocol.	April 27, 2000
Letter from Karen Miller responding to August 28, 2000 request for information on endangered and threatened species	September 11, 2000
U.S. Army Corps of Engineers:	
Letter from Tom Coe, Chief, Regulatory Unit 1, regarding wetlands manual.	August 30, 1991
Letter to Tom Coe, responding to letter of August 30, 1991	September 27, 1991
Letter from Tom Coe regarding wetlands verification	September, 1991
U.S. Dept. of Agriculture, Natural Resources Conservation Service:	
Letter from Clifford Heitz, District Conservationist.	June 22, 1999
Farmland Conversion Impact Rating Forms.	May 13, 2001
California Dept. of Fish and Game:	
Letter from James Messersmith, Regional Manager responding to	May 26, 1989

request for information.	
Letter to Jerry Mench requesting CDFG concerns.	April 12, 1990
Letter from James Messersmith responding to request.	May 11, 1990
California Dept. of Parks & Recreation, State Historic Preservation Office	
Letter from Kathryn Gualtieri, State Historic Preservation Officer, concurring that Fickewirth Ranch and Sheridan Cash Store are eligible for National Register.	October 22, 1991
Letter from Cherilyn Widell, State Historic Preservation Officer, concurring that Fickewirth Ranch and Sheridan Cash Store are eligible for National Register and with the phasing of investigation for the archaeological sites.	August 8, 1994
Letter from Cherilyn Widell, State Historic Preservation Officer, responding to Section 106 request.	January 30, 1995
Placer County:	
Letter to Board of Supervisors and City Council advising them of this project.	July 24, 1989
Letter to Property Owners advising of this project.	July 24, 1989

7.4 Public Outreach

Three newsletters were sent out to the residents of Lincoln on April 12, 1990, March 1991 and March 1993. Listed in the table below are the public meetings that were held for the project.

Table 7-3 Public Meetings

When	Where	What
November 24, 1987	Caltrans District Office, Marysville	Informational meeting with the City, Caltrans, property owners, developers
November 16,1989	City Hall	Lincoln City Council Meeting
May 1, 1990	McBean Park Pavilion, Lincoln	Public Drop in Workshop
April 18, 1991	McBean Park Pavilion, Lincoln	Public Drop in Workshop
September 22, 1999	McBean Park Pavilion, Lincoln	Public Drop in Workshop
January 12, 2000.	Sheridan	Sheridan Municipal Council Meeting

The format for the public drop-in workshops was informal. Exhibits were set up around the room, with Caltrans representatives available to answer questions. Comment

Cards were available, as well as a place to sit down and fill them out. Cookies and coffee were provided by the Lincoln Lions Club. The Comment Cards are included in the Public Outreach Notebook and available for review at the Caltrans District 3 Sacramento office. Approximately 80 citizens attended the first meeting, and 18 commented. In general, the comments were favorable towards the project, although one person was negative. The second workshop had 90 participants, and 19 provided comments. The comments were all in agreement with the project, and favored the D corridor.

The most recent open house for this project was held on September 22, 1999. There were over 400 people in attendance and 226 Comment Cards were received at the open house. Ten additional comments came in the mail after the open house. A petition was submitted to Caltrans, signed by 314 people in opposition of the shorter A alignment due to the impacts on residents in that area and the feeling that it would divide the city.

Comments at that public workshop were overwhelmingly in favor of the D corridor, pretty evenly split between D1 and D13. Many of the people in favor of the D1 alignment were located in the Brookview Terrace subdivision, which would be more affected by the D13 alignment. Approximately 40 people suggested a blending of the D1 and D13, by taking D1 up to Nelson, then going with D 13.

Nine people were in favor of the A alignments and 21 were in opposition to the A alignments. A total of nine people were in opposition to the D alignments. Nine people did not feel a bypass was necessary and were in opposition to the whole project, one comment suggested rapid transit. Other concerns expressed in the Comment Cards were the impacts of noise and lights on this quiet community.

The following letters of comment were received from members of the public:

Elisabeth H. Fullerton, dated December 5, 1987

Edwin and Carol Scheiber, dated January 25, 1988

Elisabeth H. Fullerton, dated January 11, 1989

Mr. and Mrs. Edwin A. Noyes, Jr., dated January 21, 1989

Edwin and Carol Scheiber, dated July 19, 1990

Randy Collins, The Sammis Company, dated May 22, 1991

7.5 NEPA/404 coordination

In 1994, ACOE, EPA, FHWA, FWS, NMFS and Caltrans signed a formal Memorandum of Understanding (MOU) that integrates the NEPA process and Clean Water Act Section 404 procedures, as well as improves coordination among stakeholder agencies. The NEPA/404 Integration process was designed to implement Section 404

more effectively in its efforts to preserve wetlands and the species of plants and animals that depend on this type of habitat.

Under the guidelines of the NEPA/404 Integration process, signatory agencies are to agree to the project's "Purpose and Need" Statement which sets forth the criteria for selecting the project alternatives. The guidelines also specify that signatory agencies are to agree to the alternatives that are to be studied, early in the environmental review process. Letters documenting agreement from the agencies on the Purpose and Need, the range of alternatives and the criteria for selecting the alternative can be found in Appendix E and are listed in Table 7-4 below.

The NEPA/404 coordination is an on-going process. Meetings and correspondence will continue as the details of mitigation are worked out and the Least Environmentally Damaging Practicable Alternative (LEDPA) is chosen. The ACOE will publish a Public Notice informing the public of Section 404 involvement at the same time as the notice for the Final Environmental Impact Report/Statement is circulated. The ACOE will evaluate the comments it receives from its public notice.

While the Final Environmental Impact Statement/Report is being prepared, a preferred alternative in compliance with the section 404(b)(1) guidelines will be agreed upon. At that time, mitigation will be proposed and agreed upon, and a jeopardy/non-jeopardy opinion will be offered by the FWS. Table 7-4 details the NEPA/404 coordination to date.

Table 7-4 NEPA/404 Coordination

When	Who to Whom	What
April 24, 1994	FHWA/Caltrans to ACOE, EPA, FWS	Letter requesting concurrence on the purpose and need, criteria for selection of alternatives, and description of alternatives to be evaluated in the DEIR/S.
May 5, 1994	FHWA/Caltrans, EPA, ACOE, FWS	Meeting to discuss project.
May 12, 1994	FHWA/Caltrans to ACOE, EPA, FWS	Letter requesting concurrence on the purpose and need, criteria for selection of alternatives, and description of alternatives to be evaluated in the DEIR/S.
June 17, 1994	FWS to FHWA/Caltrans	FWS needs more information. Purpose & need not clearly identified, would like to see another alternative that doesn't affect wetlands, need a complete list of criteria and alternatives that were discarded at previous planning stages.
June 28,1994	EPA to FHWA/Caltrans	Concurrence that the range of alternatives meets the requirements for Section 404 and the criteria for the selection of alternatives to be evaluated is adequate. However, they did not agree that the purpose and need was adequate, and that the LEDPA was accurate.
June 30, 1994	FHWA/Caltrans, FWS	Meeting to discuss issues raised in FWS comment letter.

When	Who to Whom	What
February 18, 1997	FHWA/Caltrans to ACOE, EPA, FWS	Preliminary information for a meeting to obtain concurrence.
February 27, 1997	FHWA/Caltrans, ACOE, FWS	Meeting to discuss project.
March 6, 1997	FHWA/Caltrans, ACOE, EPA, FWS	Pre-application Interagency Meeting
March 17, 1997	FHWA/Caltrans to ACOE, EPA, FWS	Requesting concurrence again.
March 21, 1997	FWS to FHWA/Caltrans	Concurrence on projects purpose and need, range of alternatives and criteria for selection of alternatives.
April 7, 1997	ACOE to FHWA/Caltrans	Concurrence on purpose & need, range of alternatives, design parameters.
May 6, 1997	EPA to FHWA/Caltrans	Concurrence on purpose & need, range of alternatives, design parameters.
February 7, 2000	FHWA/Caltrans, ACOE, EPA, FWS	Meeting to re-acquaint the agencies with the project, review the Natural Environment Study and update the agencies on the project.
April 20, 2001	FHWA/Caltrans, ACOE, EPA, FWS	Meeting to present the Habitat Mitigation and Monitoring Proposal.

8 LIST OF AGENCIES, ORGANIZATIONS AND PERSONS TO WHOM COPIES WERE SENT

ELECTED OFFICIALS

U.S. CONGRESSMAN
Honorable John Doolittle
1228 Longworth House Office Building
Washington, D.C. 20515

U.S. SENATORS
Honorable Dianne Feinstein
Hart Senate Office BLDG., Suite 331
Constitution Ave. & 2nd Street, NE
Washington, D.C. 20515

Honorable Barbara Boxer
Hart Senate Office BLDG., Suite 112
Constitution Ave. & 2nd Street, NE
Washington, D.C. 20515

STATE ASSEMBLYMAN
Honorable David Knowles
The State Assembly
State Capitol
Sacramento, CA 95814

STATE SENATOR
Honorable Tim Leslie
The State Senate
State Capitol
Sacramento, CA 95814

FEDERAL AGENCIES

U.S. Environmental Protection Agency
Office of Federal Activities (A-104)
401 "M" Street, SW
Washington, D.C. 20460

EIS Coordinator, Region 9
U.S. Environmental Protection Agency
215 Fremont Street
San Francisco, CA 94105

Ms. Lisa Hanf, Chief
U.S. Environmental Protection Agency Region IX
Attn: Kathy Dady, CWA Compliance
75 Hawthorne St.
San Francisco, CA 94105-3901

Mr. Mike Finan, Chief
U.S. Army Corps of Engineers Sacramento District, Regulatory Section
Attn: Tom Cavanaugh
1325 J St.
Sacramento, CA 95814-6340

Regional Director
U.S. Fish and Wildlife Service
911 N.E. 11th Avenue
Portland, Oregon 97232

Wayne S. White, Field Supervisor
U.S. Fish and Wildlife Service, Ecological Services
Attn: Jerry Bielfeldt,
Sacramento Field Office
2800 Cottage Way, W-2605
Sacramento, CA 95825

Mike Acituno, Supervisor
U.S. National Marine Fisheries Service
Attn: Kelly Finn
650 Capital Mall, Suite 6066A
Sacramento, CA 95814

Area IV Conservationist
U.S. Natural Resources Conservation Service
1345 Main Street
Red Bluff, CA 96080

U.S. Dept. of Agriculture
Wetlands Reserve Program
430 G St. Suite 4164
Davis, CA 95616-4164

Environmental Clearance Officer
Department of Housing & Urban Development
450 Golden Gate Avenue
P.O. Box 36003
San Francisco, CA 94111

Director, Office of Environmental Affairs
U.S. Department of Interior
Main Interior Building, MS 2340
1849 C Street, NW
Washington, D.C. 20240

Director, Office of Environmental Compliance
U.S. Department of Energy
1000 Independence Ave., SW
Washington, D.C. 20585

Federal Railroad Administration
Office of Policy and Plans
4000 - 7th Street, SW
Washington, D.C. 20590

Regional Director
Federal Emergency Management
Region 9, Bldg. 105
Presidio, CA 94129

Compliance Office, **Advisory Council on Historic Preservation**
Washington, DC 20240

Chief, Airports Branch
Federal Aviation Administration
831 Mitten Road
Burlingame, CA 94010

District Chief
U.S. Geological Survey, WRD
2800 Cottage Way, Room W-2234
Sacramento, CA 95825

U.S. Dept. of Interior
Bureau of Mines
East 360 Third Ave.
Spokane, WA 99202-1413

John J. Reynolds, Regional Director
Pacific West Regional Office,
Regulatory Functions
ATTN: Alan Schmierer
National Park Service
1111 Jackson Street, Suite 700
Oakland, CA 94607

STATE AGENCIES

State Clearinghouse, Office of the Governor
Office of Planning and Research
1400 10th Street, Room 121
Sacramento, CA 95814

Director, **Department of Water Resources**
1416 Ninth Street
Sacramento, CA 95814

Executive Officer, **State Lands Commission**
1807 13th Street, Room 101
Sacramento, CA 95814

Director, **Department of Public Health Services**
744 P Street
Sacramento, CA 95814

Director
Department of Fish and Game
1416 Ninth Street
Sacramento, CA 95814

California Dept. of Fish and Game, Region 2
Banky Curtis, Regional Manager
Attn: Jeff Finn
1701 Nimbus Rd. Suite A
Rancho Cordova, CA 95670

Executive Officer, **State Water Resources Control Board**
901 P Street
Sacramento, CA 95814

Executive Officer, **Solid Waste Management Board**
1020 Ninth Street, Suite 300
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ACRONYMS

AADT	Average Annual Daily Traffic
AASHTO	American Association of State Highway and Transportation Officials
ACHP	Advisory Council on Historic Preservation
ACOE	U.S. Army Corps of Engineers
ACC/MVM	Accidents per million vehicle miles
ADT	Average Daily Traffic
APE	Area of Potential Effect
APCD	Air Pollution Control District
AQMD	Air Quality Management District
ASR	Archaeological Survey Report
BCAG	Butte County Association of Governments
BFE	Base Flood Elevations
BMP	Best Management Practices
CAA	Federal Clean Air Act
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CCAA	California Clean Air Act
CDFG	California Department of Fish and Game
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
Cal EPA	California Environmental Protection Agency
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CHP	California Highway Patrol
CMA	Congestion Management Agency
CMP	Congestion Management Plan
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Survey
CO	Carbon Monoxide
CSHC	California Streets and Highways Code
CTC	California Transportation Commission
CWA	Clean Water Act
dB	Decibel
dBA	A-weighted decibel
dBA Leq A-	weighted decibel equivalent sound level
DBH	Diameter at Breast Height measurement for trees.
DEIS	Draft Environmental Impact Statement

DHS	State of California Department of Health Services
DTSC	California Department of Toxic Substance Control
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
ESU	Evolutionary Significant Unit
FAA	Federal Aviation Administration
FCWA	Federal Clean Water Act
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
ft	Foot or feet
FTA	Federal Transit Administration
FWPCA	Federal Water Pollution Control Act
ha	Hectare or hectares
HABS	Historic American Building Survey
HAER	Historic American Engineering Record
HASR	Historic Architecture Survey Report
HOV	High Occupancy Vehicle
HPSR	Historic Properties Survey Report
HUD	Department of Housing and Urban Development
HWIS	Hazardous Waste Information System
ISA	Initial Site Assessment
km	Kilometer or kilometers
Leq	Equivalent Sound Level
LRT	Light Rail Transit
LTMS	Long-Term Management Strategy
LUST	Leaking Underground Storage Tank
m	Meter or meters
MCE	Maximum Credible Earthquake
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MPO	Metropolitan Planning Organization
MSL	Mean Sea Level
NAAQS	National Ambient Air Quality Standards
NAC	Noise Abatement Criteria
NEPA	National Environmental Policy Act
NES/BA	Natural Environment Study and Biological Assessment
NGVD	National Geodetic Vertical Datum

NMFS	National Marine Fisheries Service
NOI	Notice of Intent
NOx	Nitrogen Oxides
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NWP	Nationwide Permit
O3	Ozone
PA/SI	Preliminary Assessment/Site Investigation
Pb	Lead
PCB	Polychlorinated Biphenyl
PCE	Tetrachloroethene
PCM	Permanent Control Measures
PDT	Project Development Team
PM2.5	Particulate Matter with an Aerodynamic Diameter less than 2.5 Micrometers
PM10	Particulate Matter with an Aerodynamic Diameter less than Ten Micrometers
PPE	Personal Protective Equipment
ppm	Parts per Million
PS&E	Plans Specifications and Estimates
PSI	Preliminary Site Investigation
ROD	Record of Decision
RCRA	Resource Conservation and Recovery Act
RMP	Regional Monitoring Program
RTIP	Regional Transportation Improvement Program
RTP	Regional Transportation Plan
RWQCB	Central Valley Regional Water Quality Control Board
SARA	Superfund Amendments and Reauthorization Act
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SO2	Sulfur Dioxides
STIP	State Transportation Improvement Program
SVOC	Semi-Volatile Organic Compound
SWPPP	Storm Water Pollution Prevention Plan
TASAS	Traffic Accident Surveillance and Analysis System
TIP	Transportation Improvement Program
TMP	Transportation Management Plan
TPH	Total Petroleum Hydrocarbons
TRPH	Total Recoverable Petroleum Hydrocarbons
TSCA	Toxic Substance Control Act

TSM	Transportation Systems Management
ug/m3	Micrograms per Cubic Meter
ug/L	Micrograms per Liter
USC	United States Code
USCG	U.S. Coast Guard
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	Underground Storage Tank
VOC	Volatile Organic Compound
WWTP	Wastewater Treatment Plant

GLOSSARY

1601 Agreement An agreement pursuant to Section 1601 of the California Fish and Game Code between the Department of Fish and Game and a public agency, designed to protect the fish and wildlife values of a lake or stream. It is required whenever a proposed activity will substantially divert or obstruct the natural flow or changes the bed, channel or bank of any river, stream or lake designated by the Department of Fish and Game. A 1601 Agreement is also required if any material from the streambeds is used.

404 Permit The Corps of Engineers requires this permit for all projects that involve dredging or filling of lakes, streams, tidelands, marshes, or low-lying areas behind dikes or levees, as well as for disposal of dredged materials to any waterway or ocean.

Anadromous Migrating up rivers from the sea to breed in freshwater (*American Heritage Dictionary*, p. 106).

base floodplain elevation (BFE) The area subject to flooding by the base flood. The base flood is the flood or tide having a one percent chance of being exceeded in any given year (100 year flood).

Basin Plan A specific plan for control of water quality within one of the nine hydrologic basins of the State under the regulation of a Water Quality Control Board.

Beneficial Use A use of a natural water resource that enhances the social, economic, and environmental well-being of the user. Twenty-one beneficial uses are defined for the waters of California; they are listed and described below:

Agricultural Supply (ARG) – Includes crop, orchard, and pasture irrigation, stock watering support of vegetation for range grazing, and all uses in support of farming and ranching operations.

Preservation of Areas of Special Biological Significance (BIOL) – Such areas include marine life refuges, ecological or environmental reserves or preserves, areas where kelp propagation and maintenance require special protection, and formally designated Areas of Special Biological Significance.

Cold Freshwater Habitat (COLD) – Provides a cold water habitat to sustain aquatic resources associated with a cold water environment.

Ocean Commercial and Non-Fresh Water Sportfishing (COMM) – Includes the commercial collection of fish and shellfish, including those collected for bait, plus sportfishing in the oceans, bays, estuaries, and similar non-fresh water areas.

Fresh Water Replenishment (FRSH) – Provides a source of fresh water for replenishment of inland lakes and streams of varying salinity.

Ground Water Recharge (GWR) – Includes natural or artificial recharge for future extraction for beneficial uses and to maintain salt balance or halt saltwater intrusion into freshwater aquifers.

Industrial Service Supply (IND) – Includes uses which do not depend primarily on water quality, such as mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, and oil-well repressurization.

Marine Habitat (MAR) – Provides a water supply (and supports a vegetative habitat) for the maintenance of wildlife.

Fish Migration (MIGR) – Provides a migration route and temporary aquatic environment for anadromous or other fish species.

Municipal and Domestic Supply (MUN) – Includes usual uses in community or military water systems and domestic uses from individual water supply systems.

Navigation (NAV) – Includes commercial and naval shipping.

Hydroelectric Power Generation (POW) – Is that supply used for hydropower generation.

Industrial Process Supply (PROC) – Includes process water supply and all uses related to the manufacturing of products.

Preservation of Rare and Endangered Species (RARE) – Provides an aquatic habitat necessary, at least in part, for the survival of certain species established as being rare and endangered species.

Water-Contact Recreation (REC 1) – Includes all recreational uses involving actual body contact with water, such as swimming, wading, water-skiing, surfing, sport fishing, uses in therapeutic spas, and other uses where ingestion of water is reasonably possible.

Non-Contact Water Recreation (REC 2) – Covers recreational uses which involve the presence of water but do not require contact with water, such as picnicking, sunbathing, hiking, beachcombing, camping, pleasure boating, tidepool and marine life study, hunting, and aesthetic enjoyment in conjunction with the above activities as well as sightseeing.

Saline Water Habitat (SAL) – Provides an inland saline water habitat for aquatic and wildlife resources.

Shellfish Harvesting (SHEL) – The collection of shellfish such as clam, oysters, abalone, shrimp, crab, and lobster for sport or commercial purposes.

Fish Spawning (SPWN) – Provides a high-quality aquatic habitat especially suitable for fish spawning.

Warm Freshwater Habitat (WARM) – Provides a warm water habitat to sustain aquatic resources associated with a warm water environment.

Wildlife Habitat (WILD) – Provides a water supply and vegetative habitat for the maintenance of wildlife

Best Management Practice (BMP) Any program, technology, process, siting criteria, operating method, measure, or device that controls, prevents, removes, or reduces pollution.

Bypass An arterial highway that permits traffic to avoid all or part of a certain area such as an urban area or park.

CNPS California Native Plant Society. The California Native Plant Society produces an inventory of rare and endangered plants vascular plants of California. The inventory includes five lists which categorize the degree of concern for the plant, List 1A, 1B, 2, 3, and 4. Plants in List 1A, 1B and 2 are protected under Section 1901, Chapter 10 (Native Plant Protection Act) and Sections 2062 and 2067 of the California Endangered Species Act and are eligible for State listing. It is mandatory that they be fully considered during preparation of environmental documents relating to CEQA.

Chemical Oxygen Demand (COD) A monitoring test that measures all the oxidizable matter found in a runoff sample, a portion of which could deplete dissolved oxygen in receiving waters.

Conventional Highway A highway with no control of access (no control of access roads onto the highway) which may or may not be divided or have grade separations at interchanges.

Cooperating Agency (NEPA) A cooperating agency may be any other federal agency , other than the lead agency, that has jurisdiction by law or special expertise with respect to the environmental impacts expected to result from a proposal. (See also Responsible Agency)

Controlled Access Highway A freeway, as defined by statute, is a highway in which the owners of abutting lands have no right or easement of access to or from their abutting lands or where the adjacent landowners owners have only limited or restricted right or easement of access. A facility may be designated a "controlled access highway" in lieu of the designation "freeway".

Cumulative Effects The Council on Environmental Quality regulations for implementing the National Environmental Policy Act define cumulative effects as follows:

> *The impact on the environment which results from the incremental impact of the action when added to other past, present and reasonable foreseeable future actions regardless of what agency (Federal or non-federal) or person undertakes such other actions (40 CFR 1508.7).*

Design Speed A speed selected to establish specific minimum geometric design elements for a particular section of highway

Design Year The future year used to estimate the probable traffic volume for which a highway is designed. A time, 10 to 20 years, from the start of construction is usually used.

Detention Basin A basin, usually surrounded by a dike or levee, which holds stormwater runoff until the receiving waters are low enough for the contained water to be discharged.

Direct Effects [Impacts] Direct effects are caused by the action and occur at the same time and place. (40 CFR. 1508.8(a)) (See also Indirect Effects)

Discharge Instantaneous rate of flow expressed in terms of volume per unit time.

Draft EIR/EIS Draft Environmental Impact Report (State), Environmental Impact Statement (Federal)

Drainage Basin (drainage catchments) The area in which all storm water will accumulate into one given stream.

Ecosystem The total dynamic complex of a community of organisms and its controlling environment functioning as a unit.

Erosion The wearing away of the land surface by running water, wind, ice, or other geological agents.

Expressway An arterial highway with at least partial control of access, where limits are placed on number and types of intersecting streets, roads and driveways. An expressway may or may not be divided or have separations at intersections

Federal Register A federal publication which provides official notice of federal administrative hearings and issuance of proposed and final federal administrative rules and regulations.

Fishery A stream capable of supporting angling activities. Usually streams which show evidence of spawning and nursery grounds.

Freeway A divided arterial highway with full control of access and with grade separations at intersections.

Grade Separation Utilized when two roads intersect at different grades (vertical planes). Normally provided as part of an interchange; in lieu of an at-grade intersection.

ha hectares (acres **×** **.**40469 = hectares)

Habitat The place or type of site where a plant or animal naturally or normally lives and grows.

Highway A road without controlled access and may not necessarily have grade separations at intersections

Hydric Soil Soils that are saturated, flooded, or ponded long enough during the growing seasons to develop anaerobic conditions in the upper part (ACOE/EPA 1987 Manual).

Indirect Effects Indirect effects are caused by an action but occur later in time or are further removed in distance, but must be reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use; population density or growth rate; and related effects on air, water and other natural systems or ecosystems. (40 CFR 1508 (b))

Intermittent Stream A stream which flows only during part of the year, usually during wet weather.

Kjeldahl Nitrogen The total concentration of ammonia and organic nitrogen present, not including nitrates or nitrites.

Leq The equivalent steady-state sound level which in a stated period of time contains the same acoustic energy as the time-varying sound level during the same period.

Leq(h)...The hourly value of Leq

Level of Service **(LOS)** a measurement of the capacity of the roadway.

Median...The portion of a divided highway separating the traveled ways for traffic in opposite directions.

Mitigation-actions or project design features that reduce impacts on cultural, socioeconomic or natural resources by:

not taking a certain action or parts of action,

minimizing impacts by limiting the degree or magnitude of the action or its implementation,

rectifying the impact by repairing, rehabilitating or restoring the affected environment,

compensating for the impact by replacing or providing substitute resources or environments, or

reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.

NOD Notice of Determination, part of the CEQA process. It indicates that a project has been approved subject to the requirements of CEQA.

NOP Notice of Preparation, part of the CEQA process. Notice of intent to prepare an environmental impact report on a project.

NOI Notice of Intent, part of the NEPA process. A notice placed in the Federal Register to advise the public that an environmental impact statement will be prepared for a project.

Nonpoint Source A dispersed source of pollution that is not identifiable as to a specific location, but may be identified as contributing to water quality degradation from a tributary drainage area.

NPDES Construction Permit (National Pollutant Discharge Elimination System) – A permit regulated by the Regional Water Quality Control Board required if more than 2 ha (5 acres) of original ground is graded. One condition of this permit is that the contractor submit a Storm Water Pollution Prevention Plan (SWPPP), which is similar to the Water Pollution Control Plan required by Caltrans Standard Specification 7-1.01G.

Parkway An arterial highway for non-commercial traffic, with full or partial access control, and usually located within a park or ribbon of park like development.

Perennial Stream A stream with continuous year-round flow.

pH A measure of the hydrogen ion activity, which in dilute solution may be considered approximately equivalent to the hydrogen ion concentration.

PM_{10} Particulate matter less than 10 microns in diameter.

Point Source A source of pollution waste water that is emitted at a singular location, usually a conduit or drainage channel, at which both flow and quality can be determined. Also a source of air pollution emitted at a singular location.

Post Mile (P.M.) A method of identifying a location on the State Highway System using miles. When combined with the county and route, identifies unique locations along any State Route in terms of miles.

Project Development team (PDT) A multi-disciplinary group of individuals who guide a project's development; usually composed of members of Caltrans, FHWA, cooperating agencies, other agencies and the public.

Project Report A report providing preprogramming project information. The PSR describes the project, its scope and limits, costs and delivery schedule.

Responsible Agency Responsible agency means a public agency, other than the Lead Agency, which has responsibility for carrying out or approving a project under CEQA.

Retention Basin A basin that holds stormwater runoff without release except by means of evaporation, infiltration or emergency bypass.

Riparian Corridor A delimited area of riparian (moist soil) substrate, within whose boundaries riparian vegetation may grow and support associated wildlife species.

Riparian Pertaining to the banks and other adjacent terrestrial (as opposed to aquatic) environs of freshwater bodies, watercourses, estuaries, and surface-emergent aquifers (springs, seeps, oases) whose transported freshwater provides soil moisture sufficient in excess of that otherwise available through local precipitation to potentially support the growth of mesic vegetation.

ROD Record of Decision. A federal decision document under NEPA that explains why an alternative has been selected, summarizes mitigation and summarizes efforts made to minimize environmental impacts.

Route Concept Most likely facility on the route given present and future financial, planning and engineering factors.

Runoff – The storm water which is not absorbed into the ground.

Scoping...An activity of the lead agency in the environmental review process that ensures the inclusion of: (1) all significant issues; and (2) maximum participation for the development of the EIS/EIR.

Special Status Species Plants and animals that are protected by State or Federal governments. Listed below are the designations:

Federal

FPE Proposed for federal endangered listing

FE Endangered - Taxa in danger of extinction throughout all or a significant portion of its range.

FT Threatened

FPT Proposed for federal threatened listing

C Candidate species taxa for which the Fish and Wildlife Service has sufficient biological information to support a proposal to list as endangered or threatened.

State

SE State Endangered - The prospects for survival and reproduction of the taxa are in immediate jeopardy from one or more causes.

ST State Threatened - Although not presently threatened with extinction, it is likely to become an endangered species in the foreseeable future in the absence of special protection and management efforts.

SR State Rare - Although not presently threatened with extinction, it is in such small numbers throughout its present range that it may become endangered if its present environment worsens (applied to plants only).

CSC California Species Of Special Concern. These species face immediate extirpation in California if current trends continue. Although they have no special legal status, these species are given management consideration whenever possible.

California Native Plant Society (CNPS)

List 1B Rare, threatened or endangered in California and elsewhere

List 2 Rare, threatened or endangered in California but common elsewhere

List 3 A review list, more information is needed

List 4 A watch list, plants of limited distribution

Stochastic Involving or containing a random variable.

Suspended Solids The filterable fraction of the total solid present in water.

Total Dissolved Solids – The non-filterable fraction of the total solid present in water.

Turbidity- The measure of the resistance of water to the passage of light through it (Babbitt, Donald, p. 384).

Urban- **A**n area is considered urban if it has a population of 5000 or more for Federal-Aid purposes.

Waters of the United States As defined by the ACOE in 33 CFR §328.3(a):

1. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide,

2. All interstate waters including interstate wetlands,

3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce, including any such waters:

   (i) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or

   (ii) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or

   (iii) Which are used or could be used for industrial purposes by industries in interstate commerce,

4. All impoundment of waters otherwise defined as waters of the United States under this definition,

5. Tributaries of waters identified in paragraphs (1)-(4),

6. The territorial seas,

7. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (1)-(6).

Watershed The drainage basin contributing water, organic matter, dissolved nutrients, and sediments to a stream, estuary, or lake.

WET 2.0 Wetland Evaluation Technique, a methodology for the assessment of wetland functions and values.

Wetland Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas (33 CFR §328.3 (b)).

Zone A A floodplain determination where no base flood elevations have been determined.

Zone AE A floodplain determination where base flood elevations have been determined.

APPENDIX A LETTERS OF COOPERATION

- U.S. Fish and Wildlife Service per a letter dated June 14, 1994.
- U.S. Army Corps of Engineers per a letter dated March 9, 1990.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
Sacramento Field Office
2800 Cottage Way, Room E-1803
Sacramento, California 95825

In Reply Refer To:
PPN 626

June 14, 1994

Ms. Jean L. Baker, Chief Environmental Branch B
California Department of Transportation
District 3
P.O. Box 911
Marysville, CA 95901

Subject: EIS for Route 65 Bypass of the City of Lincoln, Placer County, California

Dear Ms. Baker:

The U.S. Fish and Wildlife Service (Service) has reviewed your request dated May 12, 1994 for Service participation as a cooperating agency on the subject proposed project. The Service has reviewed the proposed project and agrees to participate in the environmental impact statement development process as a cooperating agency.

Under the terms of the 1994 Memorandum of Understanding for Integration of NEPA and Clean Water Act Section 404 common elements (MOU), the Service will provide timely comments and concurrence or non-concurrence at the various planning stages established in the MOU. In order for the Service to successfully discharge our trust responsibilities and obligations under the MOU, we may require project information or request coordination meetings or field reviews with Caltrans and the other signatory agencies. Any additional major analyses or activities requested by the lead agency (California Department of Transportation) would require additional funding, to be provided under the existing contract between the Department of Transportation and the Service (Contract #43V176).

We request that the Department of Transportation provide the Service with a scope of work detailing the activities that will be required of the Service in our capacity as a cooperating agency for the proposed project.

If you have any further questions regarding these comments, please contact Kristi Young at 916/978-4866.

Sincerely,

Joel A. Medlin
Field Supervisor

cc: ARD-ES, Portland, OR
FHWA - Sacramento, CA

DEPARTMENT OF THE ARMY
SACRAMENTO DISTRICT CORPS OF ENGINEERS
650 CAPITOL MALL
SACRAMENTO, CALIFORNIA 95814-4794

REPLY TO
ATTENTION OF

March 9, 1990

Regulatory Section (9000168)

Ms. Jean L. Baker
State of California
Department of Transportation
P.O. Box 911
Marysville 95901

Dear Ms. Baker:

Your letter dated March 1, 1990 requesting the Corps of Engineers as a cooperating agency for the preparation of the Environmental Impact Statement/Environmental Impact Report (EIR/EIS) associated with the Lincoln Bypass has been received.

Because the Corps of Engineers must issue permits for this project in compliance with the Clean Water Act, we agree to participate in the preparation of the subject document as a cooperating agency. The person to contact in our Regulatory Section is Ms. Jean Elder. She may be contacted at the letterhead address, Room 6532, or by telephone at (916) 551-2270.

We look forward to working with the staff of the Department of Transportation on this project.

Sincerely,

Art Champ
Chief, Regulatory Section

APPENDIX B NOI AND NOP

- Notice of Intent (NEPA)
- Notice of Preparation (CEQA)

To date, the Department has not deemed it necessary and appropriate to prescribe the regulations contemplated by section 7. Recently, however, it has been suggested that the State Department should prescribe such regulations due to the potential impact of increased U.S. tourism to Antarctica. The purpose of this meeting is to seek the views of the Advisory Committee concerning whether, in light of increased U.S. tourism, section 7 regulations are now appropriate.

This session will be open to the public. The public will be admitted to the session to the limits of seating capacity and will be given the opportunity to participate in discussion according to the instructions of the Chairman. As access to the Department of State is controlled, persons wishing to attend the meeting should enter the Department through the Diplomatic ("C" Street) Entrance.

Requests for further information on the meetings or for advance clearance to enter the building, should be directed to R. Tucker Scully of OES/OA, room 5801, Department of State. He may be reached by telephone on (202) 647-3262.

Dated: June 15, 1990.

Richard J.K. Stratford,

Acting Chairman.

[FR Doc. 90-15001 Filed 6-27-90; 8:45 am]

BILLING CODE 4710-09-M

DEPARTMENT OF TRANSPORTATION

Office of Hearings

[Docket No. 46760]

Discovery Airways, Inc. and Mr. Philip Ho; Order Deferring Hearing

The hearing is this matter scheduled to begin on June 26, 1990, at 10 a.m., in room 5332, 400-7th Street SW., Washington, DC 20590 is postponed until further order.

Dated at Washington, DC, June 25, 1990.

Ronnie A. Yoder,

Administrative Law Judge.

[FR Doc. 90-15136 Filed 6-26-90; 10:10 am]

BILLING CODE 4910-62-M

Federal Highway Administration

Environmental Impact Statement: City of Lincoln, Placer County, CA

AGENCY: Federal Highway Administration (FHWA), DOT.

ACTION: Notice of intent.

SUMMARY: The FHWA is issuing this notice to advise the public that an environmental impact statement will be prepared for a proposed highway project in Placer County, California.

FOR FURTHER INFORMATION CONTACT: John R. Schultz, District Engineer, Federal Highway Administration, P.O. 1915, Sacramento, California 95812-1915, Telephone: (916) 551-1140.

SUPPLEMENTARY INFORMATION: The FHWA, in cooperation with the California Department of Transportation (Caltrans), will prepare an environmental impact statement (EIS) on a proposal to construct a State Route 65 bypass of the City of Lincoln and the Community of Sheridan in Placer County.

The proposal will improve local and interregional traffic circulation and safety by providing a bypass facility that will remove State highway traffic from the business district of Lincoln, and an at-grade railroad crossing in Sheridan. The ultimate four-lane freeway will be from 5.3 to 12.0 miles in length depending on the selected alternative.

Alternatives for this project presently consist of: (1) No project, and (2) constructing one of four bypass alignment alternatives.

An informal public informational meeting was held in Lincoln on May 1, 1990 to discuss the project with local citizens and interested parties and to identify any concerns or issues.

Additional scoping meetings will be arranged with all responsible/cooperating agencies and with special interest groups upon request. In addition at the time of draft EIS circulation, a public hearing will be held. Public notice will be given as to the time and place of the hearing.

To ensure that the full range of issues related to this proposed action are addressed and all significant issues are identified, comments and suggestions are invited from all interested parties. Comments or questions concerning this proposed action and the EIS should be directed to the FHWA at the address previously provided in this document.

(Catalog of Federal Domestic Assistance Program Number 20.205, Highway Research, Planning, and Construction. The regulations implementing Executive Order 12372 regarding intergovernmental consultation of Federal Programs and activities apply to this program.)

Issued on: June 20, 1990.

C. Glenn Clinton,

District Engineer, Sacramento, California.

[FR Doc. 90-15014 Filed 6-27-90; 8:45 am]

BILLING CODE 4910-22-M

National Highway Traffic Safety Administration

[Docket No. 90-IP-12-NO. 1]

Mazda Research & Development of North America, Inc.; Receipt of Petition for Determination of Inconsequential Noncompliance

Mazda Research & Development of North America, Inc. (Mazda), of Ann Arbor, Michigan, has petitioned to be exempted from the notification and remedy requirements of the National Traffic and Motor Vehicle Safety Act (15 U.S.C. 1381 *et seq.*) for an apparent noncompliance with 49 CFR 571.120, Federal Motor Vehicle Safety Standard No. 120, "Tire Selection and Rims for Motor Vehicles Other Than Passenger Cars," on the basis that it is inconsequential as it relates to motor vehicle safety.

This notice of receipt of a petition is published under Section 157 of the National Traffic and Motor Vehicle Safety Act (15 U.S.C. 1417) and does not represent any agency decision or other exercise of judgement concerning the merits of the petition.

Paragraph S5.1.2 of Standard No. 120 states that:

> Except in the case of a vehicle which has a speed attainable in 2 miles of 50 mph or less, the sum of the maximum load ratings of the tires fitted to an axle shall be not less than the gross axle weight rating (GAWR) of the axle system as specified on the vehicle's certification label required by 49 CFR part 567. If the certification label shows more than one GAWR for the axle system, the sum shall be not less than the GAWR corresponding to the size designation of the tires fitted to the axle. If the size designation of the tires fitted to the axle does not appear on the certification label, the sum shall be not less than the lowest GAWR appearing on the label. When a tire listed in appendix A of Standard No. 109 is installed on a multipurpose passenger vehicle, truck, bus, or trailer, the tire's load rating shall be reduced by dividing by 1.10 before calculating the sum.

Mazda produced 14,607 B2200 and B2600i (4×2) models which do not comply with Paragraph S5.1.2. These vehicles were produced between September 7, 1989 and May 25, 1990 and were equipped with tire placards bearing the incorrect English equivalent (as opposed to metric) cold inflation pressure information. The correct English equivalent cold inflation pressure is 35 psi; the inflation pressure listed on these placards is 34 psi. Therefore, the load rating on these tires is reduced by dividing by 1.096 before calculating the sum instead of being reduced by dividing by 1.10. Mazda

APPENDIX C LETTERS RESPONDING TO NOTICE OF INTENT AND NOTICE OF PREPARATION

Federal:

- U.S. Dept. of Interior, Bureau of Mines. Robert Weldin, Chief Branch of Resource Evaluation. July 12, 1990
- U.S. Dept. of Interior, Bureau of Mines. Robert Weldin, Chief Branch of Resource Evaluation. August 2, 1990
- U.S. Dept. of Interior, Bureau of Indian Affairs. George Farris. July 24, 1990

State:

- State Clearinghouse, Office of Planning and Research. June 27, 1990
- CA Dept. of Boating and Waterways, Williams Ivers, Director. July 6, 1990
- Sacramento Area Council of Governments, Michael Hoffacker, Executive Director. July 10, 1990
- California Regional Water Quality Control Board, Central Valley Region, July 12, 1990
- CA Dept. of Fish and Game, James Messersmith, Regional Manager. July 23, 1990

County:

- Placer County Dept. of Public Works, Jack Warren. July 25, 1990

Letters to Officials:

- Letter to Representative Shumway, July 21, 1990

United States Department of the Interior

BUREAU OF MINES

WESTERN FIELD OPERATIONS CENTER
EAST 360 3RD AVENUE
SPOKANE, WASHINGTON 99202-1413

TAKE PRIDE IN AMERICA

600

July 12, 1990

Ms. Jean L. Baker
Caltrans, District 3
P.O. Box 911
Marysville, California 95901

Dear Ms. Baker:

SUBJECT: ENVIRONMENTAL IMPACT REPORT/STATEMENT (EIR/EIS) FOR THE LINCOLN BYPASS PROJECT, STATE ROUTE 65, PLACER COUNTY, CALIFORNIA

The U.S. Bureau of Mines is a nonregulatory agency and therefore has no permit requirements for this or any other Caltrans project. Our role in the NEPA process is to review environmental documents and provide information and assistance in our area of expertise (mineral resources). Since NEPA recognizes minerals as a resource which needs to be considered in all environmental documents, any potential impacts to present or future mineral exploration and development must be addressed in this EIR/EIS.

Enclosed for your information is a one-line printout showing mineral locations from our Mineral Industry Location System (MILS) that occur within the immediate project area. Also enclosed is a printout of BLM's mineral claim information as of April 6, 1990. Plotting this information reveals that former alternative E has the greatest potential to impact present and future mineral resource activity. If this alternative is reconsidered, restriction impacts that this highway corridor will have on clay resources in sections 3, 4, 9, and 10, and possible placer gold resources in sections 11, 14, and 23 should be thoroughly discussed. Currently active claims in sections 21, 28, and 29, southwest of Lincoln, are in proximity to alternatives A3, D1, and D2. Potential mineral resources and conflicts with preexisting mineral rights should be investigated in this area.

Local gravel sources, in areas where past or present placer gold activity is known or suspected, should be tested by Caltrans for possible placer gold content if this gravel will be used during the construction phase of the project. If economical concentrations can be verified, they could be separated from the gravel as a byproduct during washing, screening, and sizing and used to help pay project costs. A statement should be included in the EIR/EIS reflecting the desirability of a placer evaluation.

If you have any questions or concerns or need technical assistance to evaluate these potential resources, please call Michael D. Dunn (509) 353-2664. He will be the contact person for our agency.

Sincerely,

Robert D. Weldin, Chief
Branch of Resource Evaluation

Enclosures (2)

F-10

REPORT DATE: APR 6, 1990 — UNITED STATES DEPARTMENT OF THE INTERIOR — PAGE NO: 676
ADMINISTRATIVE STATE: CALIFORNIA — BUREAU OF LAND MANAGEMENT — PCN: LTINDEP1

GEOGRAPHIC INDEX
ALL CLAIMS

MERIDIAN: MOUNT DIABLO

-LEGAL DESCRIPTION- TWNSHP	RANGE	SEC	SUBDIV	QTY	DIST	SERIAL NO.	CASE TYPE	CLAIM NAME/NUMBER	CLAIMANT(S)	LEAD FILE	COUNTY BOOK/PAGE	LOCATION DATE	LATEST ASSMT-YR	CASE CLOSED
6 N	6 E	36	NW		1	99989	PL	DOUBLE EAGLE #1	WALTON DONALD E STONER BARBARA	99989	69:152	7/15/1901	1983	
7 N	6 E	25		67		149185	LD	LUCKY LADY #1	DE CARLI WILLIAM LUDDEN RUTH		1721:563	12/05/1983	0000	8/08/1985
				67		149186	LD	LUCKY LADY #2	DE CARLI WILLIAM LUDDEN RUTH		1721:565	12/05/1983	0000	8/08/1985
9 N	6 E	2	NE	67		98439	LD	BARBARA #6						
		26	SE	67		98440	LD	3 R-1						
			NE	67		98466	LD	3 R-2		98466	0:0	6/25/1901	0000	
10 N	6 E	32	SW	67		36178	PL	LITTLE RED CAP	ESTATE OF SCHEFFLER SCHEFFLER ROSE G	36178	173:697	6/15/1951	1989	
			NE	67		36177	LD	LITTLE RED CAP FRAC	ESTATE OF SCHEFFLER SCHEFFLER ROSE G	36178	173:699	6/15/1951	1989	
11 N	6 E	4	NE	61		13487	PL	LITTLE BRODERIT	CURRY STEVEN HUNSEN DAVID H JR HUNSEN CYNTHIA	13487	248:310	7/02/1935	1982	3/13/1986
			NE	61		13539	PL	KETBORE	CURRY STEVEN HUNSEN DAVID H JR HUNSEN CYNTHIA	13487	10:156	10/27/1944	1982	3/13/1986
				9 SW	61		144852	PL	BABU 3	HOLLY CHARLES BONDETTA JOHN KELDER KENNETH	144852	898:3718	4/02/1985	0000	
				27 NE	61		61344	LD	BIG MAC	CONNELLY MIKE		602:736	9/03/1980	1981	
12 N	6 E	14	NW		61		63903	PL	MILLENNIUM #26	CONNER JEROME	63898		2/27/1980	0000	6/09/1986
			NW		61		63904	PL	MILLENNIUM #27		63898		2/27/1980	0000	6/09/1986
		15	NE		61		63901	PL	MILLENNIUM #24		63898		2/27/1980	0000	6/09/1986
			SW		61		63902	PL	MILLENNIUM #25		63898		2/27/1980	0000	6/09/1986
		21	NW		61		154896	PL	HARD PAN #4	HAVEY ROBERT HAVEY MADELAINE	154896	836:0400	6/18/1984	1985	
			SW		61		154897	PL	HARD PAN #5	HAVEY ROBERT HAVEY MADELAINE	154896	835:0400	6/18/1984	1985	
		29	NE		61		154365	PL	LUTHER EXTENTION	MURPHY DRILLING CO MURPHY DAVID	154365	1 :00	8/25/1984	1986	
			30		61		33515	LD	MCKOON #1	FERGUSON WILLIAM FERGUSON LYDIA		99:391	7/08/1979	1981	7/29/1986
				NE	61		63917	PL	MILLENNIUM #20	CONNER JEROME	63898		2/27/1980	0000	6/09/1986
		35	SW		61		63917	PL	MILLENNIUM #20		63898		2/27/1980	0000	6/09/1986
				SW	61		63918	PL	MILLENNIUM #21		63898		2/27/1980	0000	6/09/1986
				NE	61		63919	PL	MILLENNIUM #22		63898		2/27/1980	0000	6/09/1986
13 N	6 E	5	SW	61		30379	PL	ORCHID #8	CAROUBO NICHOLAS CAROUBO BARBARA HEDIN ROSE MARY ORCHID MINES	30378	99:.31	5/18/1979	1989	

* * DISCLOSURE * * ALL INFORMATION RECEIVED IN THIS OFFICE MAY NOT YET BE LISTED ON THIS REPORT. NAMES AND ADDRESSES ARE ENTERED AS THEY APPEAR ON THE LOCATION NOTICE OR ARE ABBREVIATED TO FIT LIMITED SPACE; THEREFORE THEY MAY NOT APPEAR IN THE EXPECTED SEQUENCE. A BLANK LATEST ASSESSMENT YEAR IN THIS REPORT DOES NOT CONSTITUTE AN ABANDONED CLAIM. A AFTER S/N INDICATES LAND STATUS CHECKED.

G-10

REPORT DATE: APR 6, 1990 — UNITED STATES DEPARTMENT OF THE INTERIOR — PAGE NO: 677
ADMINISTRATIVE STATE: CALIFORNIA — BUREAU OF LAND MANAGEMENT — PCN: LTINDEP1

GEOGRAPHIC INDEX
ALL CLAIMS

MERIDIAN: MOUNT DIABLO

-LEGAL DESCRIPTION- TWNSHP	RANGE	SEC	SUBDIV	QTY	DIST	SERIAL NO.	CASE TYPE	CLAIM NAME/NUMBER	CLAIMANT(S)	LEAD FILE	COUNTY BOOK/PAGE	LOCATION DATE	LATEST ASSMT-YR	CASE CLOSED
13 N	6 E	8	SW	61	1	30378	PL	ORCHID #1	CAROUBO NICHOLAS CAROUBO BARBARA	30378	99:435	5/17/1979	1989	
			NE	61		70915	PL	PACK RAT #1	CARTHER DONALD CARTHER TERRIE	70915	101:6880	6/15/1980	1989	
			NE	61		70916	PL	PACK RAT #2	CARTHER DONALD CARTHER TERRIE	70915	101:6880	6/15/1980	1989	
		14		61		207622	PL	LUCKEY STRIKE #1	STEFFLER ROB CHITOFFELD BARRY		128:316	6/11/1988	0000	
		27	NE	61		31603	PL	FOX FLK			99:632	8/10/1979	1984	10/19/1988
			NE	61		206972	LD	MEXICON #7A	CHARRIE DON	77728	102:700	11/10/1980	1988	3/27/1987
14 N	6 E	31		115		70308	PL	MOOP	RUBALCAVA ROBERT BURROWS KEN C	206972	120:97	5/01/1980	1989	
				61					BURROWS MARY	70308	101:362	5/11/1980	0000	
		32		61		70308	PL	MOOP	BURROWS KEN C BURROWS MARY	70308	101:362	5/11/1980	0000	
15 N	6 E	2	NE	57		77626	LD	WILD GOOSE #17	WILD GOOSE MINING CO	77605	436:0	10/08/1980	1982	
				115										
			NW	57		77623	LD	WILD GOOSE #22		77605	440:0	10/09/1980	1982	
				115										
		3	NW	115		77605	LD	WILD GOOSE #2		77605	436:0	10/08/1980	1982	
			NW	115		77606	LD	WILD GOOSE #3		77605	436:0	10/08/1980	1982	
			SE	115		77607	LD	WILD GOOSE #4		77605	436:0	10/08/1980	1982	
			NE	115		77608	LD	WILD GOOSE #5		77605	436:0	10/08/1980	1982	
			SW	115		77610	LD	WILD GOOSE #7		77605	436:0	10/08/1980	1982	
			NW	115		77611	LD	WILD GOOSE #8		77605	436:0	10/08/1980	1982	
			E2	115		77612	LD	WILD GOOSE #9		77605	436:0	10/08/1980	1982	
			NE	115		77613	LD	WILD GOOSE #10		77605	436:0	10/08/1980	1982	
			NE	115		77614	LD	WILD GOOSE #11		77605	436:0	10/08/1980	1982	
			SE	115		77615	LD	WILD GOOSE #12		77605	444:0	10/09/1980	1982	
			SW	115		77616	LD	WILD GOOSE #13		77605	440:0	10/09/1980	1982	
			E2	115		77617	LD	WILD GOOSE #14		77605	436:0	10/08/1980	1982	
			E2	115		77618	LD	WILD GOOSE #15		77605	436:0	10/08/1980	1982	
			NE	115		77621	LD	WILD GOOSE #18		77605	436:0	10/08/1980	1982	
			NE	115		77622	LD	WILD GOOSE #19		77605	436:0	10/08/1980	1982	
		11	SW	57		63877	PL	KINGS BAR #1	JOHNSON NEDA JO JOHNSON EARL	63877	100:329	1/01/1980	0000	1/25/1989
		12	NE	57		57191	LD	Y N CLAIM GROUP #1	ROBERT ROBERT W WALTER TIMOTHY G	57190	99:663	8/07/1979	0000	8/08/1981
			NE	57		57190	LD	TN CLAIM GROUP #4	ROBERT ROBERT R WALTER TIMOTHY G	57190	99:663	8/07/1979	0000	8/08/1981
			NE	57		109984	LD	L 0 #5	GEORGE LYNN MACK DEBBIE	109984	0:0	10/16/1981	0000	1/31/1988
			NE	57		109985	LD	L 0 #6	GEORGE LYNN MACK DEBBIE	109984	0:0	10/16/1981	0000	1/31/1988
			NE	57		109986	LD	L 0 #5	GEORGE LYNN MACK DEBBIE	109984	0:0	10/16/1981	0000	1/31/1988

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H-10

REPORT DATE: APR 6, 1990 — UNITED STATES DEPARTMENT OF THE INTERIOR — PAGE NO: 678
ADMINISTRATIVE STATE: CALIFORNIA — BUREAU OF LAND MANAGEMENT — PCN: LTINDEP1

GEOGRAPHIC INDEX
ALL CLAIMS

MERIDIAN: MOUNT DIABLO

-LEGAL DESCRIPTION- TWNSHP	RANGE	SEC	SUBDIV	QTY	DIST	SERIAL NO.	CASE TYPE	CLAIM NAME/NUMBER	CLAIMANT(S)	LEAD FILE	COUNTY BOOK/PAGE	LOCATION DATE	LATEST ASSMT-YR	CASE CLOSED
15 N	6 E	12	SE		1	109985	LD	L 0 #5	MACK DEBBIE	109984	0:0	10/16/1981	0000	1/31/1988
			SE	57		109986	LD	L 0 #6	GEORGE LYNN	109984	0:0	10/16/1981	0000	1/31/1988
			SW	57		109984	PL	SBM 1						
		13	NE	57		57191	LD	Y N CLAIM GROUP #1	BE GRAND MARLENE	109984	1 :00	6/11/1980	1989	
			NE	57		57190	LD	TN CLAIM GROUP #4						
			E2	57		57190	LD	TN CLAIM GROUP #5		57190	99:663	8/07/1979	0000	8/08/1981
			NE	57		57190	LD	TN CLAIM GROUP #6		57190	99:663	8/07/1979	0000	8/08/1981

	NAM	TWN	RNG	SE	SUB	CUR	TYP
35	CLAY CORP OF CALIFORNIA	012 N	006 E	9	NW	PAST PRODUCER	SURFACE
38	DREDGED AREA	012 N	006 E	23	NWNENW	UNKNOWN	PLACER
91	DREDGE TAILINGS	012 N	006 E	12	N2	PAST PRODUCER	PLACER
92	NEW BACCARAT	012 N	006 E	23	C	UNKNOWN	PLACER
93	GLADDING MC BEAN & CO	012 N	006 E	9	SW	PAST PRODUCER	SURFACE
95	E.M. KAUFIELD	012 N	006 E	11	C	UNKNOWN	UNKNOWN
33	UNNAMED LOCATION	012 N	006 E		C	PAST PRODUCER	UNDERGROUNI
50	LINCOLN PITS AND MILL	012 N	006 E	9	NESESE	PRODUCER	SURFACE
53	FERRARI PROPERTY	012 N	006 E	14	C	PAST PRODUCER	PLACER
53	FERRARI PROPERTY	012 N	006 E	14	C	PAST PRODUCER	PLACER
79	LINCOLN ROCK QUARRY	012 N	006 E	14	NESESE	PRODUCER	SURFACE
81	LINCOLN CLAY PRODUTS CO	012 N	006 E	9	NE	PRODUCER	PROC PLANT

	NAM	TWN	RNG	SE	SUB	CUR	TYP
2	SHERIDAN PLANT	013 N	005 E	14		PRODUCER	SURFACE

	NAM	TWN	RNG	SE	SUB	CUR	TYP
2	VIRGINIA PLACER CO	013 N	006 E	13	W2W2W2	PAST PRODUCER	SURFACE
3	UNNAMED LOCATION	013 N	006 E	14	C	UNKNOWN	PLACER
4	C N CHITTENDEN LEASE	013 N	006 E	15	W2W2W2	PAST PRODUCER	SURFACE
5	DREDGED AREA	013 N	006 E	16	SESE	PAST PRODUCER	PLACER
6	OAKWOOD PLACER MINING CO	013 N	006 E	23	C	PAST PRODUCER	PLACER
7	BIG BEN CONS	013 N	006 E	25	C	UNKNOWN	UNDERGROUND
8	LINCOLN GOLD DREDGING CO	013 N	006 E	35	C	PAST PRODUCER	PLACER
0	VALLEY VIEW	013 N	006 E	13	SE	PAST PRODUCER	SURF-UNDERG
0	VALLEY VIEW	013 N	006 E	13	SE	PAST PRODUCER	SURF-UNDERG
0	VALLEY VIEW	013 N	006 E	13	SE	PAST PRODUCER	SURF-UNDERG
0	VALLEY VIEW	013 N	006 E	13	SE	PAST PRODUCER	SURF-UNDERG
0	VALLEY VIEW	013 N	006 E	13	SE	PAST PRODUCER	SURF-UNDERG
1	KILAGA SPRINGS	013 N	006 E	13	C	UNKNOWN	UNDERGROUND
6	GLADDING RANCH	013 N	006 E	29	C	PAST PRODUCER	PLACER
4	HOTALING IRON MINE	013 N	006 E	15	W2NW	PAST PRODUCER	UNDERGROUND
6	ROSS PROPERTY	013 N	006 E	15	C	PAST PRODUCER	PLACER

JRS Wishman

United States Department of the Interior

BUREAU OF MINES

WESTERN FIELD OPERATIONS CENTER
EAST 360 3RD AVENUE
SPOKANE, WASHINGTON 99202-1413

August 2, 1990

Mr. John R. Schultz
District Engineer
Federal Highway Administration
P.O. Box 1915
Sacramento, California 95812-1915

Dear Mr. Schultz:

SUBJECT: NOTICE OF INTENT TO PREPARE AN ENVIRONMENTAL IMPACT STATEMENT FOR SR-65, LINCOLN/SHERIDAN BYPASS, PLACER COUNTY, CALIFORNIA (ER 90/634)

A review of the Bureau of Mines Mineral Industry Location System (MILS) database shows at least five mineral properties in or near the area of the proposed highway project. One is a zircon past producer near Lincoln, in T. 12 N., R. 6 E. Three clay properties are located in section 9, T. 12 N., R. 6 E., and a sand and gravel operation is in section 14, T. 13 N., R. 5 E.

An assessment should be made of the impacts this project will have on continued or future development and utilization of these resources. The results should be included in the Environmental Impact Statement.

Sincerely,

for Robert D. Weldin, Chief
Branch of Resource Evaluation

Don VK

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
WASHINGTON, D.C. 20245

TAKE PRIDE IN AMERICA

IN REPLY REFER TO:

JUL 24 1990

AREA DIRECTOR
ASST. AD. RES.
ASST. AD. ADMIN
ROUTE 2 Opp
RE
8/13
MEMO
TELL

Memorandum

To: Sacramento Area Office
Attn: Don Knapp

From: Chief, Environmental Services Staff

Subject: Notice of Intent to Prepare an Environmental Impact Statement for SR-65 Lincoln/Sheridan Bypass, Placer County, California (ER 90/634)

Provide technical assistance and/or participate from your area of special expertise and/or jurisdiction to the person listed in the notice. If involvement appears significant, your office should participate in the follow-up activities.

If you agree to participate as a joint lead or as a cooperating agency provide this office and the Director, Office of Environmental Affairs with a copy of that commitment.

George R. Farris

Attachment

☒ NO INDIAN LANDS UNDER THE JURISDICTION OF THIS OFFICE ARE INVOLVED

☐ NO COMMENTS

BUREAU OF INDIAN AFFAIRS - SACRAMENTO AREA OFFICE
2800 COTTAGE WAY - SACRAMENTO, CALIFORNIA 95825

8-24-90
DATE

NATURAL RESOURCES SPECIALIST

FICE OF PLANNING AND RESEARCH
TENTH STREET
AMENTO, CA 95814

DATE: June 27, 1990

TO: Reviewing Agencies

RE: The California Department of Transportation's NOP for Route 65 Bypass of Lincoln
SCH# 90020626

Attached for your comment is the California Department of Transportation's Notice of Preparation of a draft Environmental Impact Report (EIR) for the Route 65 Bypass of Lincoln.

Responsible agencies must transmit their concerns and comments on the scope and content of the EIR, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of this notice. We encourage commenting agencies to respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

Daryl Noble
Ca Dept of Transportation
P.O. Box 911
Marysville, CA 95901

with a copy to the Office of Planning and Research. Please refer to the SCH number noted above in all correspondence concerning this project.

If you have any questions about the review process, call Lynne Coughlin at (916) 445-0613.
Sincerely,

David C. Nunenkamp
Deputy Director, Permit Assistance

Attachments

cc: Lead Agency

agency

g & Waterways

A 95814

way
tal Commission
eet, 4th Floor
CA 94105

an
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, Suite 1100
4612

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et, Room 1326-2
A 95814

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vation & Dev't. Comm.
enue, Room 2011
CA 94102

Resources
et, Room 215-4
95814

Fish and Game - *Regional Offices*

☐ Gary Stacey, Regional Manager
Department of Fish and Game
601 Locust
Redding, CA 96001
916/225-2300 (8-442)

☒ Jim Messersmith, Regional Manager
Department of Fish & Game
1701 Nimbus Road, Suite A
Rancho Cordova, CA 95670
916/355-0922 (8-438)

☐ B. Hunter, Regional Manager
Department of Fish and Game
P.O. Box 47
Yountville, CA 94599
707/944-5518

☐ G. Nokes, Regional Manager
Department of Fish and Game
1234 East Shaw Avenue
Fresno, CA 93710
209/222-3761 (8-421)

☐ Fred A. Worthley, Jr., Reg. Manager
Department of Fish and Game
330 Golden Shore, Suite 50
Long Beach, CA 90802
213/590-5113 (8-635)

Independent Commissions

☐ John R. Nuffer
California Energy Commission
L9I6 Ninth Street, MS-15
Sacramento, CA 95814
916/323-9180

☒ William A. Johnson
Native American Heritage Comm.
915 Capitol Mall, Room 288
Sacramento, CA 95814
916/322-7791

☐ George Hersh
Public Utilities Commission
505 Van Ness Avenue
San Francisco, CA 94102
415/557-1375 (8-597)

☒ Ted Fukushima
State Lands Commission
1807 - 13th Street
Sacramento, CA 95814
916/322-7813

Business, Transportation, & Housing

☐ Sandy Hesnard
Caltrans - Division of Aeronautics
P.O. Box 942874
Sacramento, CA 94274-0001
916/324-1833

☐ Sgt. Jim Weddell
California Highway Patrol
Long Range Planning Section
Planning and Analysis Division
2555 First Avenue
Sacramento, CA 95818
916/445-1981

☐ George Smith
Caltrans - Planning
P.O. Box 942874
Sacramento, CA 94274-0001
916/445-5570

Department of Transportation
District Contacts

☐ Jo Sanford
Caltrans, *District 1*
1656 Union Street
Eureka, CA 95501
707/445-6671 (8-538)

☐ Michelle Gallagher
Caltrans, *District 2*
1657 Riverside Drive
Redding, CA 96001
916/225-3259 (8-442)

☐ Brian J. Smith
Caltrans, *District 3*
703 B Street
Marysville, CA 95901
916/741-4277 (8-457)

☐ Wade Green
Caltrans, *District 4*
P.O. Box 7310
San Francisco, CA 94120
415/557-9162 (8-597)

☐ Jerry Laumer
Caltrans, *District 5*
P.O. Box 8114
San Luis Obispo, CA 93403-8114
805/549-3161 (8-629)

☐ Laven Fairchild
Caltrans, *District 6*
P.O. Box 12616
Fresno, CA 93778
209/276-5989 (8-422)

☐ Gary McSweeney
Caltrans, *District 7*
120 South Spring Street
Los Angeles, CA 90012
213/620-2376 (8-640)

☐ Harvey Sawyer
Caltrans, *District 8*
247 West Third Street
San Bernardino, CA 92403
714/383-4808 (8-670)

☐ Andy Zellman
Caltrans, *District 9*
500 South Main Street
Bishop, CA 94514
619/872-0693 (8-627)

☐ Al Johnson
Caltrans, *District 10*
P.O. Box 2048
Stockton, CA 95201
209/948-7838 (8-423)

☐ Jim Cheshire
Caltrans, *District 11*
P.O. Box 85406
2829 Juan Street
San Diego, CA 92138-5406
619/237-6755 (8-631)

☐ Chuck Limon
Caltrans, *District 12*
2501 Pullman St.
Santa Ana, CA 92705
714/724-2061 (8-655)

Food and Agriculture

☐ Vashek Cervinka
Dept. of Food and Agriculture
1220 N Street, Room 104
Sacramento, CA 95814
916/322-5227

Health & Welfare

☒ Quy Tu
Dept. of Health
714 P Street, Room 1253
Sacramento, CA 95814
916/323-6111

☐ DHS/TSCD: _____

_____

_____

State and Consumer Services

S Robert Sleppy
Dept. of General Services
400 P Street, Suite 3460
Sacramento, CA 95814
916/324-0214

Environmental Affairs

S Bob Fletcher
Air Resources Board
1102 Q Street
Sacramento, CA 95814
916/322-8267

☐ Jeannie Blakeslee
Calif. Waste Management Board
1020 Ninth Street, Room 300
Sacramento, CA 95814
916/327-0454

State Water Resources Control Board

☐ Allan Pulim
State Water Resources Control Board
Division of Loans & Grants
P.O. Box 944212
Sacramento, CA 94244-2120
916/739-4414

☐ Dave Beringer
State Water Resources Control Board
Delta Unit
P.O. Box 2000
Sacramento, CA 95810
916/322-9870

☒ Ed Anton
State Water Resources Control Board
Division of Water Quality
P.O. Box 100
Sacramento, CA 95801
916/445-9552

☐ Mike Falkenstein
State Water Resources Control Board
Division of Water Rights
901 P Street
Sacramento, CA 95814
916/324-5636

☒ APCD/AQMD: _____

_____

_____

Regional Water Quality

☐ NORTH COAST
1440 Guerneville
Santa Rosa, CA 9
707/576-2220 (8-5

☐ SAN FRANCISC
1111 Jackson Stree
Oakland, CA 9460
415/464-1255 (8-5

☐ CENTRAL COAS
1102-A Laurel La
San Luis Obispo, C
805/549-3147 (8-6

☐ LOS ANGELES
101 Center Plaza D
Monterey Park, CA
213/620-4460 (8-6

S CENTRAL VALL
3443 Routier Road
Sacramento, CA 9
916/361-5600

○ Fresno Br
3614 East A
Fresno, CA
209/445-51

○ Redding B
100 East Cy
Redding, C
916/224-48

☐ LAHONTAN RE
2092 Lake Tahoe B
P.O. Box 9428
South Lake Tahoe,
916/544-3481

○ Victorville
15428 Civ
Victorville,
619/241-65

☐ COLORADO RIV
73-271 Highway 1
Palm Desert, CA 9
619/346-7491

☐ SANTA ANA RE
6809 Indiana Aven
Riverside, CA 925
714/782-4130 (8-6

☐ SAN DIEGO RE
9771 Clairemont M
San Diego, CA 92
619/265-5114 (8-6

OTHER: _____

S Housin

_____

OTHER: _____

☐

_____

CALIFORNIA—THE RESOURCES AGENCY GEORGE DEUKMEJIAN, *Governor*

TMENT OF BOATING AND WATERWAYS
REET
ITO, CA 95814-7291
281

July 6, 1990

Ms. Jean L. Baker
Caltrans, District 3
P.O. Box 911
Marysville, CA 95901

Dear Ms. Baker:

The Department of Boating and Waterways has no comment on the Department of Transportation's Notice of Preparation of a draft Environmental Impact Report/Statement for the proposed relocation of State Route 65 on a new right-of-way around the City of Lincoln and, depending on the alternative ultimately selected, the unincorporated community of Sheridan.

However, we would like to receive a copy of the draft Environmental Impact Report/Statement when it becomes available.

Thank you for the opportunity to review the above mentioned document.

Sincerely,

WILLIAM H. IVERS
Director

cc: State Clearinghouse

SACOG

ramento Area
Council of Governments

06 "K" Street, Suite 200
acramento, California 95814
16) 441-5930
AX # (916) 441-5006

ailing Address:
O. Box 808
acramento, CA 95812-0808

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ouncilman
ity of Folsom

EORGE P. DeMARS (V. Chairman)
upervisor
ounty of Yolo

EORGE DEVERAUX
upervisor
ounty of Yuba

AY JONES
ouncilman
ity of West Sacramento

HARLES KELLAR
ouncilman
ity of Lincoln

ARBARA LeVAKE
upervisor
inty of Sutter

NIS NELSON
layor
ity of Yuba City

YNN ROBIE
ouncilwoman
ity of Sacramento

IM STRENG
upervisor
ounty of Sacramento

ICHARD B. WOOD
ouncilman
ity of Marysville

OBERT O. WATKINS
altrans District 3
x-Officio

ICHAEL HOFFACKER
Executive Director)

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ity of Rocklin
ity of Roseville
acramento County
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ity of Galt
ity of Isleton
ity of Sacramento
utter County
ity of Live Oak
ity of Yuba City
olo County
ity of Davis
ty of West Sacramento
ity of Winters
ity of Woodland
uba County
ity of Marysville
ity of Wheatland

July 10, 1990

Ms. Jean Baker
Caltrans, District 3
P.O. Box 911
Marysville, CA 95901

Subject: Notice of Preparation of a Draft Environmental Impact Report - Route 65/Lincoln Route Adoption

Dear Ms. Baker:

Thank you for the opportunity to comment on the Notice of Preparation on the EIR/EIS for the relocation of Route 65 around the city of Lincoln.

This agency has no concerns of an environmental nature concerning this project. The concept of a Lincoln bypass is included in the 1990 SACOG Regional Transportation Plan and the 1990 SACOG Regional Transportation Improvement Program. SACOG has also found the project to conform to the 1982 SACOG Regional Air Quality Plan.

We look forward to your completion of the environmental review of this project and the subsequent adoption of an alignment for a Route 65 Lincoln Bypass by the California Transportation Commission.

Sincerely,

MICHAEL HOFFACKER
Executive Director

MH:GK:bb

OF CALIFORNIA
GEORGE DEUKMEJIAN, *Governor*

IFORNIA REGIONAL WATER QUALITY CONTROL BOARD—
TRAL VALLEY REGION
ROUTIER ROAD, SUITE A
AMENTO, CA 95827-3098

LOC

12 July 1990

Ms. Jean L. Baker
CALTRANS
P. O. Box 911
Marysville, CA 95901

NOTICE OF PREPARATION OF A DRAFT EIR - LINCOLN BYPASS, PLACER COUNTY

Thank you for the opportunity to review the subject notice of preparation. I offer the following comments for your consideration:

1. The draft EIR should address the implementation of an enforceable erosion control plan to mitigate any potential water quality impacts resulting from stormwater runoff;

2. The draft EIR should incorporate appropriate grading plan measures; and

3. The draft EIR should designate the responsible parties for any phase of this project.

If you have any questions, please call me at (916) 361-5623.

G. Arnold Inouye
Area Engineer

GAI

cc: Department of Fish and Game, Rancho Cordova
Department of the Army, Corps of Engineers, Sacramento

of California

The Resources Agency

emorandum

6C0

:

Mr. Daryl Noble
California Department of Transportation
P.O. Box 911
Marysville, CA 95901

Date : July 23, 1990

: **Department of Fish and Game** - Region 2

ct: Proposed Notice of Preparation (NOP) of a Draft Environmental Impact Report (EIR) for the Route 65 Bypass of Lincoln, Placer County

The Department of Fish and Game (DFG) has reviewed the proposed NOP of a Draft EIR for the Route 65 Bypass of Lincoln. Project alternatives being considered include the "do nothing" alternative and three basic corridors bypassing Lincoln on the west side.

Our comments are unchanged from those included in the May 11, 1990 letter which is attached.

Please notify our Wildlife Biologist, Mr. Dale Whitmore, at (916) 743-5068 with any concerns about this letter.

If we can be of further assistance, please contact Mr. Ron Bertram, Associate Wildlife Biologist, or Ms. Patricia Perkins, Wildlife Management Supervisor, telephone (916) 355-7010.

James D. Messersmith
Regional Manager

Attachment

PLACER COUNTY

DEPARTMENT OF PUBLIC WORKS

JACK WARREN, Director
JAN WITTER, Assistant Director
LARRY ODDO, Deputy Director
ALAN ROY, Deputy Director

OPERATING DIVISION
Administration
Engineering
Equipment Maintenance
Road Maintenance
Special Districts
Surveying
Transportation

July 25, 1990

Ms. Jean L. Baker
Caltrans, District 3
P. O. Box 911
Marysville, CA 95901

Subject: **NOP - EIR/EIS HIGHWAY 65 LINCOLN BYPASS**

Thank you for the opportunity to comment upon the Notice of Preparation for the EIR/EIS for Highway 65 - Lincoln Bypass. Please find below our comments:

A. The map provided does not show alignment D12 which is a variation of D1. We would hope that this variation would be included in the environmental analysis.

B. The D alignment intersects a number of County roads. The impacts and required improvements of these roads should be addressed. Will there be at-grade intersections or will interchanges be constructed with Stage I? What will the traffic increases be on local roadways due to the various alignments?

The Planning Division has provided the following 4 comments for your consideration:

1. Stream crossings/riparian impacts -- alternatives AC and D1 will have to cross Auburn Ravine, Markham Ravine, Coon Creek, Yankee Slough, and a number of their related ephemeral and permanent drainages. The impacts related to wetland loss and habitat disruption should be evaluated carefully.

2. The AC and D1 alternatives will be placed in areas designated as Agriculture in the Agricultural Element of the Placer County General Plan. A number of policies in this element were established in an effort to protect agricultral lands from an encroachment of incompatible uses (e.g., a highway with local interchanges). A large number of soils in this area are classified as Class II, suitable for a variety of crops. Many of these areas are in production at this time, including a large number of operations within Williamson Act Contracts. The intrusion of a highway into these productive and well established agricultural enterprises will be detrimental to their productivity.

11444 B Avenue / DeWitt Center / Auburn, California 95603 / (916) 889-7500 / Fax (916) 885-3159

JUL 25 '90 11:09 PLACER COUNTY 916 P.2

3. The A route appears to be the most direct alternative with the least amount of disruption on surrounding agricultural lands and facilities. This alternative does impact Auburn Ravine and Markham Ravine, but it avoids Coon Creek and Yankee Slough altogether. The extent of vernal habitat in this area is not known to me specifically; however, it is presumed that all alternatives will impact some amount of this wetland habitat.

4. Alternatives AC and D1 have a greater potential for growth inducement in the area west of the existing Highway 65 corridor. This is anticipated due to the disruption and premature conversion of existing agricultural operations and improved circulation in the area. The land between the existing alignment and the new alignment will likely become an infill area which will be too small and too bisected for agricultural operations. As a result, a demand for conversion of this agricultural land is expected.

Please feel free to contact Rick Dondro (889-7583) if you have any questions concerning our comments.

COUNTY OF PLACER
DEPARTMENT OF PUBLIC WORKS

Jack Warren
JACK WARREN, DIRECTOR

JW:RD:cp

c: Alex Ferreira
Planning Dept.

E. Waller
2.3

e of California-Transportation Agency GEORGE DEUKMEJIAN, Governor

RTMENT OF TRANSPORTATION
rict 3
Box 911
sville, CA 95901
Telephone 916-741-4463

Telephone 916-741-4027

July 21, 1989

03-Pla-65
Lincoln Bypass
03807 - 333800
PST248

Honorable Norman Shumway
Representative in Congress
1150 West Robinhood Drive
Stockton, CA 95207

Dear Representative Shumway:

This is to advise you a Lincoln Bypass Route Modification Study has been undertaken for the segment of the current State Route 65, between just south of Industrial Boulevard (PM R12.2) to north of the City of Lincoln at Wise Road (PM 17.3). The study will consider extending the Route Adoption to 2 miles north of Sheridan (PM 23.7). The portion of Route 65 between 0.3 mile south of the Placer County Line and 1.3 miles north of Wise Power House Road was adopted as a freeway by the California Highway Commission on May 20, 1964. The California Transportation Commission added this project to its Special Studies list at its June 1987 meeting. The attached map shows the general limits of the proposed study.

Public informational meetings were held in Lincoln on November 23, 1987, February 21, 1988 and March 7, 1988. Factors discussed at these meetings included the need for the project, the logical limits of the project and possible alternative studies.

The appropriate local governing bodies and agencies are also being notified of the undertaking of a Lincoln Bypass Route Modification Study. During the course of these studies, we plan to work closely with these agencies and their staffs to exchange ideas and to assure that all pertinent factors are being considered. We would welcome any comments or suggestions concerning alternatives or social, economic, and environmental factors. We request at this time, that you furnish any information on the locations of historic properties that may be in the project vicinity. Please indicate if you wish to be notified at the completion of historic preservation studies.

When sufficient engineering, environmental and socioeconomic data have been developed, a public hearing will be held to discuss the project studies. The public hearing, like the public informational meetings, will be publicized and you will be notified in advance of the time and location.

We will be pleased to answer any questions you may have in regard to this project.

Sincerely,

Original signed by

ROBERT O. WATKINS
District Director

Attachment

bcc: Walter P. Smith, OPPD

EMW:dr

PSL024
06/22/89
Elected Officials

Honorable Norman Shumway
Representative in Congress
1150 West Robinhood Drive
Stockton, California 95207

Honorable Alan Cranston
United States Senator
452 Senate Office Building
Washington, DC 20510

Honorable Pete Wilson
United States Senator
Senate Office Building
Washington, DC 20510

Honorable John Doolittle
The State Senate
State Capitol, Room 5082
Sacramento, CA 95814

Honorable Tim Leslie
The State Assembly
State Capitol, Room 2176
Sacramento, CA 95814

Honorable Chris Chandler
The State Assembly
State Capitol, Room 4167
Sacramento, CA 95814

Honorable Norman S. Waters
The State Assembly
State Capitol, Room 6028
Sacramento, CA 95814

Honorable Wally Herger
Representative in Congress
20 Declaration Drive, Suite B
Chico, CA 95926

Honorable Robert Matsui
Representative in Congress
650 Capitol Mall Room A58
Sacramento, CA 95814

Honorable Vic Fazio
Representative in Congress
2525 Natomas Park Drive No. 330
Sacramento, CA 95833

Honorable Lloyd G. Connelly
The State Assembly
State Capitol Room 2176
Sacramento, CA 95814

Honorable Leroy F. Greene
The State Senate
State Capitol Room 3082
Sacramento, CA 95814

Honorable John Garamendi
The State Senate
State Capitol Room 4076
Sacramento, CA 95814

Honorable Jim Nielsen
The State Senate
State Capitol Room 3063
Sacramento, CA 95814

Honorable Phillip Isenburg
The State Assembly
State Capitol Room 6005
Sacramento, CA 95814

Honorable Stan Statham
The State Assembly
State Capitol Room 4098
Sacramento, CA 95814

Honorable Tom Hannigan
The State Assembly
State Capitol Room 3104
Sacramento, CA 95814

APPENDIX D COORDINATION WITH AGENCIES

U.S. Fish and Wildlife Service

- Letter to James McKevitt requesting guidance on USFWS concerns, April 12, 1990
- Letter from Wayne White responding to April 12, 1990 letter, June 29, 1990
- Letter from David Harlow responding to request of July 21, 1998, August 13, 1998
- Letter from Karen Miller responding to March 12, 2000 telephone request for comments on survey protocol, April 27, 2000
- Letter from Karen Miller responding to August 28, 2000, September 11, 2000

U.S. Army Corps of Engineers

- Letter from Tom Coe, regarding wetlands manual, August 30, 1991
- Letter to Tom Coe, responding to letter of August 30, 1991, September 27, 1991
- Letter from Tom Coe regarding wetlands verification, September, 1991

U.S. Dept. of Agriculture, Natural Resources Conservation Service

- Letter from Clifford Heitz, District Conservationist, July 2, 2001
- Farmland Conversion Impact Rating Forms, June 23, 2001

California Dept. of Fish and Game

- Letter from James Messersmith, Regional Manager responding to request for information, May 26, 1989
- Letter to Jerry Mench requesting CDFG concerns, April 12, 1990
- Letter from James Messersmith responding to request, May 11, 1990.

California Dept. of Parks & Recreation, State Historic Preservation Office

- Letter from Kathryn Gualtieri, State Historic Preservation Officer, concurring that Fickewirth Ranch and Sheridan Cash Store are eligible for National Register, October 22, 1991
- Letter from Cherilyn Widell, State Historic Preservation Officer, concurring with eligibility and with the phasing for the archaeological sites, August 8, 1994
- Letter from Cherilyn Widell, State Historic Preservation Officer, responding to Section 106 request, January 30, 1995

Placer County:,

- Letter to Board of Supervisors and City Council advising them of this project, July 24, 1989
- Letter to Property Owners advising of this project, July 24, 1989

TDD Phone (916) 741-4463
Telephone (916) 741-4027

April 12, 1990

03-PLA-65
PM T12.5/R23.5
03807-333800

Mr. James J. McKevitt
Field Supervisor
Division of Ecological Services
USDOI Fish and Wildlife Service
2800 Cottage Way, Room E-1803
Sacramento, California 95825

Dear Mr. McKevitt:

Route 65, Lincoln Bypass, Placer County-
Coordination For Species of Concern

Caltrans, in conjunction with the Federal Highway Administration (FHWA), is proposing an expressway/freeway project located in Placer County on State Route 65 between Post Mile (PM) 12.45 near Industrial Avenue and PM 23.5 between Sheridan and the Bear River Bridge (see enclosed Location Map). The project proposes modifying the existing adopted route by bypassing the City of Lincoln, and routing traffic through semi-rural and agricultural areas. This work includes constructing a two or four lane, access-controlled facility (or a combination of the two) on a new alignment. The bypass would likely consist of a 300-foot wide facility, including the median. Four interchanges would be constructed at project start, Moore Road, Nicholaus Road, and project terminus.

Twelve alternatives have been proposed for the bypass: A, A3, A4, A5, C1, C2, D1, D2, E, F, T (widening of the existing route), and the no-build alternative (see enclosed Attachments 4 and 5). The E, D2, T, and AFD alternatives have been dropped from further consideration because of: exorbitant cost; failure to meet the basic need and purpose of the project to reduce congestion and improve safety; and/or excessive environmental and socioeconomic impacts.

Caltrans is the lead agency for environmental clearance for these projects under NEPA and CEQA. Results of a contractor's work will be used to prepare a Natural Environment Study as backup material for the Environmental Impact Statement/Environmental Impact Report for the project. This data will also be used to assess project impacts on biological resources.

Wetlands are being delineated according to the Unified Federal Method (as on Attachment 5). We are aware of stream crossings at Orchard Creek, Ingram Slough, Auburn Ravine, Bunkam Slough, Markam Ravine, Coon Creek, and Yankee Slough.

In accordance with the terms of the 1988 Memorandum of Understanding between Caltrans and the Fish and Wildlife Service, we are requesting that you identify the fish and wildlife resource concerns the Service may have with this project, and recommended natural environment studies we may need to undertake. Please include a list of threatened or endangered federally listed, proposed and candidate species which might occur within the project area, and locations of designated or proposed critical habitats.

Should you need additional information or if you would like to discuss this project further, please contact either Terri Pencovic, District Biologist, telephone (916) 741-4199, or Daryl Noble, Environmental Coordinator, telephone (916) 741-4573.

Sincerely,

Original signed by

Steve Kirkpatrick, Chief
Project Studies Branch

Enclosures

cc: SESO, FWS, Sacramento, CA, w/ encl.

bcc Debbie Martin, BEAK
Terri Pencovic, Env. Br. B
Daryl Noble, Env. Br. B

TP/DN:ks

Filename: PLA65FWS

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Fish and Wildlife Enhancement
Sacramento Field Office
2800 Cottage Way, Room E-1823
Sacramento, California 95825-1846

In Reply Refer To:
PPN 626

June 29, 1990

Steve Kirkpatrick
California Department of Transportation
P.O Box 911
Marysville, California 95901

Subject: California Department of Transportation, Route 65, Lincoln Bypass, Placer County, California; Information Request

Dear Mr. Kirkpatrick:

The Fish and Wildlife Service has reviewed the information request and has the following comments and recommendations. The proposed project consists of modification of the existing Route 65 by bypassing the city of Lincoln and routing traffic through rural and agricultural areas.

The project area consists of rolling grassland interspersed with seasonal wetlands, including vernal pools, intermittent and perennial streams, and riparian and emergent wetlands which would be directly impacted by the proposed development. In addition, any wetlands not directly lost would have lower habitat values due to increased human intrusion. We are especially concerned that the proposed project will have growth-inducing impacts similar to those which occurred along the Highway 65 Bypass. In addition, we are aware that at least Auburn Ravine does support chinook salmon and perhaps steelhead trout. Some of the other streams potentially impacted may also support salmon and steelhead.

The Fish and Wildlife Service encourages all efforts to protect, improve and restore fish, wildlife and naturally functioning aquatic and wetland ecosystems of our Nation. It is also our responsibility to provide recommendations to protect and restore populations of threatened and endangered species. Because of our interest in the biological integrity of our Nation's waters, we generally recommend against a project when its construction would result in the destruction of wetland habitat values and is not water dependent. The proposed project is not water dependent.

Over 90 percent of California's wetlands have been lost due to past agricultural conversion, urban development, and flood control activities. Wetland habitat on the project site provides important resting, feeding, and nesting habitat for many species of birds including migratory waterfowl and shorebirds. Because of the value of the wetland habitat to migratory birds and the scarcity of these habitat types, the Service recommends there be no net loss of in-kind habitat values or acres.

The following candidate species could be found on the project site: Boggs lake hedge-hyssop (Gratiola heterosepala), Category 2; legenere (Legenere limosa), Category 2; and, Sacramento orcutt grass (Orcuttia viscida), Category 1; California linderiella (Linderiella occidentalis) Category 2; vernal pool fairy shrimp (Branchinecta new sp.), Category 2; greater western mastiff bat, (Eumops perotis californicus), Category 2; California red-legged frog (Rana aurora draytoni), Category 2. In addition, the proposed project area should be surveyed for valley elderberry longhorn beetle (Desmocerus californicus dimorphus). If it is determined that the proposed development may affect a listed species, formal consultation should be initiated pursuant to Section 7 of the Endangered Species Act. If the proposed action or any of its alternatives may adversely affect any candidate species, we recommend that you seek technical assistance on how to avoid impacts to these species.

We understand some plant surveys have been conducted; however, we strongly recommend that these floristic surveys continue. The distribution of Orcuttia viscida can vary on a yearly basis. For instance, Solano grass (Tuctoria mucronata), within the Orcuttieae tribe, has shown extensive variation in its presence and distribution over a period of years.

The Council of Environmental Quality regulations for implementing the National Environmental Policy Act define mitigation to include: 1) avoiding the impact; 2) minimizing the impact; 3) rectifying the impact; 4) reducing or eliminating the impact over time; and 5) compensating for impacts. The Service supports and adopts this definition of mitigation and considers the specific elements to represent the desirable sequence of steps in the mitigation planning process. Accordingly, we maintain that the best way to mitigate for adverse biological impacts is to avoid them whenever possible.

When projects impacting waterways or wetlands are deemed acceptable to the Service, full mitigation is recommended for any fish and wildlife value losses shown to be unavoidable. However, as directed by Section 404(b)(1) of the Clean Water Act, we believe the project proponent must first demonstrate that there are no other less damaging, practicable alternatives to the proposed project that would achieve the basic project purpose.

We recommend that the following information be included in your draft Statement/Report:

1. The draft Statement/Report should include evaluations of a wide range of alternatives. The alternatives should include at least one which would not involve fill of wetlands.

2. A complete description of all the various habitat types on the project site should be provided in the document. Any wetlands the Corps of Engineers did not exert its jurisdiction over should also be identified in the document. We also recommend that hydrological and biological studies be undertaken to determine what wetland functions may be affected by the proposed project, and how such impacts could be avoided.

3. The impacts of each alternative on fish, wildlife and their habitats must be thoroughly discussed in the document. The information should include any proposed mitigation for unavoidable impacts. In addition, the mechanisms for maintaining the integrity of avoided wetlands should be included in the document. For example, does the mitigation plan include adequate buffers, controls on increased human intrusion, and maintenance of wetland hydrology? Any mitigation plan (for both created and avoided wetlands) should have monitoring provisions (hydrological, plant cover and wildlife use), a contingency plan if the mitigation is not successful, long term operation and maintenance provisions and should identify a management agency.

4. The document must include a table indicating the acreage of each habitat type which would be affected by each of the alternatives. The number of wetland acres which would be filled or otherwise altered is especially critical.

5. There should be a discussion of the cumulative impacts of this project when considered with other impacts within Sacramento County and the watershed. In addition, the growth-inducing impacts of the proposed project should be identified.

6. Adequate surveys should be continued by qualified biologists for federally listed threatened, endangered, or candidate species. Results from these surveys should be included in the document. In addition, we recommend that the document identify vernal pools which could potentially support Orcuttia viscida

7. Stream surveys should be conducted for chinook salmon and steelhead trout. A determination of whether the streams to be impacted have potential chinook salmon or steelhead habitat should also be made.

If you have any questions about these comments, please contact Cay C. Goude at (916) 968-4613 regarding general fish and wildlife issues, or Peggie Kohl at (916) 978-4866 regarding threatened or endangered species.

Sincerely,

Wayne S. White
Field Supervisor

cc: Reg. Dir., AFWE, FWS, Portland, OR
Dir., CDFG, Sacramento, CA
Reg. Mgr., CDFG, Reg. II, Rancho Cordova
COE, Sacramento
NMFS, Santa Rosa
CRWQCB, Sacramento
Sacramento County, Environmental Section

Steve Kirkpatrick, CALTRANS

EPA, San Francisco
CWA, Sacramento
Sierra Club, Mother Lode Chapter
ECOS, Sacramento

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
3310 El Camino Avenue, Suite 130
Sacramento, California 95821-6340

IN REPLY REFER TO:
1-1-98-SP-1738

August 13, 1998

Mr. Ken Van Velsor
California Department of Transportation
District 3 , Sacramento Area Office - MS 41
P.O. Box 942874
Sacramento, California 94274-0001

Subject: Species List for Highway 65 Bypass, Lincoln, Placer County, California

Dear Mr. Van Velsor:

We are sending the enclosed list in response to your letter of July 21, 1998 request for information about endangered and threatened species (Enclosure A). The list covers the following U.S. Geological Survey 7½ minute quads: Roseville, Lincoln, and Sheridan .

Please read *Important Information About Your Species List* (enclosed). It explains how we made the list and describes your responsibilities under the Endangered Species Act. If you have questions that are not answered by the enclosure, please call Jan Knight, Sacramento Valley Branch Chief, at (916) 979-2120. For the fastest response to species list requests, address them to the attention of the section 7 office assistant at this address.

Sincerely,

Karen J. Miller

for David L. Harlow
Acting Field Supervisor

Enclosures

Important Information
About Your Species List

How We Make Species Lists

We store information about endangered and threatened species lists by US Geological Survey 7½ minute *quads*. The United States is divided into these quads, which are about the size of San Francisco. If you requested your list by quad name or number, that is what we used. Otherwise, we used the information you sent us to determine which quad or quads to use.

Animals

The animals on your species list are ones that occur within, *or may be affected by projects within*, the quads covered by the list. Fish and other aquatic species appear on your list if they are downstream from your quad or if water use in your quad might affect them.

Plants

Any plants on your list are ones *that have actually been observed* in the quad or quads covered by the list. We have also included either a county species list or a list of species in nearby quads. We recommend that you check your project area for these plants. Plants may exist in an area without ever having been detected there.

Surveying

Some of the species on your list may not be affected by your project. A trained biologist or botanist, familiar with the habitat requirements of the species on your list, should determine whether they or habitats suitable for them may be affected by your project. We recommend that your surveys include any proposed and candidate species on your list. For plant surveys, we recommend using the enclosed *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Species*. The results of your surveys should be published in any environmental documents prepared for your project.

State-Listed Species

Species listed as threatened or endangered by the California Department of Fish and Game do not appear on your species list unless they have also been listed by us or by the National Marine Fisheries Service. Call (916) 322-2493 or write Marketing Manager, California Department of Fish and Game, Natural Diversity Data Base, 1416 Ninth Street, Sacramento, California 95814 for information about state-listed species.

Your Responsibilities Under the Endangered Species Act

All plants and animals identified as *listed* on Enclosure A are fully protected under the Endangered Species Act of 1973, as amended. Section 9 of the Act and its implementing regulations prohibit the *take* of a federally listed wildlife species. Take is defined by the Act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" any such animal. Take may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or shelter (50 CFR §17.3).

Take incidental 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 a project that may result in take, then that agency must engage in a *formal consultation* with the Service. Such consultation would result in a *biological opinion* addressing the anticipated effect of the project on listed and proposed species. The opinion may authorize a limited level of incidental take.

If no Federal agency is involved with the project, and federally listed species may be taken as part of the project, then you, the applicant, should apply for an *incidental take permit*. The Service may issue such a permit if you submit a satisfactory conservation plan for the species that would be affected by your project. Should your survey determine that federally listed or proposed species occur in the area and are likely to be affected by the project, we recommend that you work with this office and the California Department of Fish and Game to develop a plan that mitigates for the project's direct and indirect impacts to listed species and compensates for project-related loss of habitat. You should include the mitigation plan in any environmental documents you file.

Candidate Species

We recommend that you address impacts to *candidate* species. We put plants and animals on our candidate list when we have enough scientific information to eventually propose them for listing as threatened or endangered. By considering these species early in your planning process you may be able to avoid the problems that could develop if one of these candidates was listed before the end of your project.

Your list may contain a section called *Species of Concern*. This term includes former *category 2 candidate species* and other plants and animals of concern to the Service and other Federal, State, and private conservation agencies and organizations. Some of these species may become candidate species in the future.

Wetlands

If your project will impact wetlands, riparian habitat, or other jurisdictional waters as defined by section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act, you will need to obtain a permit from the U.S. Army Corps of Engineers. Impacts to wetland habitats require site specific mitigation and monitoring. For questions regarding wetlands, please contact Mark Littlefield of this office at (916) 979-2113.

GUIDELINES FOR CONDUCTING AND REPORTING BOTANICAL INVENTORIES FOR FEDERALLY LISTED, PROPOSED AND CANDIDATE PLANTS
(September 23, 1996)

These guidelines describe protocols for conducting botanical inventories for federally listed, proposed and candidate plants, and describe minimum standards for reporting results. The Service will use, in part, the information outlined below in determining whether the project under consideration may affect any listed, proposed or candidate plants, and in determining the direct, indirect, and cumulative effects.

Field inventories should be conducted in a manner that will locate listed, proposed, or candidate species (target species) that may be present. The entire project area requires a botanical inventory, except developed agricultural lands. The field investigator(s) should:

1. Conduct inventories at the appropriate times of year when target species are present and identifiable. Inventories will include all potential habitats. Multiple site visits during a field season may be necessary to make observations during the appropriate phenological stage of all target species.

2. If available, use a regional or local reference population to obtain a visual image of the target species and associated habitat(s). If access to reference populations is not available, investigators should study specimens from local herbaria.

3. List every species observed and compile a comprehensive list of vascular plants for the entire project site. Vascular plants need to be identified to a taxonomic level which allows rarity to be determined.

4. Report results of botanical field inventories that include:

    a. a description of the biological setting, including plant community, topography, soils, potential habitat of target species, and an evaluation of environmental conditions, such as timing or quantity of rainfall, which may influence the performance and expression of target species

    b. a map of project location showing scale, orientation, project boundaries, parcel size, and map quadrangle name

    c. survey dates and survey methodology(ies)

    d. if a reference population is available, provide a written narrative describing the target species reference population(s) used, and date(s) when observations were made

    e. a comprehensive list of all vascular plants occurring on the project site for each habitat type

    f. current and historic land uses of the habitat(s) and degree of site alteration

    g. presence of target species off-site on adjacent parcels, if known

h. an assessment of the biological significance or ecological quality of the project site in a local and regional context

5. If target species is(are) found, report results that additionally include:

   a. a map showing federally listed, proposed and candidate species distribution as they relate to the proposed project

   b. if target species is (are) associated with wetlands, a description of the direction and integrity of flow of surface hydrology. If target species is (are) affected by adjacent off-site hydrological influences, describe these factors.

   c. the target species phenology and microhabitat, an estimate of the number of individuals of each target species per unit area; identify areas of high, medium and low density of target species over the project site, and provide acres of occupied habitat of target species. Investigators could provide color slides, photos or color copies of photos of target species or representative habitats to support information or descriptions contained in reports.

   d. the degree of impact(s), if any, of the proposed project as it relates to the potential unoccupied habitat of target habitat.

6. Document findings of target species by completing California Native Species Field Survey Form(s) and submit form(s) to the Natural Diversity Data Base. Documentation of determinations and/or voucher specimens may be useful in cases of taxonomic ambiguities, habitat or range extensions.

7. Report as an addendum to the original survey, any change in abundance and distribution of target plants in subsequent years. Project sites with inventories older than three years from the current date of project proposal submission will likely need additional survey. Investigators need to assess whether an additional survey(s) is (are) needed.

8. Adverse conditions may prevent investigator(s) from determining presence or identifying some target species in potential habitat(s) of target species. Disease, drought, predation, or herbivory may preclude the presence or identification of target species in any year. An additional botanical inventory(ies) in a subsequent year(s) may be required if adverse conditions occur in a potential habitat(s). Investigator(s) may need to discuss such conditions.

9. Guidance from California Department of Fish and Game (CDFG) regarding plant and plant community surveys can be found in Guidelines for Assessing the Effects of Proposed Developments on Rare and Endangered Plants and Plant Communities, 1984. Please contact the CDFG Regional Office for questions regarding the CDFG guidelines and for assistance in determining any applicable State regulatory requirements.

ENCLOSURE A

Endangered and Threatened Species that May Occur in
or be Affected by Projects in the Following Selected Quads

August 13, 1998

QUAD : 528A LINCOLN

Listed Species

Birds

American peregrine falcon, *Falco peregrinus anatum* (E)

Aleutian Canada goose, *Branta canadensis leucopareia* (T)

bald eagle, *Haliaeetus leucocephalus* (T)

Reptiles

giant garter snake, *Thamnophis gigas* (T)

Amphibians

California red-legged frog, *Rana aurora draytonii* (T)

Fish

winter-run chinook salmon, *Oncorhynchus tshawytscha* (E)

delta smelt, *Hypomesus transpacificus* (T)

Central Valley steelhead, *Oncorhynchus mykiss* (T)

Invertebrates

vernal pool tadpole shrimp, *Lepidurus packardi* (E)

vernal pool fairy shrimp, *Branchinecta lynchi* (T)

valley elderberry longhorn beetle, *Desmocerus californicus dimorphus* (T)

Proposed Species

Fish

Central Valley spring-run chinook salmon, *Oncorhynchus tshawytscha* (PE)

Central Valley fall-run chinook salmon, *Oncorhynchus tshawytscha* (PT)

Sacramento splittail, *Pogonichthys macrolepidotus* (PT)

Candidate Species

Birds

mountain plover, *Charadrius montanus* (C)

QUAD : 528A LINCOLN

Species of Concern

Mammals

- spotted bat, *Euderma maculatum* (SC)
- greater western mastiff-bat, *Eumops perotis californicus* (SC)
- small-footed myotis bat, *Myotis ciliolabrum* (SC)
- long-eared myotis bat, *Myotis evotis* (SC)
- fringed myotis bat, *Myotis thysanodes* (SC)
- long-legged myotis bat, *Myotis volans* (SC)
- Yuma myotis bat, *Myotis yumanensis* (SC)
- San Joaquin pocket mouse, *Perognathus inornatus* (SC)
- Pacific western big-eared bat, *Plecotus townsendii townsendii* (SC)

Birds

- tricolored blackbird, *Agelaius tricolor* (SC)
- western burrowing owl, *Athene cunicularia hypugea* (SC)
- ferruginous hawk, *Buteo regalis* (SC)
- white-faced ibis, *Plegadis chihi* (SC)

Reptiles

- northwestern pond turtle, *Clemmys marmorata marmorata* (SC)
- California horned lizard, *Phrynosoma coronatum frontale* (SC)

Amphibians

- western spadefoot toad, *Scaphiopus hammondii* (SC)

Fish

- green sturgeon, *Acipenser medirostris* (SC)
- longfin smelt, *Spirinchus thaleichthys* (SC)

Plants

- Ahart's rush, *Juncus leiospermus var. ahartii* (SC)

QUAD : 528B SHERIDAN

Listed Species

Birds

American peregrine falcon, *Falco peregrinus anatum* (E)

Aleutian Canada goose, *Branta canadensis leucopareia* (T)

bald eagle, *Haliaeetus leucocephalus* (T)

Reptiles

giant garter snake, *Thamnophis gigas* (T)

Amphibians

California red-legged frog, *Rana aurora draytonii* (T)

Fish

winter-run chinook salmon, *Oncorhynchus tshawytscha* (E)

delta smelt, *Hypomesus transpacificus* (T)

Central Valley steelhead, *Oncorhynchus mykiss* (T)

Invertebrates

vernal pool tadpole shrimp, *Lepidurus packardi* (E)

vernal pool fairy shrimp, *Branchinecta lynchi* (T)

valley elderberry longhorn beetle, *Desmocerus californicus dimorphus* (T)

Proposed Species

Fish

Central Valley spring-run chinook salmon, *Oncorhynchus tshawytscha* (PE)

Central Valley fall-run chinook crit hab, *Oncorhynchus tshawytscha* (PT)

Central Valley fall-run chinook salmon, *Oncorhynchus tshawytscha* (PT)

Sacramento splittail, *Pogonichthys macrolepidotus* (PT)

Candidate Species

Birds

mountain plover, *Charadrius montanus* (C)

QUAD : 528B SHERIDAN

Species of Concern

Mammals

greater western mastiff-bat, *Eumops perotis californicus* (SC)

small-footed myotis bat, *Myotis ciliolabrum* (SC)

long-eared myotis bat, *Myotis evotis* (SC)

fringed myotis bat, *Myotis thysanodes* (SC)

long-legged myotis bat, *Myotis volans* (SC)

Yuma myotis bat, *Myotis yumanensis* (SC)

San Joaquin pocket mouse, *Perognathus inornatus* (SC)

Pacific western big-eared bat, *Plecotus townsendii townsendii* (SC)

Birds

tricolored blackbird, *Agelaius tricolor* (SC)

western burrowing owl, *Athene cunicularia hypugea* (SC)

ferruginous hawk, *Buteo regalis* (SC)

white-faced ibis, *Plegadis chihi* (SC)

Reptiles

northwestern pond turtle, *Clemmys marmorata marmorata* (SC)

Amphibians

western spadefoot toad, *Scaphiopus hammondii* (SC)

Fish

green sturgeon, *Acipenser medirostris* (SC)

longfin smelt, *Spirinchus thaleichthys* (SC)

QUAD : 528D ROSEVILLE

Listed Species

Birds

American peregrine falcon, *Falco peregrinus anatum* (E)

Aleutian Canada goose, *Branta canadensis leucopareia* (T)

QUAD : 528D ROSEVILLE

Listed Species

Birds

bald eagle, *Haliaeetus leucocephalus* (T)

Reptiles

giant garter snake, *Thamnophis gigas* (T)

Amphibians

California red-legged frog, *Rana aurora draytonii* (T)

Fish

delta smelt, *Hypomesus transpacificus* (T)

Central Valley steelhead, *Oncorhynchus mykiss* (T)

Invertebrates

vernal pool tadpole shrimp, *Lepidurus packardi* (E)

vernal pool fairy shrimp, *Branchinecta lynchi* (T)

valley elderberry longhorn beetle, *Desmocerus californicus dimorphus* (T)

Proposed Species

Fish

Sacramento splittail, *Pogonichthys macrolepidotus* (PT)

Candidate Species

Birds

mountain plover, *Charadrius montanus* (C)

Species of Concern

Mammals

greater western mastiff-bat, *Eumops perotis californicus* (SC)

small-footed myotis bat, *Myotis ciliolabrum* (SC)

long-eared myotis bat, *Myotis evotis* (SC)

fringed myotis bat, *Myotis thysanodes* (SC)

QUAD : 528D ROSEVILLE

Species of Concern

Mammals

- long-legged myotis bat, *Myotis volans* (SC)
- Yuma myotis bat, *Myotis yumanensis* (SC)
- San Joaquin pocket mouse, *Perognathus inornatus* (SC)
- Pacific western big-eared bat, *Plecotus townsendii townsendii* (SC)

Birds

- tricolored blackbird, *Agelaius tricolor* (SC)
- western burrowing owl, *Athene cunicularia hypugea* (SC)
- ferruginous hawk, *Buteo regalis* (SC)
- white-faced ibis, *Plegadis chihi* (SC)

Reptiles

- northwestern pond turtle, *Clemmys marmorata marmorata* (SC)
- California horned lizard, *Phrynosoma coronatum frontale* (SC)

Amphibians

- western spadefoot toad, *Scaphiopus hammondii* (SC)

Fish

- green sturgeon, *Acipenser medirostris* (SC)
- longfin smelt, *Spirinchus thaleichthys* (SC)

Plants

- hispid bird's-beak, *Cordylanthus mollis ssp. hispidus* (SC)
- legenere, *Legenere limosa* (SC)

KEY:

(E)	*Endangered*	Listed (in the Federal Register) as being in danger of extinction.
(T)	*Threatened*	Listed as likely to become endangered within the foreseeable future.
(P)	*Proposed*	Officially proposed (in the Federal Register) for listing as endangered or threatened.
(C)	*Candidate*	Candidate to become a *proposed* species.
(SC)	*Species of Concern*	May be endangered or threatened. Not enough biological information has been gathered to support listing at this time.
(*)		Possibly extinct.
	Critical Habitat	Area essential to the conservation of a species.

ENCLOSURE A

Endangered and Threatened Species that May Occur in or be Affected by Projects in the Area of the Following California County or Counties

August 12, 1998

PLACER COUNTY

Listed Species

Birds

American peregrine falcon, *Falco peregrinus anatum* (E)

Aleutian Canada goose, *Branta canadensis leucopareia* (T)

bald eagle, *Haliaeetus leucocephalus* (T)

Reptiles

giant garter snake, *Thamnophis gigas* (T)

Amphibians

California red-legged frog, *Rana aurora draytonii* (T)

Fish

winter-run chinook salmon, *Oncorhynchus tshawytscha* (E)

delta smelt, *Hypomesus transpacificus* (T)

Lahontan cutthroat trout, *Oncorhynchus (=Salmo) clarki henshawi* (T)

Central Valley steelhead, *Oncorhynchus mykiss* (T)

Invertebrates

vernal pool tadpole shrimp, *Lepidurus packardi* (E)

vernal pool fairy shrimp, *Branchinecta lynchi* (T)

valley elderberry longhorn beetle, *Desmocerus californicus dimorphus* (T)

Plants

Truckee barberry, *Berberis sonnei* (E)

Proposed Species

Fish

Central Valley spring-run chinook salmon, *Oncorhynchus tshawytscha* (PE)

Sacramento splittail, *Pogonichthys macrolepidotus* (PT)

Candidate Species

Birds

mountain plover, *Charadrius montanus* (C)

Candidate Species

Amphibians

California tiger salamander, *Ambystoma californiense* (C)

Species of Concern

Mammals

spotted bat, *Euderma maculatum* (SC)

greater western mastiff-bat, *Eumops perotis californicus* (SC)

Sierra Nevada snowshoe hare, *Lepus americanus tahoensis* (SC)

Pacific fisher, *Martes pennanti pacifica* (SC)

small-footed myotis bat, *Myotis ciliolabrum* (SC)

long-eared myotis bat, *Myotis evotis* (SC)

fringed myotis bat, *Myotis thysanodes* (SC)

long-legged myotis bat, *Myotis volans* (SC)

Yuma myotis bat, *Myotis yumanensis* (SC)

San Joaquin pocket mouse, *Perognathus inornatus* (SC)

pale Townsend's big-eared bat, *Plecotus townsendii pallescens* (SC)

Pacific western big-eared bat, *Plecotus townsendii townsendii* (SC)

Birds

northern goshawk, *Accipiter gentilis* (SC)

grasshopper sparrow, *Ammodramus savannarum* (SC)

western burrowing owl, *Athene cunicularia hypugea* (SC)

American bittern, *Botaurus lentiginosus* (SC)

ferruginous hawk, *Buteo regalis* (SC)

lark sparrow, *Chondestes grammacus* (SC)

white-faced ibis, *Plegadis chihi* (SC)

California spotted owl, *Strix occidentalis occidentalis* (SC)

Reptiles

northwestern pond turtle, *Clemmys marmorata marmorata* (SC)

southwestern pond turtle, *Clemmys marmorata pallida* (SC)

California horned lizard, *Phrynosoma coronatum frontale* (SC)

Species of Concern

Amphibians

- Mount Lyell salamander, *Hydromantes platycephalus* (SC)
- foothill yellow-legged frog, *Rana boylii* (SC)
- mountain yellow-legged frog, *Rana muscosa* (SC)
- western spadefoot toad, *Scaphiopus hammondii* (SC)

Fish

- green sturgeon, *Acipenser medirostris* (SC)
- river lamprey, *Lampetra ayresi* (SC)
- Pacific lamprey, *Lampetra tridentata* (SC)

Invertebrates

- Lake Tahoe benthic stonefly, *Capnia lacustra* (SC)
- Sagehen Creek goracean caddisfly, *Goeracea oregona* (SC)
- Shirttail Creek stonefly, *Megaleuctra sierra* (SC)
- South Forks ground beetle, *Nebria darlingtoni* (SC)
- spiny rhyacophilan caddisfly, *Rhyacophila spinata* (SC)

Plants

- Carson Range rock-cress, *Arabis rigidissima var. demota* (SC)
- Red Hills soaproot, *Chlorogalum grandiflorum* (SC)
- hispid bird's-beak, *Cordylanthus mollis ssp. hispidus* (SC)
- Donner Pass buckwheat, *Eriogonum umbellatum var. torreyanum* (SC)
- Plumas ivesia, *Ivesia sericoleuca* (SC)
- Ahart's rush, *Juncus leiospermus var. ahartii* (SC)
- legenere, *Legenere limosa* (SC)
- long-petaled lewisia, *Lewisia longipetala* (SC)
- saw-toothed lewisia, *Lewisia serrata* (SC)
- Stebbins' phacelia, *Phacelia stebbinsii* (SC)

KEY:

(E)	*Endangered*	Listed (in the Federal Register) as being in danger of extinction.
(T)	*Threatened*	Listed as likely to become endangered within the foreseeable future.
(P)	*Proposed*	Officially proposed (in the Federal Register) for listing as endangered or threatened.
(C)	*Candidate*	Candidate to become a *proposed* species.
(SC)	*Species of Concern*	Other species of concern to the Service.
*	*Extirpated*	Possibly extirpated from the area.
	Critical Habitat	Area essential to the conservation of a species.

United States Department of the Interior
FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825-1846

IN REPLY REFER TO:
1-1-00-TA-1514

April 27, 2000

Mr. Jeff Bray
LSA Associates, Inc.
4200 Rocklin Road, Suite 11B
Rocklin, California 95677

Subject: Comments on the *Route 65 Bypass Project - Survey Protocol for State and Federally Listed Species* associated with the *Draft Route 65 Lincoln Bypass Natural Environment Study Report*

Dear Mr. Bray:

This letter is in response to your March 12, 2000, telephone request for comments on the *Route 65 Bypass Project - Survey Protocol for State and Federally Listed Species* (Survey Protocols) associated with the *Draft Route 65 Lincoln Bypass Natural Environment Study Report* (Draft NES Report). The November 18, 1999 Draft NES Report, concerning the rerouting of State Highway 65 in Placer County, was received by the U.S. Fish and Wildlife Service (Service) on March 14, 2000. The survey protocols accompanied the Draft NES Report. Revisions to the Draft NES Report were received concurrently on March 14, 2000. These comments are being provided as Technical Assistance and refer only to the proposed Survey Protocols. The Draft NES Report is being reviewed and coordinated separately by the Service's Wetlands Branch.

The Service has reviewed the methodologies associated with the proposed Survey Protocols and found that they appear to be adequate. Data collected from the surveys may assist in screening a preferred Route 65 alignment from a set of six potential Route 65 alignments or a combination thereof. The Service does have some concerns with the qualitative evaluation of habitat for listed species and the recovery permits required to collect these species.

The Survey Protocols address the threatened vernal pool fairy shrimp (*Branchinecta lynchi*) and vernal pool tadpole shrimp (*Lepidurus packardi*) (listed branchiopods). Vernal pool fairy shrimp were detected within all six alignments and vernal pool tadpole shrimp occur immediately west of the project area. The Survey Protocols go on to state that the presence of these species is assumed in all vernal pools within the project area. It should be noted that listed branchiopods may also occur within other ephemeral wetland habitats.

Listed branchiopods are not limited exclusively to wetlands designated as vernal pools during a formal Clean Water Act Section 404 wetlands delineation. The qualitative habitat evaluation associated with screening the six alternatives must be of sufficient scope to include *all* suitable habitat for listed branchiopods, not just those wetlands that have been delineated as vernal pools. Omission of other shrimp habitats will result in an inaccurate assessment of each alignment's effects to listed species.

The Survey Protocols should be adjusted to reflect the evaluation of *all* suitable habitat for the listed branchiopods and not be limited solely to vernal pools. Specifically, the Service requests that the following changes be made to the paragraphs within the section entitled *Invertebrates: Vernal Pool Fairy Shrimp* (Branchinecta lynchi) - *FT, Vernal Pool Tadpole Shrimp* (Lepidurus packardi):

1. The last sentence of the first paragraph should be changed to "As a result, potential impacts to these species will be determined based on the evaluation of impacts to their respective habitats."

2. The paragraph associated with the Winter 1999/00 surveys should be changed to read, "A qualitative analysis will be performed for all habitat suitable for vernal pool fairy shrimp and vernal pool tadpole shrimp within the preferred alignment. Results of this analysis will be used to determine if impacts to vernal pool fairy shrimp and vernal pool tadpole shrimp habitat can be minimized through adjustment of the overall project footprint."

3. The section referenced in item 2, above, should be changed to reflect the probable later date for selection of the preferred alignment; perhaps Winter 2000/2001.

4. References strictly to vernal pools throughout the Draft NES Report should be changed to reflect all suitable habitat for listed branchiopods wherever appropriate.

It should also be noted that sampling for aquatic or any wetland-obligate species may also result in the take of either of the listed branchiopods. As such, all individuals sampling for *any* species within vernal pools or other habitat suitable for vernal pool fairy shrimp and/or vernal pool tadpole shrimp shall possess a section 10(a)(1)(a) recovery permit for listed branchiopods or accompany a permitted individual. This requirement is in addition to all other applicable permits.

All surveys should be conducted using the most current guidelines from the Service. Listed branchiopods and collections within their habitat are subject to the April 19, 1996, *Interim Survey Guidelines to Permittees for Recovery Permits under Section 10(a)(1)(A) of the Endangered Species Act for the Listed Vernal Pool Branchiopods*. Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) habitat shall be surveyed according to the guidance contained in the July 9, 1999, *Conservation Guidelines for the Valley Elderberry Longhorn Beetle*. California red-legged frogs will be subject to the conditions set forth in the February 18, 1997, *U.S. Fish and Wildlife Service Guidance on Site Assessment and Field Surveys for California Red-legged Frogs*.

The Service accepts the general methodologies proposed for the screening of the six proposed alignments, but there are greater issues regarding the findings of these preliminary surveys. The proposed Survey Protocols do not represent a scientifically sound approach for determining the biological effects associated with the eventual construction of the Route 65 Lincoln Bypass along a preferred alignment. In particular, the Study Area Boundaries (Boundaries) noted on Figure 8b of the Draft NES Report will not allow for a full analysis of the direct, indirect, interdependent and interrelated effects associated with a preferred alignment.

It is understood that the present proposed survey effort is intended only to screen the six existing alternatives with the goal of selecting a single, preferred alternative. The Service's concern is that data collected within the relatively limited Boundaries will not be sufficient to initiate a formal section 7 consultation on a preferred alternative in the future. The limited boundary may also result in the selection of a preferred alternative that causes unforseen adverse effects. The future section 7 consultation will be further impacted should surveys for listed branchiopods be limited only to vernal pools. All parties involved with the planning effort for the Route 65 Lincoln Bypass should be made aware of the potential inability of the Survey Protocols to provide the information required to initiate formal consultation as described at 50 CFR §402.14(c).

If you have any questions or concerns about these comments, recovery permits, or the consultation process in general, please contact Jason Douglas or Chris Nagano at (916) 414-6645.

Sincerely,

for

Karen J. Miller
Chief, Endangered Species Division

cc: Caltrans (Attention: Karen McWilliams)

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, SACRAMENTO
CORPS OF ENGINEERS
1325 J STREET
SACRAMENTO, CALIFORNIA 95814-2922

REPLY TO
ATTENTION OF

August 30,1991

Regulatory Section (9000168)

Mr. Jeff Loudon, Environmental Branch Chief
Caltrans District 3
P.O. Box 911
Marysville, California 95901

Dear Mr. Loudon:

On August 17, 1991, the President of the United States signed the 1992 Energy and Water Development Appropriations Act (H.R. 2427 dated July 10, 1991). This Act contains an amendment that limits the use of appropriated funds and establishes certain procedural options regarding on-going enforcement actions, permit applications and wetland delineation verifications that involved use of the 1989 "Federal Manual for Identifying and Delineating Jurisdictional Wetlands". We are writing to explain these options since your proposed project, the Lincoln Bypass, is considered an on-going action.

The Corps is required to make an initial investigation to determine if there would be substantial differences between using the 1989 Federal Manual or the 1987 Corps Delineation Manual in identifying jurisdictional wetlands. Relevant to your proposed project, we have determined that there would not be substantial differences. We have compared the two manuals and have concluded that the three-parameter approach is similar and the Sacramento District has consistently employed this approach in identifying jurisdictional areas.

If you agree with our conclusion, please submit in writing your concurrence. If not, you have 30 days from the date of this letter to submit any additional information that is relevant to identifying wetlands in your proposed project area. This information should specifically identify where use of the 1987 Manual would result in substantial differences when compared to using the 1989 Manual.

After reviewing all available information, the Corps will make a final determination on whether a new delineation using the 1987 Manual is warranted. We will notify you of our final determination in writing.

Please refer to identification number 199000168 in any future correspondence concerning this project. If you have any questions, contact Karen Shaffer at (916) 557-5269.

Sincerely,

Tom Coe

Tom Coe
Chief, Regulatory Unit 1

Copy Furnished:

Ms. Debbie Martin, Beak Consultants Incorporated, 2717 Cottage Way, Suite 20, Sacramento, California 95825

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, SACRAMENTO
CORPS OF ENGINEERS
1325 J STREET
SACRAMENTO, CALIFORNIA 95814-2922

REPLY TO
ATTENTION OF

September 27, 1991

Regulatory Section (9000168)

Mr. Jeffrey Loudon
Environmental Branch Chief
Caltrans District 3
P.O. Box 911
Marysville, California 95901

Dear Mr. Loudon:

This letter concerns the project known as the Lincoln Bypass, located in Placer County, California.

We have reviewed and verified the revised wetland delineation maps of the Lincoln Bypass submitted to us by letter dated August 14, 1991. Approximately 340 acres of the delineation have not been field verified because the right-of-entry had expired. This area will not require field verification if the alternative which impacts it is chosen. We have checked the aerials and feel comfortable in including this area in the verification due to the accuracy at which the rest of the wetlands on the site were delineated.

Our jurisdiction in this area in under Section 404 of the Clean Water Act. A Department of the Army permit is required prior to discharging dredged or fill material into waters of the United States. Accordingly, a permit will be required prior to filling any of the waters present on the Lincoln Bypass site as identified on the verified wetland maps. The type of permit processing required will depend upon the type and amount of waters which would be lost or substantially adversely modified by fill activities.

This verification is valid for three years from the date of this letter. Please refer to identification number 199000168 in any future correspondence concerning this project. If you have any questions, please write to Karen Shaffer at the letterhead address, Attn: Regulatory Section, or telephone (916)557-5269.

Sincerely,

Tom Coe

Tom Coe
Chief, Regulatory Unit 1

Copy Furnished:

Ms. Debbie Martin, Beak Consultants Incorporated, 2717 Cottage Way, Suite 20, Sacramento, California 95825

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY PETE WILSON, Gov

DEPARTMENT OF TRANSPORTATION
DISTRICT 3
O. BOX 911
MARYSVILLE, CA 95901
TDD (916) 741-4509
FAX (916) 741-4457
(916) 741-4598

September, 1991

03-Pla-65
03-333800
Lincoln Bypass

Mr. Tom Coe, Chief
Regulatory Unit 1
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, CA 95814-2922

Dear Mr. Coe:

Subject: Lincoln Bypass, Project No. 199000168

Having reviewed your letter of August 30, 1991, we concur with your determination that application of the 1987 Corps Delineation Manual to our proposed undertaking would not result in substantial differences in the results obtained using the 1989 Federal Manual. We greatly appreciate the efforts of you and your staff in assisting in the delineation and verification of wetlands within the above referenced project.

If you have any questions, contact Henry Bass at (916) 741-4455.

Sincerely,

Original signed by

JEFFREY M. LOUDON, CHIEF
Environmental Branch A

cc Debbie Martin, Beak Consultants Incorporated
2717 Cottage WA, Suite 20, Sacramento, California 95825
Craig Martz, Office of Environmental Analysis
John Steele, Project Studies Branch

HOB:jm

United States Department of the Interior
FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825-1846

IN REPLY REFER TO:
1-1-00-TA-1514

April 27, 2000

Mr. Jeff Bray
LSA Associates, Inc.
4200 Rocklin Road, Suite 11B
Rocklin, California 95677

Subject: Comments on the *Route 65 Bypass Project - Survey Protocol for State and Federally Listed Species* associated with the *Draft Route 65 Lincoln Bypass Natural Environment Study Report*

Dear Mr. Bray:

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Sincerely,

for

Karen J. Miller
Chief, Endangered Species Division

cc: Caltrans (Attention: Karen McWilliams)

USDA United States Department of Agriculture

Natural Resources Conservation Service

Auburn Field Office
251 Auburn Ravine #107
Auburn, Ca 95603
(530) 823-6830

July 2, 2001

Cynthia Gause
Environmental Planner
California Department of Transportation
District 3, Sacramento Area Office – MS 19
2800 Gateway Oaks,
Sacramento, CA 94274-0001

Re: PLA 65-Lincoln Bypass; PM 12.5/23.5; EA 03-333800
Farmland Conversion Impact Rating (AD-1006)

Dear Cynthia:

As per your request I am resubmitting the Farmland Conversion Impact Rating Forms AD-1006 for alignments C-1, C-2, D-1, D-13, D-13 N. Mod. And D-13 S. Modification based on the most recent numerical values you provided to us, including the new width of the proposed highway (240 Ft. wide). It appears that even though the total number of acres that you showed in site/to be converted has increased, the ratios have remained basically the same when compared to the previous determinations. One explanation for this is that the amount of non-farmland has also increased, particularly since the last Farmland Conversion Impact Rating evaluation of 1999.

If you have any questions or need further assistance please give me a call at 530-823-6830, ext. 107. Thank you.
Sincerely,

Carol-Anne Rutenbergs

Carol-Anne Rutenbergs
Soil Conservationist

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*	Date Of Land Evaluation Request 5/23/01
Name Of Project Lincoln Bypass	Federal Agency Involved Federal Highways Administration (Pg 1 of 2)
Proposed Land Use New Highway Alignment	County And State Placer County, California
PART II *(To be completed by NRCS)*	Date Request Received By NRCS

Does the site contain prime, unique, statewide or local important farmland? *(If no, the FPPA does not apply -- do not complete additional parts of this form).* Yes ☒ No ☐		Acres Irrigated 52,600	Average Farm Size 137
Major Crop(s) Rice, Orchard Irrig. Pasture	Farmable Land In Govt. Jurisdiction Acres: 0 %	Amount Of Farmland As Defined in FPPA Acres: 14,946 % 14	
Name Of Land Evaluation System Used California System	Name Of Local Site Assessment System N/A	Date Land Evaluation Returned By NRCS 7/2/2001	

PART III *(To be completed by Federal Agency)*	Alternative Site Rating			
	~~Site A~~ C-1	~~Site B~~ C-2	~~Site C~~ D-1	~~Site D~~ D-13
A. Total Acres To Be Converted Directly	563.0	528.0	596.0	612.0
B. Total Acres To Be Converted Indirectly				
C. Total Acres In Site	563.0	528.0	596.0	612.0
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	117.36	111.3	198.91	171.91
B. Total Acres Statewide And Local Important Farmland	30.3	28.1	186.24	86.5
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted	1%	1%	2.5%	1.7%
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value	N/A	N/A	N/A	
PART V *(To be completed by NRCS)* Land Evaluation Criterion Relative Value Of Farmland To Be Converted *(Scale of 0 to 100 Points)*	0 42	0 42	0 43	0 42

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(These criteria are explained in 7 CFR 658.5(b)*	Maximum Points				
1. Area In Nonurban Use	15	10	10	12	12
2. Perimeter In Nonurban Use	10	6	6	8	8
3. Percent Of Site Being Farmed	20	18	18	19	19
4. Protection Provided By State And Local Government	20	20	20	20	20
5. Distance From Urban Builtup Area	0	0	0	0	0
6. Distance To Urban Support Services	0	0	0	0	0
7. Size Of Present Farm Unit Compared To Average	10	10	10	10	10
8. Creation Of Nonfarmable Farmland	25	2	2	2	2
9. Availability Of Farm Support Services	5	5	5	5	5
10. On-Farm Investments	20	19	19	19	19
11. Effects Of Conversion On Farm Support Services	25	0	0	0	0
12. Compatibility With Existing Agricultural Use	10	10	10	10	10
TOTAL SITE ASSESSMENT POINTS	160	0 100	0 100	0 105	0 105
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland *(From Part V)*	100	0 42	0 42	0 43	0 42
Total Site Assessment *(From Part VI above or a local site assessment)*	160	0 100	0 100	0 105	0 105
TOTAL POINTS *(Total of above 2 lines)*	260	0 142	0 142	0 148	0 147

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? Yes ☐ No ☑

Reason For Selection:

Notes: Pg 1 of 2 - Site A=Alt C-1; Site B=Alt C-2; Site C=Alt D-1; Site D=Alt D-13

(See Instructions on reverse side)

Form AD-1006 (10-83)

This form was electronically produced by National Production Services Staff

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*	Date Of Land Evaluation Request 5/23/01
Name Of Project Lincoln Bypass	Federal Agency Involved Federal Highways Administration (Pg 2 of 2)
Proposed Land Use New Highway Alignment	County And State Placer County, California
PART II *(To be completed by NRCS)*	Date Request Received By NRCS

Does the site contain prime, unique, statewide or local important farmland? *(If no, the FPPA does not apply -- do not complete additional parts of this form).*	Yes	No	Acres Irrigated	Average Farm Size
	☒	☐	52,600	137

Major Crop(s)	Farmable Land In Govt. Jurisdiction	Amount Of Farmland As Defined in FPPA
Rice, orchard, Irrig. Pasture	Acres: 0 %	Acres: 14,946 % 14

Name Of Land Evaluation System Used	Name Of Local Site Assessment System	Date Land Evaluation Returned By NRCS
California System	N/A	7/2/2001

PART III *(To be completed by Federal Agency)*	Alternative Site Rating			
	~~D-13 Site A N. Mod.~~	~~D-13 Site B S. Mod.~~	Site C	Site D
A. Total Acres To Be Converted Directly	583.0	611.0	0.0	0.0
B. Total Acres To Be Converted Indirectly				
C. Total Acres In Site	583.0	611.0	0.0	0.0
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	207.7	216.24		
B. Total Acres Statewide And Local Important Farmland	91	127.72		
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted	1.99%	2.30%		
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value	N/A	N/A		
PART V *(To be completed by NRCS)* Land Evaluation Criterion Relative Value Of Farmland To Be Converted *(Scale of 0 to 100 Points)*	0 42	0 42	0	0

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(These criteria are explained in 7 CFR 658.5(b)*	Maximum Points				
1. Area In Nonurban Use	15	13	12		
2. Perimeter In Nonurban Use	10	8	8		
3. Percent Of Site Being Farmed	20	19	19		
4. Protection Provided By State And Local Government	20	20	20		
5. Distance From Urban Builtup Area	0	0	0		
6. Distance To Urban Support Services	0	0	0		
7. Size Of Present Farm Unit Compared To Average	10	10	10		
8. Creation Of Nonfarmable Farmland	25	2	2		
9. Availability Of Farm Support Services	5	5	5		
10. On-Farm Investments	20	19	19		
11. Effects Of Conversion On Farm Support Services	25	0	0		
12. Compatibility With Existing Agricultural Use	10	10	10		
TOTAL SITE ASSESSMENT POINTS	160	0 105	0 105	0	0
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland *(From Part V)*	100	0 42	0 42	0	0
Total Site Assessment *(From Part VI above or a local site assessment)*	160	0 105	0 105	0	0
TOTAL POINTS *(Total of above 2 lines)*	260	0 147	0 147	0	0

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? Yes ☐ No ☑

Reason For Selection:

Notes: Pg 2 of 2 - Site A=Alt D-13 North Modified; Site B=D-13 South Modified

(See Instructions on reverse side)

Form AD-1006 (10-83)

This form was electronically produced by National Production Services Staff

State of California The Resources Agenc

Memorandum

To : Brian J. Smith, Chief
Caltrans, District 3
P. O. Box 911
Marysville, CA 95901

Date : May 26, 1989

From : **Department of Fish and Game**

Subject : Route 65 Lincoln Bypass, Placer County (file: 03-Pla-65)

The Department of Fish and Game (DFG) has reviewed your request for information concerning rerouting of a portion of State Route 65 near the City of Lincoln, Placer County (file: 03-Pla-65).

Critical habitat of the project area includes the riparian and stream zone of Auburn Ravine Creek, wetlands associated with numerous intermittent drainages and swales, and vernal pools.

The riparian zones may provide habitat for the Swainson's hawk, a State-listed threatened species, and the valley elderberry longhorn beetle, a Federally-listed threatened species.

Vernal pools in this area may support State- and/or Federally-listed plant species. Presence or absence must be determined by botanical surveys, which we understand from the May 4, 1989 Corps preapplication meeting, are underway.

Additionally, the area maintains a significant number of valley oaks. Preservation of these trees should be given high priority in project planning.

At the preapplication meeting, the Caltrans biologists estimated from their recent survey that about four hundred vernal pools would be impacted by the alignments presented to date. The DFG representative and representatives from U.S. Fish and Wildlife Service, Environmental Protection Agency, and the U.S. Army Corps of Engineers, recommended that additional alternatives be pursued, including a route south of the Lincoln Airport and the alternative of widening the existing route.

We look forward to reviewing the results of your biological surveys, including those for State- and Federally-listed plants and animals. The surveys should cover the proposed project area of all alternatives being considered in order to compare the potential impacts, an important part of our consultation with you under the California Endangered Species Act.

Thank you for initiating early consultation on this project. If the DFG can be of further assistance, please contact Patricia Perkins, Wildlife Management Supervisor, or Ron Bertram, Associate Wildlife Biologist, telephone (916) 355-7010.

James D. Messersmith
Regional Manager

State of California **Business, Transportation and Housing Agency**

MEMORANDUM

To : Director, Region II
Attention: Jerry Mench
Department of Fish and Game
1701 Nimbus Road
Rancho Cordova, California 95825

Date: April 12, 1990

File: 03-PLA-65
MP T12.5/R23.5
03807-333800

From : **DEPARTMENT OF TRANSPORTATION** - Telephone ATSS 457-4027
District 3, P.O. Box 911, Marysville, CA 95901

Subject: Route 65, Lincoln Bypass, Placer County-
Coordination For Species of Concern

Caltrans, in conjunction with the Federal Highway Administration (FHWA), is proposing an expressway/freeway project located in Placer County on State Route 65 between Post Mile (PM) 12.45 near Industrial Avenue and PM 23.5 between Sheridan and the Bear River Bridge (see enclosed Location Map). The project proposes modifying the existing adopted route by bypassing the City of Lincoln, and routing traffic through semi-rural and agricultural areas. This work includes constructing a two or four lane, access-controlled facility (or a combination of the two) on a new alignment. The bypass would likely consist of a 300-foot wide facility, including the median. Four interchanges would be constructed at project start, Moore Road, Nicholaus Road, and project terminus.

Twelve alternatives have been proposed for the bypass: A, A3, A4, A5, C1, C2, D1, D2, E, F, T (widening of the existing route), and the no-build alternative (see enclosed Attachments 4 and 5). The E, D2, T, and AFD alternatives have been dropped from further consideration because of: exorbitant cost; failure to meet the basic need and purpose of the project to reduce congestion and improve safety; and/or excessive environmental and socioeconomic impacts.

Caltrans is the lead agency for environmental clearance for this project under NEPA and CEQA. Results of a contractor's work will be used to prepare a Natural Environment Study as backup material for the Environmental Impact Statement/Environmental Impact Report for the project. This data will also be used to assess project impacts on biological resources.

Wetlands are being delineated according to the Unified Federal Method (as on Attachment 5). We are aware that a 1601 permit will be necessary for any work in Orchard Creek, Ingram Slough, Auburn Ravine, Bunkam Slough, Markam Ravine, Coon Creek, and Yankee Slough.

As a part of our environmental evaluation, we are requesting that you identify the fish and wildlife resource concerns you may have with this project, and recommended natural environment studies we may need to undertake. Please include information pertaining to any species or habitat of concern under your jurisdiction that may occur in the project vicinity. Providing us with the boundaries of any conservation easements would be particularly helpful.

Should you need additional information or if you would like to discuss this project further, please contact either Terri Pencovic, District Biologist, telephone (916) 741-4199, or Daryl Noble, Environmental Coordinator, telephone (916) 741-4573.

Original signed by

Steve Kirkpatrick, Chief
Project Studies Branch

Enclosures

cc: Dist. Eng., ACE, Sacramento, w/o encl.

bcc Debbie Martin, BEAK
Terri Pencovic, Env. Br. B
Daryl Noble, Env. Br. B

TP/DN:ks

Filename: PLA65DFG

CALIFORNIA—THE RESOURCES AGENCY GEORGE DEUKMEJIAN, Governor

DEPARTMENT OF FISH AND GAME
REGION 2
1701 NIMBUS ROAD, SUITE A
RANCHO CORDOVA, CALIFORNIA 95670
(916) 355-7020

May 11, 1990

Mr. Steve Kirkpatrick, Chief
Project Studies Branch
Department of Transportation
District 3
P.O. Box 911
Marysville, CA 95901

Dear Mr. Kirkpatrick:

The Department of Fish and Game (DFG) has reviewed your request for fish and wildlife concerns that the DFG may have regarding your proposed freeway project on State Route 65. The project is considering 12 alternatives to routing Route 65 around the City of Lincoln between Sheridan and Lincoln, Placer County.

Significant resources within the project area that should be evaluated as part of your environmental evaluation should include the following:

1. As indicated, you have undertaken a wetlands inventory according to the Unified Federal Method. The DFG additionally considers areas to be wetland habitat when the site contains any one of the three criteria used to inventory wetland habitats using the Federal methodology. Your evaluation should also include these wetlands. All wetlands should be delineated and quantified.

2. All riparian habitats should be delineated and quantified.

3. Vernal pools should be delineated and quantified as part of your wetland inventory but field surveys must be conducted during the appropriate spring flowering period to determine presence or absence of all potential listed plant species that may occur in the area. This survey must be conducted by a qualified botanist.

4. The site should be surveyed for nesting sites and foraging areas for Swainson's hawk (Buteo swainsoni), a State-listed threatened species. Please consult the Natural Diversity Data Base for a listing of nest sites and forage areas including mitigation criteria for the loss of these areas.

5. All riparian areas should be surveyed for presence of valley elderberry longhorn beetle (Desmocercus california dimorphus), a Federally-listed threatened species.

6. Riparian zones should be surveyed for the giant garter snake (Thamnophis couchi gigas), a State-listed threatened species.

7. All streams should be evaluated for their use by anadromous fish and specifically for possible use by winter-run chinook salmon (Oncorhynchus tshawytscha), a State-listed endangered and Federally-listed threatened species.

We recommend that each alternative be evaluated for impacts to each of the significant resources identified and that the least environmentally damaging alternative be selected. CEQA requires a discussion of the environmentally superior alternative. Impacts that cannot be avoided either by design or alternative selection must be mitigated to levels below significance.

Mitigation for wetland habitats, including riparian habitat and vernal pools, should be based on the concept of no net loss of acreage or values. This can be accomplished through avoidance or the creation/restoration of additional offsite wetland areas. We prefer to avoid wetland impacts through project design. Mitigation should be in kind, on-site whenever feasible.

Specific mitigation for Swainson's hawk, valley elderberry longhorn beetle, giant garter snake, and winter-run chinook salmon, and other sensitive species found on-site should be developed during compliance with both State and Federal laws pertaining to listed species.

Mitigation for anadromous fishery impacts may be accomplished through appropriate bridge design and/or the incorporation of appropriate fish passage structures.

You should be advised that work within the 100-year flood plain, consisting of but not limited to diversion or obstruction of the natural flow or changes in the channel, bed, or bank of any river, stream, or lake, will require notification to the DFG as required by Fish and Game Code Section 1600 et seq. The notification (with fee), and subsequent agreement, must be completed prior to initiating any such work. Notification to the DFG should be made after the project is approved by the lead agency. The agreement process should not be used in lieu of specific mitigation measures to be included as conditions of project approval by the lead agency.

Thank you for the opportunity to review this project. If the DFG can be of further assistance, please contact Mr. Ron Bertram, Associate Wildlife Biologist, or Ms. Patricia Perkins, Wildlife Management Supervisor, telephone (916) 355-7010.

Sincerely,

James D.Messersmith
Regional Manager

STATE OF CALIFORNIA — THE RESOURCES AGENCY

PETE WILSON, *Governor*

OFFICE OF HISTORIC PRESERVATION

DEPARTMENT OF PARKS AND RECREATION

P.O. BOX 942896
SACRAMENTO 94296-0001
(916) 445-8006
FAX: (916) 322-6377

22 October 1991

Reply to: **FHWA 910903A**

Roger Borg, Division Administrator
Federal Highway Administration
Region Nine
Attn: Joan Bollman
P.O. Box 1915
SACRAMENTO CA 95812-1915

Subject: **HISTORIC PROPERTY SURVEY REPORT FOR PROPOSED LINCOLN BYPASS - 03-PLA-65-12.2/23.8**

Dear Mr. Borg:

Thank you for sending me a copy of the H.P.S.R. for the Lincoln Bypass of State Route 65 and for requesting my views on your findings of National Register eligibility.

I understand that the Federal Highway Administration is evaluating five possible alternatives to realign Highway 65 near Lincoln, Placer County. According to your September 3, 1991 cover letter, two historic structures within the undertaking's APE are eligible for inclusion in the National Register and two of fifteen archaeological sites may also be eligible. Subsurface testing to determine their composition and stratigraphic integrity will be required before a determination of significance can be made. Federal Highways has, however, determined that thirteen other archaeological sites are in or near the APE are not eligible.

Before commenting on your determinations of eligibility for the archaeological sites in question, I have several questions. Better report organization and a table of contents could have gone far toward providing answers and I recommend that reports submitted for my review in the future conform to the format provided by Archaeological Resource Management Reports: (ARMR) Recommended Contents and Format.

There is some question about how many surveys of the APE have been completed and how many archaeological sites are in the APE. Page 2 of the Alignment A report says that two surveys have been completed within the undertaking's APE while page 4 reports that nine surveys have been done. Page nine says twelve archaeological sites could be affected by Alternative A, while page fourteen says eight isolates and features are within

Alternative A's APE. Page two of the report asserts that eleven archaeological sites are within the APE, while the cover letter notes that fifteen archaeological sites are within or adjacent to the APE.

We concur in your finding that the following properties are not eligible for the National Register of Historic Places:

Scheiber Ranch, 1700 Moore Rd., Lincoln
1600 Moore Rd., Lincoln
Gates Ranch, 2330 Highway 65, Lincoln
Ahart Ranch, 4005 Wise Rd., Lincoln
Nader Ranch, Chamberlain Rd. at Highway 65, Lincoln
Old Jail, adjacent to 5024 Riosa, Sheridan

We also agree that the Fickewirth Ranch (George P. Ahart Ranch), 2780 Dowd Rd., Lincoln, is eligible for the National Register under Criterion C at the local level of significance. It is one of the earliest intact residences of the area, with its outbuildings and setting relatively unaltered. The period of significance is 1901. Property boundaries are the agricultural parcel lot lines, containing five contributing buildings and one contributing structure.

The Sheridan Cash Store (Country Store) at 5740 13th Street, Sheridan, is eligible at the local level of significance under criteria A and C. It is associated with the development of Sheridan, and it is that community's only commercial structure which survived the 1891 fire and remains on its original site. The store is also a good example of a brick false-front commercial structure from its period of construction, which is 1879. Property boundaries are the lot lines, and the building is the only contributor.

If you have any questions, please telephone Nicholas Del Cioppo of my staff at (916) 653-9696 or Dorene Clement at (916) 653-8902.

Sincerely,

Kathryn Gualtieri
State Historic Preservation Officer

GW

STATE OF CALIFORNIA — THE RESOURCES AGENCY PETE WILSON, *Governor*

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
P.O. BOX 942896
SACRAMENTO 94296-0001
(916) 653-6624
FAX: (916) 653-9824

8 August 1994

Reply to: FHWA910903A

Peter Markle,
Acting Division Administrator
Federal Highway Administration
980 Ninth Street - Suite 400
SACRAMENTO CA 5814-2724

Subject: LINCOLN BYPASS, 03-PLA-65-12.2/23.8

Dear Mr. Markle:

Thank you for your June 27, 1994 letter addressing my questions about the 1991 historic properties report.

Your letter requested my comments on your determination that the Fickewirth Ranch and the County Store (a.k.a.Sheridan Cash Store) are eligible for inclusion in the National Register. Please note that this issue was settled three years ago. Both properties have been determined eligible by consensus.

Federal Highways' archaeological consultant, Far Western Anthropological Group, reported in 1991 that not enough was known about the the two archaeological sites, CA-PLA-715 and CA-PLA-716 to evaluate their National Register eligibility (Berg & McGuire, 1991:5). In a letter dated January 21, 1992, your agency acknowledged this informational inadequacy but assured my office that the two sites "...will be further evaluated for eligibility...if they cannot be avoided by the selected alternative" (Borg to Craigo, 1/21/94). Please notify us if your current plans include effects to these archaeological deposits.

The 1991 report also mentions several rock walls of uncertain antiquity as well as a number of isolated artifacts found within the APE. Thank you for clearing up the matter of the isolated artifacts and for explaining your efforts to establish a historic context for the rock features. A great deal of confusion might have been avoided if this information were provided three years ago. I concur with Federal Highways' finding that AF-31-10-H and AF-31-11-H are not eligible for inclusion in the National Register.

You have fulfilled federal agency responsibilities pursuant to 36 CFR 800, regulations implementing Section 106 of

RECEIVED
AUG 12 1994
FHWA-Sacramento

the National Historic Preservation Act. Please note that your agency may have additional responsibilities under 36 CFR 800 under any of the following circumstances;

(1) If any person requests that the Advisory Council on Historic Preservation review your findings in accordance with 36 CFR 800.6(e);
(2) If this undertaking changes in ways that could affect historic properties [36 CFR 800.5(c)];
(3) If previously undocumented properties are discovered during the implementation of this undertaking or if a known historic property will be affected in an unanticipated manner [36 CFR 800.11];
(4) If a property that was to be avoided has been inadvertently or otherwise affected [36 CFR 800.4(c);800.5]; or
(5) If any condition of the undertaking, such as a delay in implementation or implementation in phases over time, may justify reconsideration of the current National Register status of properties within the undertaking's Area of potential Effects [36 CFR 800.4(c)].

Thank you for considering historic properties during project planning. If you have any questions, please call staff archaeologist Nicholas Del Cioppo at (916) 653-9696.

Sincerely,

Ms. Cherilyn Widell
State Historic Preservation Officer

STATE OF CALIFORNIA — THE RESOURCES AGENCY

PETE WILSON, Gover

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
P.O. BOX 942896
SACRAMENTO 94296-0001
(916) 653-6624
FAX: (916) 653-9824

30 January 1995

Reply to: FHWA910903A

Peter C. Markle
Acting Division Administrator
Federal Highway Administration
980 Ninth Street, Suite 400
Sacramento, CA 95814-2724

Subject: FINDING OF EFFECT, STATE ROUTE 65 - LINCOLN BYPASS

Dear Mr. Markle:

Thank you for requesting my review of the undertaking noted above and for including the documentation which justifies your decision. I do not object to your determination that this undertaking will not affect historic properties. Accordingly, you have fulfilled federal agency responsibilities pursuant to 36 CFR 800, regulations implementing Section 106 of the National Historic Preservation Act. Please note that your agency may have additional responsibilities under 36 CFR 800 under any of the following circumstances;

(1) If any person requests that the Advisory Council on Historic Preservation review your findings in accordance with 36 CFR 800.6(e);
(2) If this undertaking changes in ways that could affect historic properties [36 CFR 800.5(c)];
(3) If previously undocumented properties are discovered during the implementation of this undertaking or if a known historic property will be affected in an unanticipated manner [36 CFR 800.11];
(4) If a property that was to be avoided has been inadvertently or otherwise affected [36 CFR 800.4(c);800.5]; or
(5) If any condition of the undertaking, such as a delay in implementation or implementation in phases over time, may justify reconsideration of the current National Register status of properties within the undertaking's Area of potential Effects [36 CFR 800.4(c)].

Thank you for considering historic properties during project planning. If you have any questions, please call staff archaeologist Nicholas Del Cioppo at (916) 653-9696.

Sincerely,

Ms. Cherilyn Widell
State Historic Preservation Officer

REC'D FHWA

FEB 2 - 1995

E. Walker 2

State of California-Transportation Agency GEORGE DEUKMEJIAN, Governo

DEPARTMENT OF TRANSPORTATION
District 3
P.O. Box 911
Marysville, CA 95901
TDD Telephone 916-741-4463

Telephone 916-741-4027

July 24, 1989

03-Pla-65
Lincoln Bypass
03807 - 333800
PST249

Board of Supervisors
City Councils
X
X

Dear _____:

This is to advise you a Lincoln Bypass Route Modification Study has been undertaken for the segment of the current State Route 65, between just south of Industrial Boulevard (PM R12.2) to north of the City of Lincoln at Wise Road (PM 17.3). The study will consider extending the Route Adoption to 2 miles north of Sheridan (PM 23.7). The portion of Route 65 between 0.3 mile south of the Placer County Line and 1.3 miles north of Wise Power House Road was adopted as a freeway by the California Highway Commission on May 20, 1964. The California Transportation Commission added this project to its Special Studies list at its June 1987 meeting. The attached map shows the general limits of the proposed study.

As you may recall, public informational meetings were held in Lincoln on November 23, 1987, February 21, 1988 and March 7, 1988. Factors discussed at these meetings included the need for the project, the logical limits of the project and possible alternative studies.

We have been working closely with your technical staff during the course of these studies, as we will be desiring information on master plans, zoning, and other local planning. As the studies progress, contacts will be maintained with the County and City to exchange ideas and to assure that all pertinent factors are being considered.

In connection with the subject routing study, we wish to call your attention to Section 75.5 of the Streets and Highways Code which provides that on request of any city or county, and where such city or county furnished appropriate information,

Caltrans will present at the public hearings, in addition to estimated user benefits, the effect that the selection of alternative routings would have upon community values. A copy of this section of the Code is attached for your information.

Your attention is also directed to Section 210.4 of the Streets and Highways Code relative to route study limits. A copy of this section of the Code is attached.

It is felt that the proposed study limits represent the most logical segment to be studied for the purposes of route selection. We shall assume that these limits are satisfactory to your honorable body unless we hear from you to the contrary.

Section 75.6 of the Streets and Highways Code provides that at public hearings before the Commission or Caltrans on the selection of alternative State highway or freeway routes, on request of any city or county affected, Caltrans shall present a graphic portrayal of selected significant portions of the route alternatives by means of sketches or preliminary models, where appropriate, to show the general appearance and basic design features of the highway or freeway upon which the estimated cost is based. We will be glad to work with you and your staff in the preparation of any appropriate visual displays.

When sufficient engineering, environmental, and socioeconomic data have been developed, a public hearing will be held to discuss the project studies. The public hearing, like the public informational meetings, will be well publicized, and you will be notified well in advance of the hearing time and location.

Any suggestions or information you or your staff can provide us during the routing study will be most sincerely appreciated. Do not hesitate to call upon us at any time should you desire any information or an explanation of the project studies.

Sincerely,

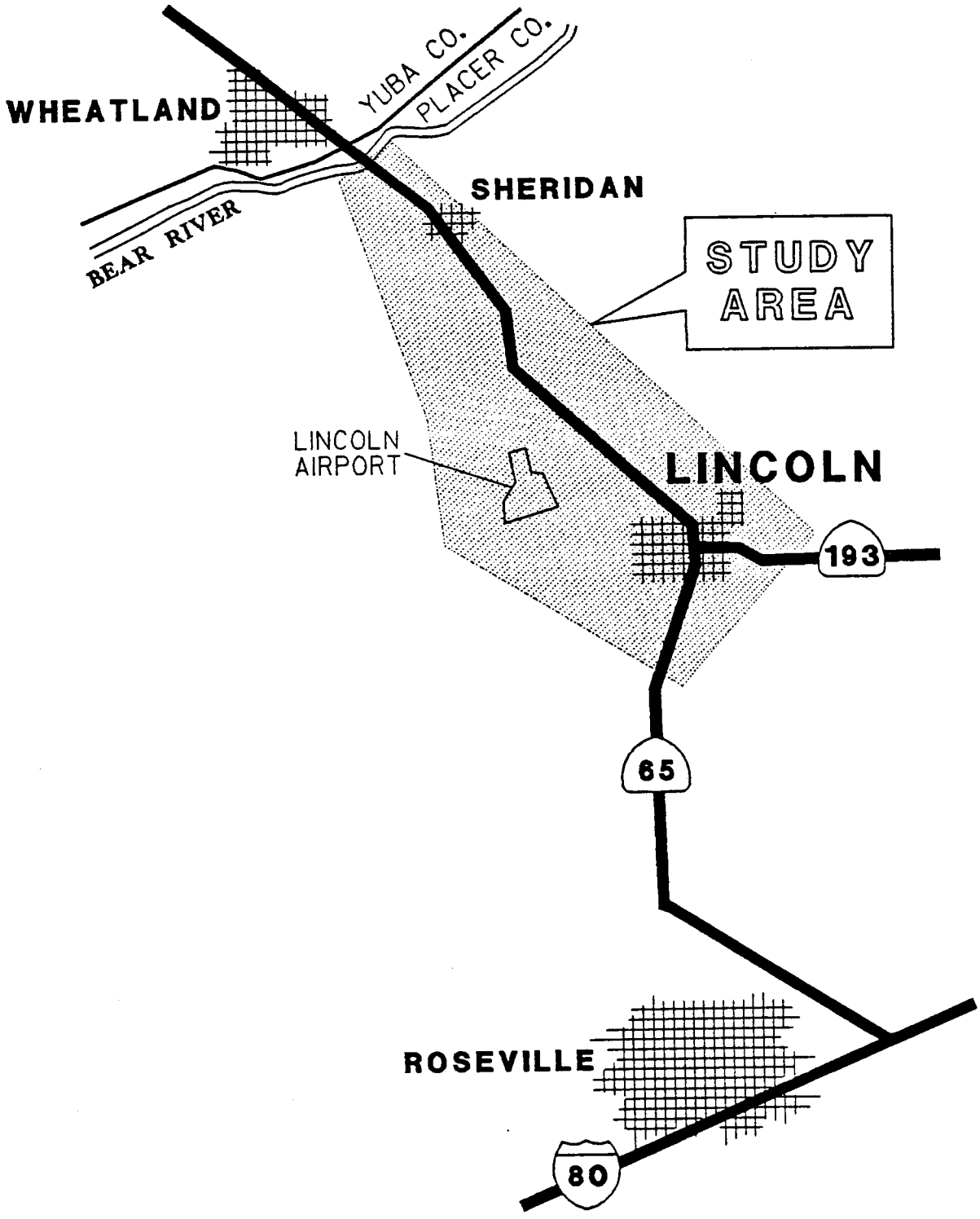
Original signed by

ROBERT O. WATKINS
District Director

Attachment

bcc: Walter P. Smith, OPPD

EMW:dr



LINCOLN BYPASS ROUTE MODIFICATION STUDY

SECTION OF STREETS AND HIGHWAYS CODE

PUBLIC MEETING

75.5 At any public hearing or meeting before the commission or department on the selection of any state highway or freeway route at which comparative estimates are presented of the benefits that would accrue to drivers of motor vehicles in the use of alternative routes, on request of any city or county affected, estimates for the same time period, and based on similar assumptions, as the driver benefit estimates shall also be presented of the effect that the selection of either route would have upon community values, including but not limited to property values, state and local public facilities, and city street and county highway traffic. Such estimates are required only if requested by an affected city or county which transmits with its request such information relative to the estimates as it may wish to have presented. The department, whenever it announces that a public hearing or meeting is to be held on the selection of any state highway or freeway route, shall notify any affected city or county that it may make such a request. Failure of the department or the commission to comply with the requirements of this section shall not invalidate any action of the commission as to the adoption of a routing for any state highway, nor shall such failure be admissible evidence in any litigation for the acquisition of rights of way or involving the allocation of funds or the construction of the highway.

HEARING ON SEGMENT OF ROUTE TO BE STUDIED

210.4 Prior to the initiation of a freeway route selection study and during the period of preliminary discussion between the department and representatives of the appropriate local agency, in the event that the local agency is not satisfied as to the most logical segment to be studied for route selection, the governing body of the local agency may petition the commission for a hearing on the matter, and a hearing shall be held, as provided in Section 74 of this code.

PSL025
06/30/89
Pla-65 City & County

Mr. Roger Imsdahl
Placer County
Transportation Commission
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Auburn, CA 95603

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Director of Public Works
Placer County
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PARTMENT OF TRANSPORTATION
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Marysville, CA 95901
TDD Telephone 916-741-4463

Telephone 916-741-4027

July 24, 1989

03-Pla-65
Lincoln Bypass
03807 - 333800
PST248

Dear Property Owner:

This is to advise you a Lincoln Bypass Route Modification Study has been undertaken for the segment of the current State Route 65, between just south of Industrial Boulevard (PM R12.2) to north of the City of Lincoln at Wise Road (PM 17.3). The study will consider extending the Route Adoption to 2 miles north of Sheridan (PM 23.7). The portion of Route 65 between 0.3 mile south of the Placer County Line and 1.3 miles north of Wise Power House Road was adopted as a freeway by the California Highway Commission on May 20, 1964. The California Transportation Commission added this project to its Special Studies list at its June 1987 meeting. The attached map shows the general limits of the proposed study.

Public informational meetings were held in Lincoln on November 23, 1987, February 21, 1988 and March 7, 1988. Factors discussed at these meetings included the need for the project, the logical limits of the project and possible alternative studies.

The appropriate local governing bodies and agencies are also being notified of the undertaking of a Lincoln Bypass Route Modification Study. During the course of these studies, we plan to work closely with these agencies and their staffs to exchange ideas and to assure that all pertinent factors are being considered. We would welcome any comments or suggestions concerning alternatives or social, economic, and environmental factors. We request at this time, that you furnish any information on the locations of historic properties that may be in the project vicinity. Please indicate if you wish to be notified at the completion of historic preservation studies.

When sufficient engineering, environmental and socioeconomic data have been developed, a public hearing will be held to discuss the project studies. The public hearing, like the public informational meetings, will be publicized and you will be notified in advance of the time and location.

We will be pleased to answer any questions you may have in regard to this project.

Sincerely,

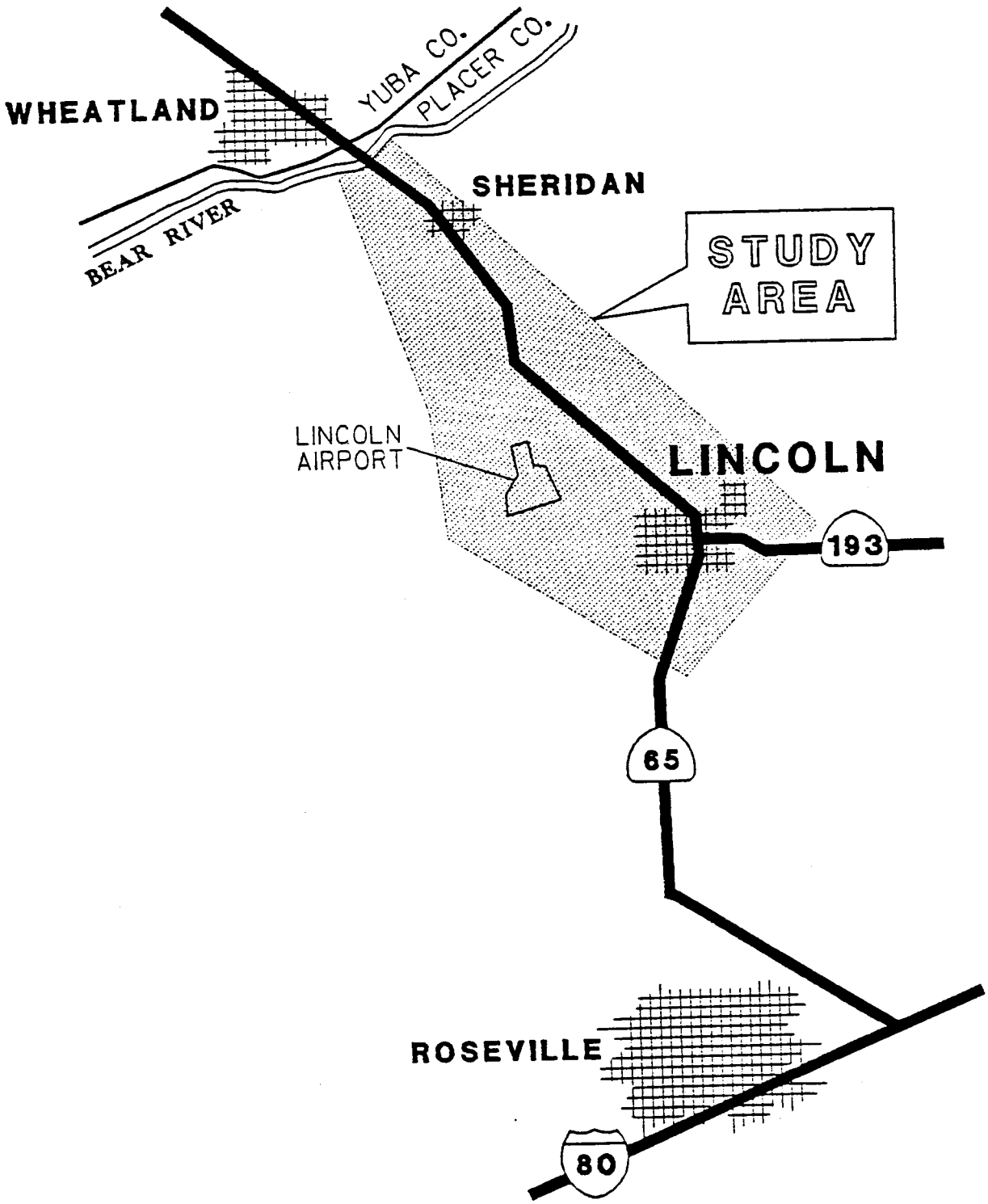
Original signed by

ROBERT O. WATKINS
District Director

Attachment

bcc: Walter P. Smith, OPPD

EMW:dr



LINCOLN BYPASS ROUTE MODIFICATION STUDY

APPENDIX E NEPA/404 COMMUNICATION

- Letter from FHWA/Caltrans to ACOE, EPA, FWS, Letter requesting concurrence on the purpose and need, criteria for selection of alternatives, and description of alternatives to be evaluated in the DEIR/S, April 25, 1994
- Letter from FHWA/Caltrans to ACOE, EPA, FWS, Letter requesting concurrence on the purpose and need, criteria for selection of alternatives, and description of alternatives to be evaluated in the DEIR/S, May 12, 1994
- Letter from FWS to FHWA/Caltrans, FWS needs more information Purpose & need not clearly identified, would like to see another alternative that doesn't affect wetlands, need a complete list of criteria and alternatives that were discarded at previous planning stages, June 17, 1994
- Letter from EPA to FHWA/Caltrans, Concurrence that the range of alternatives meets the requirements for Section 404 and the criteria for the selection of alternatives to be evaluated is adequate, June 28,1994
- Letter from FHWA/Caltrans to ACOE, EPA, FWS , Preliminary information for a meeting to obtain concurrence, February 18, 1997
- Letter from FHWA/Caltrans to ACOE, EPA, FWS, Requesting concurrence again, March 17, 1997
- Letter from FWS to FHWA/Caltrans , Concurrence on projects purpose and need, range of alternatives and criteria for selection of alternatives, March 21, 1997
- Letter from ACOE to FHWA/Caltrans, Concurrence on purpose & need, range of alternatives, design parameters, April 7, 1997
- Letter from EPA to FHWA/Caltrans, Concurrence on purpose & need, range of alternatives, design parameters, May 6, 1997

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY PETE WILSON, *Governor*

DEPARTMENT OF TRANSPORTATION
DISTRICT 3
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April 25, 1994

03-Pla-65
PM R12.2/R23.8
03-333800
Lincoln Bypass

Mr.
P.O.
Dept. [see address list]
City

Dear Mr. X:

The attached information relative to the proposed Lincoln Bypass project is being sent to you in preparation for the NEPA/404 Integration meeting to be held on May 5, 1994. Your attendance at this meeting is critical to its success; please be prepared to discuss all issues specified under terms of the Integration Memorandum of Understanding.

Should you have any questions, please contact Lucie Adams at (916) 263-3415.

Sincerely,

Original signed by

JEAN L. BAKER, Chief
Environmental Branch B

Enclosure

cc: Joe Caputo, Chief - Project Studies
Wendy Tkacheff, Project Engineer - Project Studies
Jeffrey Loudon, Chief - Environmental A
Lucie Adams, Biologist - Environmental Division

HOB:dr

(Env)

Filename: lbypass

Address list:

Ms. Karen Schaeffer
Regulatory Functions
U.S. Army Corps of Engineers
Sacramento District
Regulatory Section
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Sacramento, CA 95814-2992

Mr. Art Champ, Chief
Regulatory Functions
U.S. Army Corps of Engineers
Sacramento District
Regulatory Section
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Mr. Paul Jones
Wetlands Program
Environmental Protection Agency
Permitting Section
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Mr. Mike Aceituno
Attention: Darren Fong
U.S. Fish and Wildlife Service
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Mr. George Wishman
Area Engineer
Federal Highway Administration
U.S. Bank Plaza
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Sacramento, CA 95814-2724

03-PLA-65
Lincoln Bypass
P.M. R12.2/R23.8
E.A. 333800

PURPOSE AND NEED STATEMENT

The purpose of this project is to reduce traffic delay, congestion and improve safety by constructing a bypass to carry regional traffic around the City of Lincoln. The project will require a modification of the route adopted by the California Transportation Commission in 1964. Problems identified which will be addressed by the proposed project include:

- The existing adopted Route 65 alignment for the bypass has not been protected by the local agencies, nor was right of way acquired by the State. Development on the alignment makes it infeasible to build the adopted Route 65.

- The existing facility through Lincoln is a "Main Street" highway which will not serve the ultimate regional transportation needs. Conflicts between local and regional traffic has resulted in an increase in congestion.

- The existing highway does not have the capacity to accommodate the increase in vehicles expected to use the roadway in the future. The Level of Service (LOS) for the existing highway is LOS D, and is projected to deteriorate to LOS F by the year 2005.

- The accident rate for existing Highway 65 within the project limits is higher than the expected rate for this type of facility.

Project Status

The City of Lincoln requested by resolution (No. 87-23 March 24, 1987), that the California Transportation Commission (CTC) consider a modification of a portion of the current Route 65, adopted in May, 1964. The CTC included the proposed project in the 1988 State Transportation Improvement Program (STIP) Special Studies list of projects. $250,000 has been programmed for right of way preservation in the 1992 STIP for the 95/96 Fiscal Year.

The current project schedule calls for public circulation of the Draft Environmental Impact Statement by July 1995; CTC approval of the route modification in August 1996; completion of the Final Environmental Impact Statement in October 1996; project approval by February 1997, and approval of Plans, Specifications and Estimates in February 2000. Construction of the project's initial stage would occur upon approval of funding and acquisition of right of way.

System Linkage

Route 65 serves as a major north-south highway along the ~~west~~ east side of the Sacramento Valley. It was included as part of the State Highway System under authorization of the State Highway Act of 1909, and made part of the California Freeway and Expressway system in 1959. Highway 65 connects the highly urbanized areas of Sacramento and Roseville with cities of Lincoln, Wheatland, Marysville and Yuba City.

The proposed project is discussed in the Route 65 Concept Report prepared by Caltrans in 1986. This report called for the upgrading of Route 65 to expressway status from Interstate 80 (I-80) to the City of Lincoln with bypasses of the Cities of Roseville and Lincoln. The first segment of Route 65, also known as the Roseville Bypass, has been upgraded to a four-lane expressway between I-80 and Blue Oaks Boulevard.

Capacity

Regional trips with origin and destination of Lincoln are expected to increase significantly as the City's economy grows. Design year (2020) traffic north of Lincoln is projected to increase from the current 10,000 vehicles per day to approximately 22,000 vehicle per day. South of Lincoln, traffic volumes are expected to increase from the current 15,000 vehicles per day to approximately 70,000 vehicles per day.

The Level of Service on existing Route 65 within the project limits is projected to deteriorate from the current Level of Service D to Level of Service F by the year 2005.

The existing roadway's traffic carrying capacity is limited by the presence of numerous driveways and intersections. The current traffic congestion is expected to increase as the area develops. The "Main Street" nature of the existing facility is not conducive for expansion to account for the anticipated increase traffic volumes.

Transportation Demand

The District 3 System Management Plan (SMP) dated August 1992, indicates that the concept facility for Route 65 is a four-lane expressway with a bypass of Lincoln. Traffic volumes anticipated in the SMP are consistent with traffic projections for the proposed facility.

Social/Economic Demands

The General Plans for Placer County and the City of Lincoln indicate that the economy will experience continued growth and a need to increase capacity on Route 65. The transportation and circulation elements of these plans call for the planning and construction of a Route 65 bypass west of the City of Lincoln. Traffic studies were prepared based on the proposed developments discussed in the General Plans.

Modal Interrelationships

The Lincoln Airport is located northwest of the City of Lincoln. Improved access would be made possible by realignment of Route 65 to the west and direct connections to either Nicolaus Road and/or Nelson Road.

Transit service is provided in the area by Lincoln Transit and Placer County Transit. The City of Lincoln currently operates a transit service on weekdays throughout central Lincoln. No expansion plans are being considered at this time. Placer County Transit provides bus service to Rocklin and Loomis. Service to Roseville is also provided to allow for connections to the Roseville Commuter shuttle and Sacramento Regional Transit. Greyhound Bus Line provides scheduled stops between Lincoln and Sacramento twice daily.

No passenger rail service is currently available from Lincoln; the Placer County Transportation Commission plans to conduct a rail feasibility study for the extension of Light Rail from Roseville to Lincoln. The Study is expected to begin in the Spring of 1994.

Park and Ride facilities are being planned as part of the proposed project. These facilities can serve as an interface between the existing transit services and promote ride sharing.

Safety

The accident rates on existing Highway 65 were determined based on the Traffic Accident Survey Analysis System (TASAS) listing accidents for the given post miles within the proposed project's limits. Based upon this information, the accident rate for the entire length of the proposed project is slightly higher than expected for a conventional two-lane highway.

One segment of existing Highway 65 within the project limits is significantly higher than expected. The actual accident rate at the downtown Lincoln intersections (First Street through 7th Street) is approximately 5.9 times the expected rate.

The accident rate in Sheridan was approximately four times the expected rate during the three year period from 1985 - 1988. Current data for the three period from 1991 to 1994 indicates that the total accident rate has dropped to approximately 1.1 times the expected rate. This is largely due to a safety project at Sheridan completed in May of 1988, which flattened the curves at the existing at-grade railroad crossing and added left-turn channelization.

The proposed project will relieve congestion and thus, reduce accident potential in downtown Lincoln by providing an initial four-lane to two-lane expressway to carry regional traffic around the city to the west. Current expected accident rates for total accidents are 1.8 per million vehicle miles. A four-lane expressway would have an expected total accident rate of 1.07 per million vehicle miles. The longer alternatives would continue the bypass to north of Sheridan superseding the existing at-grade railroad crossing also reducing accident potential at this location.

Roadway Deficiencies

Existing Route 65 in downtown Lincoln is operating at Level of Service (LOS) D during peak hours. With projected growth, the LOS will deteriorate to F by the year 2005. Route 65 between Lincoln and Sheridan is currently operating at LOS C/D during peak hours. The LOS is expected to drop to LOS E by the year 2005 and LOS F 2010 with project growth. To maintain a LOS of D on existing Route 65, widening to four-lanes would be required through Lincoln by the year 2000. To maintain a LOS of D on existing Route 65 between Lincoln and Sheridan widening to four-lanes would be required by the year 2005. Upgrading existing Route 65 to four-lane freeway through these areas is not practical due to the presence of numerous road and driveway connections and the limited available width through downtown Lincoln.

The shorter bypass alternatives would address roadway deficiencies through downtown Lincoln by providing a four-lane freeway bypass from just south of Industrial Boulevard to just south of Wise Road. However, the shorter alternatives would not address the roadway deficiencies between Lincoln and Sheridan where the LOS is expected to deteriorate to the point where a four-lane facility is needed in this area by the year 2005.

The longer bypass alternatives would address the roadway deficiencies through downtown Lincoln and between Lincoln and Sheridan. These alternatives would provide a four-lane to two-lane expressway upgradable to four-lane freeway bypass from just south of Industrial Boulevard to Bear River Bridge.

PROPOSED ACTION AND PROJECT ALTERNATIVES

A. Proposed Action

The project proposal calls for the construction of a State Route 65 bypass of the downtown area of the City of Lincoln on new right of way in Placer County, California (See Exhibit 1). The ultimate facility being planned is a four-lane freeway with interchanges at selected locations. Initial construction would involve an access controlled expressway having segments of two or four lane roadways based upon projected traffic demands. The ultimate freeway and four lane expressway would have a 21.3 m (70 ft) median and a minimum right of way width of 70.1 m (230 ft). Typical cross sections for the four-lane and two-lane roadways are shown on Exhibit 2.

B. Description of Alternatives

Eleven alternative alignments and the "No Build" alternative were considered. Six alignments are still being considered as shown on Exhibit 3 and are discussed under "Alternatives Under Consideration". Five of these alignments, shown on Exhibit 4 were rejected by a Project Development Team consisting of representatives of the Federal Highway Administration, City of Lincoln, Placer County and California Department of Transportation and are discussed below under "Alternatives Withdrawn from Consideration". A discussion of the "No Build" Alternative has been provided.

1. Alternatives Under Consideration

Alternative AA Alignment

The AA alignment commences .48 km (0.3 mi) south of the intersection of existing Route 65 and Industrial Boulevard at Post Mile T12.5 (see Exhibit 4). The alignment veers from the existing highway turning northwest, crosses over Industrial Boulevard and the Southern Pacific Transportation Company (SPTC) railroad tracks. The alignment turns north where it intersects Moore Road approximately 609.6 m (2000 ft) west of the Moore Road/Joiner Parkway intersection. The alignment continues in a northerly direction crosses Nicolaus Road approximately 609.6 m (2000 ft) west of the Nicolaus Road/Joiner Parkway intersection; it then passes over the SPTC tracks and existing Route 65 turning in a northwesterly direction rejoining the existing highway 0.40 km (0.3 mi) south of Wise Road at Post Mile 17.0. This alternative has a total length of approximately 8.05 km (5.0 miles).

Stage construction of the facility would include a four-lane divided expressway from its southern terminus to just north of Nicolaus Road. The facility would then be reduced to a two-lane roadway where it would transition back to the existing conventional two lane highway at its northern terminus.

Three highway structures will be required to separate the proposed alignment from existing facilities. Construction of overhead structures will be required to cross Industrial Boulevard and the SPTC tracks south of Lincoln and the SPTC tracks and the existing highway north of Lincoln. A partial interchange is planned at Industrial Boulevard providing a southbound off-ramp and a southbound on-ramp only. A partial cloverleaf interchange also is proposed at the alignment's intersection with Nicolaus Road.

Additional structures will be required at all stream crossings. The AA alignment will cross Ingram Slough, Auburn Ravine, and several branches of Markham Ravine. The type of structures and their spans have yet to be determined. Channelization work would be necessary at most stream crossings.

A Park-n-Ride lot is planned in conjunction with the AA alignment south of the proposed Industrial Boulevard/Southern Pacific Transportation Company's Overhead. The proposed lot will be built in the intervening area between the existing highway and Industrial Boulevard.

Selection of this alternative alignment was based upon several factors. This alignment was laid out to provide the best possible geometrics at Nicolaus Road to provide good capacity, weaving and sight distance and storage between intersections on Nicolaus Road. This alignment was very similar in the type of facility and location to that of the adopted route. It was of short length and did not conflict with planned development at the time of selection. In addition, the alignment generally avoids lands whose acquisition costs would be high given that development will have occurred prior to approval of this project.

Alternative A5 Alignment

The A5 alignment commences .48 km (0.3 mi) south of the intersection of existing Route 65 and Industrial Boulevard at Post Mile 12.5 (see Exhibit 3). The alignment diverges from the existing highway turning northwest, crossing Industrial Boulevard and Southern Pacific Transportation Company's tracks. The alignment turns north where it intersects with Moore Road, approximately 548.6 m (1800 ft) west of the Moore Road/Joiner Parkway intersection. The alignment continues in a northerly direction crossing Nicolaus Road approximately 731.5 m (2400 ft) west of the Nicolaus Road/Joiner Parkway intersection, passes over the SPTC tracks and existing highway turning northwest, rejoining the existing highway 0.48 km (0.3

mile) south of Wise Road at Post Mile 17.0. This alternative has a total length of approximately five miles 8.05 km (5.0 miles).

Stage construction of the facility would include a four-lane divided expressway from its southern terminus to just north of Nicolaus Road. The facility would then be reduced to a two-lane roadway where it would transition back to the existing conventional two-lane highway at its northern terminus.

Three highway structures will be required to separate the proposed alignment from existing facilities. Construction of overhead structures will be required at Industrial Boulevard and the Southern Pacific Transportation Company's tracks on the south. A partial interchange is planned at Industrial Boulevard providing a southbound off-ramp and a southbound on-ramp only. A partial cloverleaf interchange will also be constructed at the alignment intersection with Nicolaus Road. A second overhead structure will necessary to cross the SPTC tracks and existing highway north of Lincoln.

Additional structures will be required at all stream crossings. The A5 alignment will cross Ingram Slough, Auburn Ravine, and several branches of Markham Ravine. The type of structures and their spans have yet to be determined. Channelization work would be necessary at most stream crossings.

A Park-n-Ride lot is planned in conjunction with the A5 alignment south of the proposed Industrial Boulevard/Southern Pacific Transportation Company Track overhead. The proposed lot will be built in the intervening area between the existing highway and Industrial Boulevard.

This alignment was created to avoid Lincoln Airport/park area and Markham Ravine Estates in the event they would develop before route adoption.

Alternative A5C1 Alignment

The A5C1 alignment begins .48 km (.3 mi.) south of the intersection of existing Route 65 and Industrial Boulevard at Post Mile 12.5 (see Exhibit 3). This alignment diverges from the existing highway approximately 518.2 m (1700 ft) south of Industrial Boulevard turning northwest crossing Industrial Boulevard and the Southern Pacific Transportation Company's tracks. The alignment turns north where it intersects Moore Road, approximately 548.6 m (1800 ft) west of the Moore Road/Joiner Parkway intersection. The alignment continues in a northerly direction crossing Nicolaus Road, approximately 731.5 m (2400 ft) west of the Nicolaus Road/Joiner Parkway intersection; it parallels Lakeside Drive and then swings in a northwesterly direction. The alignment intersects Wise Road, crosses Coon Creek and then turns in a northerly direction bisecting Dowd Road 1,219.2 m (4000 ft) south of its intersection with Dalby Road. The alignment proceeds until it

rejoins the existing highway at a point just south of the Bear River. The total length of this alignment is 18.19 km (11.3 miles).

Staged construction of the facility is planned in which a four-lane divided expressway constructed from its beginning south of Lincoln to just north of Nicolaus Road. The facility would then be reduced to a two-lane expressway for its remaining length until rejoining the existing highway north of Sheridan.

Local road connections in the initial phase would include partial interchanges at Industrial Boulevard and Nicolaus Road and at grade connections with Wise Road and Riosa Road. For the ultimate freeway interchanges would be constructed at Nicolaus Road, Wise Road, and Riosa Road.

Construction of an overhead structure crossing would be required for the Industrial Boulevard and Southern Pacific Transportation Company's tracks south of Lincoln.

Bridges would be constructed at all stream crossings along the alignment. This alignment crosses the following streams: Ingram Slough, Auburn Ravine, Markham Ravine, Coon Creek, several branches of Yankee Slough. The alignment also crosses the Camp Far West Aqueduct near Sheridan.

Park-n-Ride lots are planned in conjunction with this alignment at the following locations: Lot 1 is to be located south of the proposed Industrial Boulevard/SPTC tracks overhead in the area between the existing highway and Industrial Boulevard. Lot 2 would be sited in the vicinity of the proposed Riosa Road interchange.

The A5C1 alignment was developed in recognition of the difficulty and expense required to upgrade existing Route 65 to freeway north of Lincoln and the additional expense and maintenance problems associated with a second railroad crossing.

Alternative AAC2 Alignment

The AAC2 alignment commences .48 km (0.3 mi.) south of the intersection of existing Route 65 and Industrial Boulevard at Post Mile 12.5 (see Exhibit 3). The alignment swings northwest crossing over Industrial Boulevard and the Southern Pacific Transportation Company's tracks. The alignment turns north where it intersects Moore Road, approximately 609.6 m (2000 ft) west of the Moore Road/Joiner Parkway intersection. The alignment continues in a northerly direction crosses Nicolaus Road, approximately 609.6 m (2000 ft) west of the Nicolaus Road/Joiner Parkway intersection. As the alignment approaches the Southern Pacific Transportation Company's tracks at a distance of approximately 0.48 km (0.3 mi) it turns to the northwest intersecting Wise Road. After the alignment crosses over Coon

Creek, it turns back to the north, intersects Dowd Road 304.8 m (1000 ft) south of Dalby Road, and continues until it rejoins existing Highway 65 approximately 2.90 km (1.8 miles) north of Sheridan at Post Mile 23.4.

Staged construction of the facility would include a four-lane divided expressway from its southern terminus to just north of Nicolaus Road. The facility would then be reduced to a two-lane expressway for its remaining length until rejoining the existing highway north of Sheridan.

Connections with local roads for the ultimate freeway would be provided by the construction of interchanges at Nicolaus Road, Wise Road, and Riosa Road. Under staged construction plans, an interchange would be constructed at Nicolaus Road and with at grade intersections at Wise Road and Riosa Road.

Construction of an overhead structure crossing would be required for Industrial Boulevard and SPTC tracks south of Lincoln. A partial interchange is also planned at Industrial Boulevard providing a southbound off-ramp and a southbound on-ramp only.

Bridges would be constructed at all stream crossing along the alignment. This alignment crosses the following streams: Ingram Slough, Auburn Ravine, Markham Ravine, Coon Creek, and several branches of Yankee Slough. the alignment also crosses the Camp Far West Aqueduct near Sheridan.

Park-n-Ride lots are planned in conjunction with this alignment at the following locations: Lot 1 is located south of the proposed Industrial Boulevard/Southern Pacific Transportation Company's track overhead in the area between the existing highway and Industrial boulevard. Lot 2 is located in the vicinity of the proposed Riosa Road Interchange.

The AAC2 alignment was developed in an attempt to avoid areas of extensive vernal pools at the juncture of the A and C alignments.

Alternative D1 Alignment

The D1 alignment starts .48 km (0.3 mi) south of the intersection of existing Route 65 and Industrial Boulevard at Post Mile 12.5
(see Exhibit 3). This alignment leaves the existing highway and proceeds in a northwesterly direction crossing over Industrial Boulevard and the Southern Pacific Transportation Company's tracks. It intersects Moore Road and Nelson Lane before turning northward crossing Nicolaus Road passing the Lincoln Airport to the west. The alignment continues due north a distance of 5.64 km (3.5 miles) before swinging northwest crossing Dowd Road approximately 91.4 m (300 ft) north of its intersection with Dalby Road. The alignment proceeds in a northwest direction crosses Riosa Road and

rejoins the existing highway approximately 0.16 km (0.1 mile) from the Bear River at Post Mile 23.8. The total length of this alignment is 19.0 km (11.8 miles).

The proposed ultimate facility for this alignment is a controlled access four-lane freeway. Interchanges would be constructed at Nelson Lane, Wise Road and Riosa Road. Under staged construction, however, a four-lane divided expressway would be constructed to Nicolaus Road and two-lane expressway north of Nicolaus Road.

Local road connections will be provided in the initial stage by construction of an interchange at Nelson Lane and at grade connections at Wise Road and Riosa Road.

Additional structures required including the construction of an overhead would be necessary at Industrial Boulevard and the SPTC tracks and a partial interchange at Industrial Boulevard providing a southbound off-ramp and a southbound on-ramp only. Underpasses would also be needed at Nicolaus Road and Dowd Road. Dalby Road would be realigned to allow construction of the Dowd Road underpass.

Bridges would be constructed at all stream crossings along the alignment. The type and length of these structures have yet to be determined. This alignment crosses the following streams: Ingram Slough, Auburn Ravine, Markham Ravine, Coon Creek, several branches of Yankee Slough. This alignment also crosses the Camp Far West Aqueduct.

Park-n-Ride lots are planned in conjunction with this alignment at Industrial Boulevard and Riosa Road.

The D1 alignment was developed in response to the Corps of Engineers recommendation that alignments be developed that completely avoided wetlands impacts or if this was not possible, to develop alternatives which had the fewest possible wetland impacts.

Alternative D13 Alignment

The D13 alignment commences 0.3 mi. (.48 km) south of the intersection of existing Route 65 and Industrial Boulevard at Post Mile 12.5 (see Exhibit 3). This alignment deviates from the existing highway just south of its intersection with Industrial Boulevard. It then crosses over Industrial Boulevard and the Southern Pacific Transportation Company's tracks and proceeding in a westerly direction. The alignment intersects Moore Road and Nelson Lane before turning to the north crossing Nicolaus Road and passing the Lincoln Airport to the west. The alignment continues in a northerly direction a distance of 5.64 km (3.5 miles) then swings northwest and crosses Dowd Road approximately 91.4 m (300 ft) north of intersection

with Dalby Road. It continues in a northwest direction, intersects Riosa Road, and rejoins the existing highway 0.1 mile from the Bear River at Post Mile 23.8. The total length of this alignment is 20.60 km (12.8 miles).

The proposed ultimate facility to be constructed on this alignment is a controlled access four-lane freeway. Interchanges would be constructed at Nelson Lane, Wise Road and Riosa Road. An overhead would be built over Industrial/SPTC railroad tracks and underpasses constructed at Nicolaus Road and Dowd Road. A partial interchange is also planned at Industrial Boulevard providing a southbound off-ramp and a southbound on-ramp only.

Under staged construction, however, a four-lane divided expressway would be constructed from the project's southern terminus to Nicolaus Road and a two-lane expressway north of Nicolaus Road. Local road connections in the initial stage would be provided by construction of an interchange at Nelson Lane and at grade intersections at Wise Road and Riosa Road.

Bridges would be constructed at all stream crossings along the alignment. The type and length of span(s) of these structures have yet to be determined. This alignment crosses the following streams: Ingram Slough, Auburn Ravine, Markham Ravine, Coon Creek, and several branches of Yankee Slough. This alignment also crosses the Camp Far West Aqueduct.

The D13 alignment was developed in response to public reaction to the D1 alignment impacts to residences on Rockwell Lane and in an effort to further reduce wetland impacts at the south end of the bypass. Based on information available to date, the D13 alignment is the preferred alternative for the bypass since it has the least overall impact to sensitive biological resources, areas of proposed land development and existing residences. It is also the most cost effective for the bypass in terms of dollar cost per mile of new roadway.

2. Estimated Cost of Bypass Alternatives

C. Estimated cost of Bypass Alternatives

Alternative AA

Estimated Item	Four/Two-lane Cost	Four-lane Cost
Roadway Items	$28,605,000.00	$30,988,000.00
Structure Items	$ 6,773,000.00	$ 6,773,000.00
Subtotal Construction	$35,378,000.00	$37,761.000.00
Right of Way	$10,900,000.00	$10,900,000.00
Total Project Cost	$46,278,000.00	$48,661,000.00

Alternative A5

Estimated Item	Four/Two-lane Cost	Four-lane Cost
Roadway Items	$28,239,000.00	$31,416,000.00
Structure Items	$ 6,773,000.00	$ 6,773,000.00
Subtotal Construction	$35,012,000.00	$38,189,000.00
Right of Way	$11,108,000.00	$11,108,000.00
Total Project Cost	$46,120,000.00	$49,297,000.00

Alternative A5/C1

Estimated Items	Four/Two-lane Cost	Four-lane Cost
Roadway Items	$42,370,000.00	$54,236,000.00
Structure Items	$ 7,865,000.00	$ 7,865,000.00
Subtotal Construction	$50,235,000.00	$62,101,000.00
Right of Way	$11,247,000.00	$11,247,000.00
Total Project Cost	$61,482,000.00	$73,348,000.00

Alternative AA/C2

Estimated Items	Four/Two-lane Cost	Four-lane Cost
Roadway Items	$46,185,000.00	$54,236,000.00
Structure Items	$ 7,865,000.00	$ 7,865,000.00
Subtotal Construction	$54,050,000.00	$62,101,000.00
Right of Way	$12,807,000.00	$12,757,000.00
Total Project Cost	$66,857,000.00	$74,858,000.00

Alternative D1

Estimated Items	Four/Two-lane Const	Four-lane Cost
Roadway Items	$43,270,000,00	$49,378,000.00
Structure Items	$ 7,865,000.00	$ 7,865,000.00
Subtotal Construction	$51,072,000.00	$57,243,000.00
Right of Way	$10,000,000.00	$10,000,000.00
Total Project Cost	$61,072,000.00	$67,243,000.00

Alternative D13

Estimated Items	Four/Two-lane Cost	Four-lane Cost
Roadway Items	$37,247,000.00	$53,290,000.00
Structure Items	$ 7,865,000.00	$ 7,865,000.00
Subtotal Construction	$45,112,000.00	$61,155,000.00
Right of Way	$ 9,567,000.00	$ 9,567,000.00
Total Project Cost	$54,679,000.00	$70,722,000.00

3. No Build Alternative

The "no build" alternative would have a negative impact on Lincoln's economic future and on interregional traffic circulation. Traffic conditions would deteriorate to the point where Lincoln's economic position would be jeopardized due to uncertain movement of goods and services on Highway 65. Goods and services moving along the Highway 65 corridor between the Roseville/Interstate 80 area, the Marysville/Highway 20 area and Chico would also be impeded. Emergency and public services would be hampered as well.

As traffic increases, noise and air pollution levels would also rise in the vicinity of Lincoln. Therefore, the "no-build" does not address the basic problems of this project. Congestion will increase as the area and region develops. The accident rate can be expected to rise as congestion increases. Regional trips will be increasingly delayed as the level of service falls.

4. Alternatives Withdrawn From Consideration

Alternative alignments A3, A4, D2, E, and T (See Exhibit 4) were considered and deemed not feasible for further consideration for the following reasons:

Alternative A3 and A4 Alignments

The A3 and A4 alignments coincide with the A5 alignment at the south end of the bypass. At Auburn Ravine they turn northwest, running parallel to the section line. North of Nicolaus Road, the A3 and A4 continue on the west side of the section line. These alignments cross over the railroad tracks and the existing highway, then turn in a northwesterly direction and conform to existing Route 65. These alternatives were developed based on the assumption that the area west of the section line was less sensitive biologically than east of the section line. Current studies indicate that the remaining A alignments have approximately the same impact upon biological resources. In addition, recent approval of subdivision plans in this area makes the cost of acquiring the right of way unreasonably high compared to other A alignments east of the section line.

Alternative D2 Alignment

The D2 alignment was developed in an attempt to reduce the impacts on wetlands and residents in the southern portion of the project. This alignment begins about 1.3 miles south of the D1 line. The D2 is roughly parallel to the D1 line upon leaving the existing highway to near Nicolaus Road. North of Nicolaus Road the D2 line coincides with the D1 alignment. The D2 alignment would require the removal of four to seven residential dwellings and possible soundwalls for approximately five dwellings. The D2 line has a greater impact on dwellings and vernal pools than the D1 line, based on a preliminary biological survey. Due to the alignment's longer length, remoteness from Lincoln and greater potential impacts upon wetlands than the D1 alignment it was dropped from further consideration.

Alternative E Alignment

The alternative E alignment begins south of Industrial Boulevard and turns in a northeasterly direction around the east side of Lincoln and proceeds through vacant land until it crosses State Route 193. After crossing Route 193, the alignment proceeds northerly and crosses Auburn Ravine. North of Auburn Ravine, the alignment crosses Virginiatown Road, McCourtney Road and Gladding Road before rejoining existing Route 65 just south of its intersection with Wise Road.

This alignment was developed as an alternative to the A alignments. The E alignment distance is approximately 2.6 miles out of direction as compared to the existing facility or the A line. The traffic analysis performed for the

Stage II Project Work Program indicated that a major portion of through traffic on Route 65 would exit the expressway and proceed through Lincoln to save time and distance of travel. This alignment, therefore, does not satisfy the requirements of this project and based on recent annexations to the City of Lincoln, extends through an area with approved residential and commercial development.

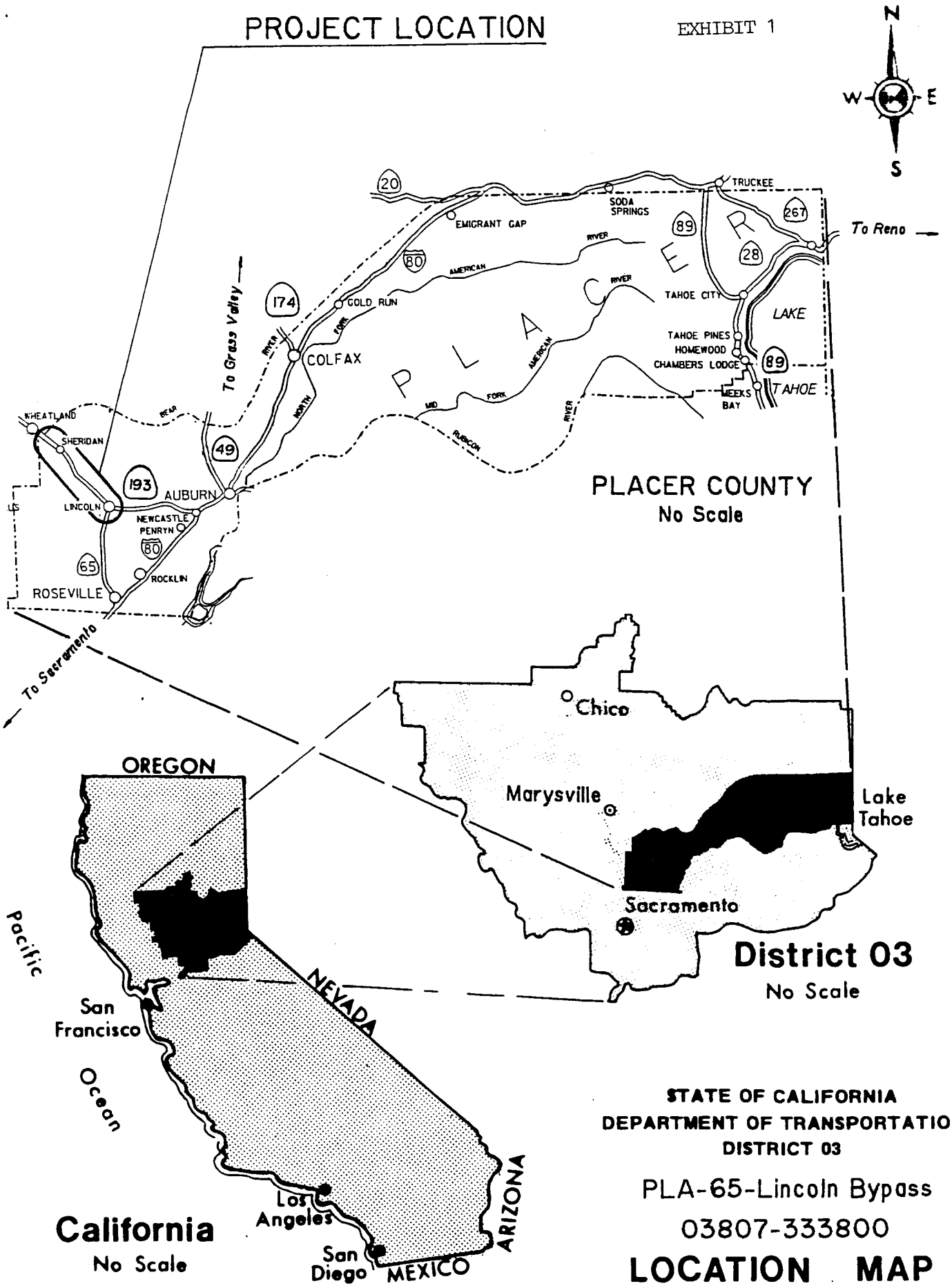
Alternative T Alternative

Alternative T upgrades the existing highway to four lanes. From Industrial Boulevard to Auburn Ravine and from Gladding Road to near Wise Road, a four-lane expressway with 14.0 m (46 ft) median would be constructed. From Auburn Ravine to Gladding Road, the facility would narrow to four lanes plus a continuous left-turn lane. The proposed upgrades through downtown Lincoln can be accomplished by eliminating on-street parking and narrowing the sidewalks from 3.7 m (12 ft) to 2.4 m (8 ft).

The primary disadvantage of this alternative is that it fails to satisfy the regional need for an adequate freeway system in the area. It does not alleviate the problem of numerous cross streets and driveways. As Lincoln grows, traffic through the Central Business District will become more congested and delays and accident rates will likely increase. In addition, widening to four lanes through the downtown area does not leave the option for future widening. The 10 year (2010) and 20 year (2020) levels of service are projected to be E and F respectively. After the 20-year design period the only viable option to enhance the level of service and capacity would be to construct a bypass.

PROJECT LOCATION

EXHIBIT 1



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
DISTRICT 03

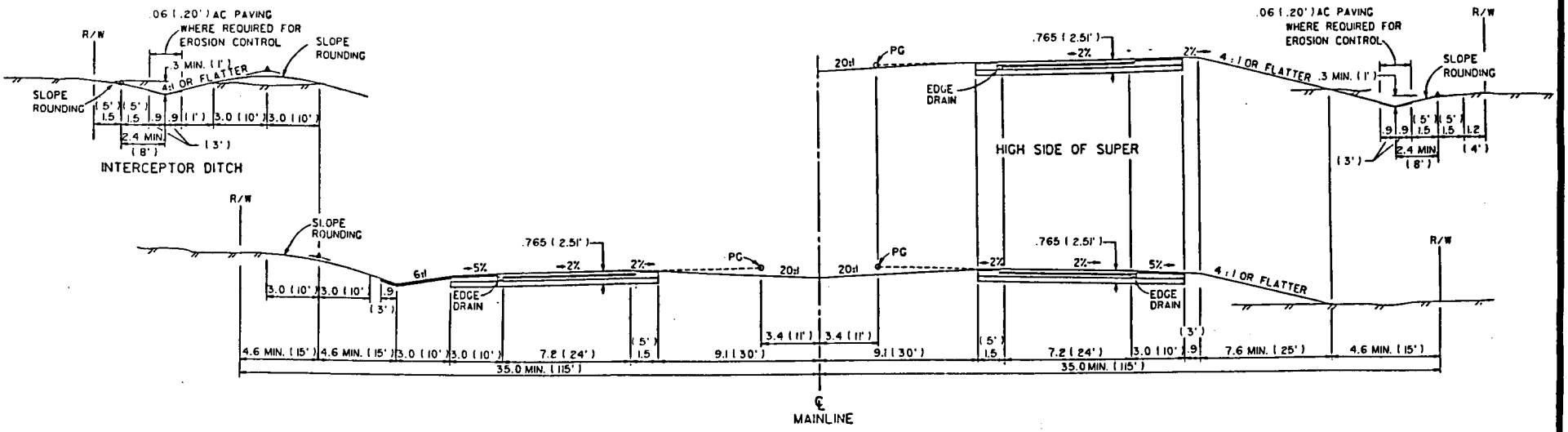
PLA-65-Lincoln Bypass

03807-333800

LOCATION MAP

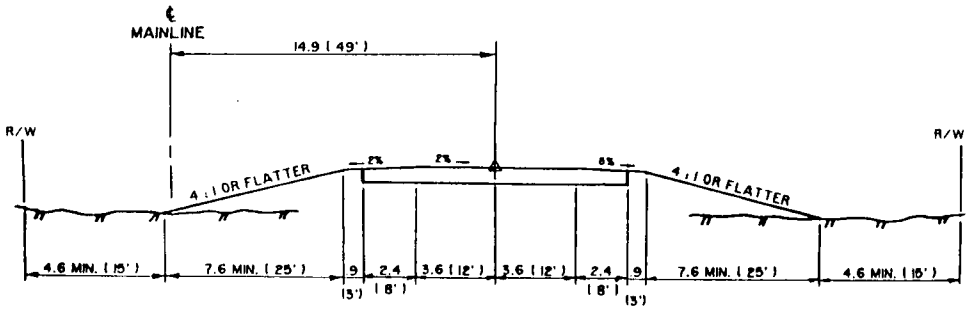
October 1993

EXHIBIT 2



4 - LANE SECTION

NOTE:
All dimensions are in Meters unless shown otherwise.



2 - LANE SECTION

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL BRANCH
DISTRICT 3

PLA-65-Lincoln Bypass

TYPICAL CROSS SECTIONS

03807-333800

SCALE 1:400 (1"=30')	DATE January 1994

RE[illegible]94

03-PLA-65
Lincoln Bypass
P.M. R12.2/R23.8
E.A. 333800

SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS

Environmental technical studies for the project are currently underway; however, only the results of the biological and cultural resources investigations are available at this time.

An estimate of the sensitive biological resources within each alignment for the project is provided in Attachment A.

Preliminary evaluations of potential impacts wetlands, historic architectural and archaeological resources have been preformed and are discussed below:

1. Wetlands

The initial delineation identifying the wetlands within the project study area was verified by the Army Corps of Engineers in September of 1991. Recertification of the delineations performed by Beak Consultants will be submitted in September of 1994.

A preliminary wetlands impact assessment has been performed. The impacts were assessed in two ways, the first calculates the number of occurrences of each wetland type that is within the proposed right of way for each alternative alignment. The second procedure for calculating the impacts is by estimating the acreage of wetland that will be filled per alignment (See Attachment B). The acres of fill estimates only the areas where fill will be directly placed and does not account for indirect impacts (See Attachment C).

The A5C1 and AAC2 alignments have the greatest occurrences of vernal pools and swales within their proposed right of way. Likewise these alignments will have the greatest amount of fill placed in pools and swales. Although the D1 and D13 alignments are much longer than either the AA or A5 alignments the D alignments will impact fewer vernal pools and swales. The estimate of vernal pools and wales for the D alignments is between 155-163, while the AA is 175 and the A5 is 217.

The D13 and D1 alignments have the greatest estimate of fill in freshwater marsh primarily because of impacts to Markham Ravine.

The A5C1 has the greatest estimated total acre of fill to be placed in wetlands with 20.8 acres. Approximately half (10.3) of the fill will be in vernal pools and swales.

The D1 alignment has the second highest acreage of fill in wetlands with 20.3 and the D13 has the third highest fill with 18.3 acres of impact. Unlike A5C1, the majority of fill will be in freshwater marsh, the D1 estimated at 10.6 acres of fill and the D13 with 12.4. Impacts to vernal pools and swales are estimated to be 4.4 acres for the D1 and 3.4 acres of fill for the D13 alignment.

2. Cultural Resources

An historic architectural survey was performed and several properties were identified which appeared eligible for inclusion on the National Register of Historic Places. None of these properties are located within alignments under consideration.

An archaeological surveys was performed and 15 sites were recorded. Of these properties only two are believed to be eligible for inclusion on the National Register of Historic Places. These properties are located on the AAC2 alignment and would be impacted.

ESOURCES WITHIN EACH ALIGNMENT FOR THE LINCOLN BYPASS

FAIRY SHRIMP (#VPS)	TREES VALLEY OAK=Ql BLUE OAK=Qd	VERNAL MARSH	CREEKS (Xings)	FRESHWATER MARSH	OPEN WATER	ESTIMATED WETLAND TOTALS
15 POOLS (P)	112 Ql=11 Qd=90	9 MARSHES (M) 2.0 ACRES	6 XINGS (X)	5 MARSHES 2.0 ACRES	0	9ACRES
13P	190 Ql=57 Qd=120	11M 2.0 ACRES	5X	3M 1.5 ACRES	0	9ACRES
17P	224 Ql=118 Qd=90	12M 2.5 ACRES	8X	13M 4.5 ACRES	0	21ACRES
16P	211 Ql=75 Qd=120	9M 3.0 ACRES	8X	7M 2.5 ACRES	0	15ACRES
28P	169 Ql=133 Qd=2	9M 3.0 ACRES	7X	13M 11 ACRES	1	20.5 ACRES
19P	216 Ql=199 Qd=2	6M 2.0 ACRES	5X	11M 12.5 ACRES	1	18.5 ACRES

1 1993)

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To Henry Bass	From Lucie Adams
Co. 03 - Environ Dr	Co. Envir. Division
Dept.	Phone # 8-435-3415
Fax # 8-457-4457	Fax #

ATTACHMENT A

ESTIMATED ACRES OF FILL IN WETLANDS IN PROJECT ALIGNMENTS

ALIGNMENT	VERNAL POOL	VERNAL SWALE	VERNAL MARSH	FRESHWATER MARSH	RIPARIAN	WILLOW SCRUB	TOTAL
AA	3.98	1.38	1.87	1.41	0	0	8.64
A5	3.46	0.87	1.71	1.91	1.13	0	9.08
AAC2	7.66	2.07	2.89	2.44	0	0	15.06
A5C1	10.26	2.41	2.24	4.43	1.48	0	20.82
D1	4.37	0.92	2.86	10.61	1.48	0.08	20.32
D13	3.39	0.83	1.72	12.35	0	0	18.29

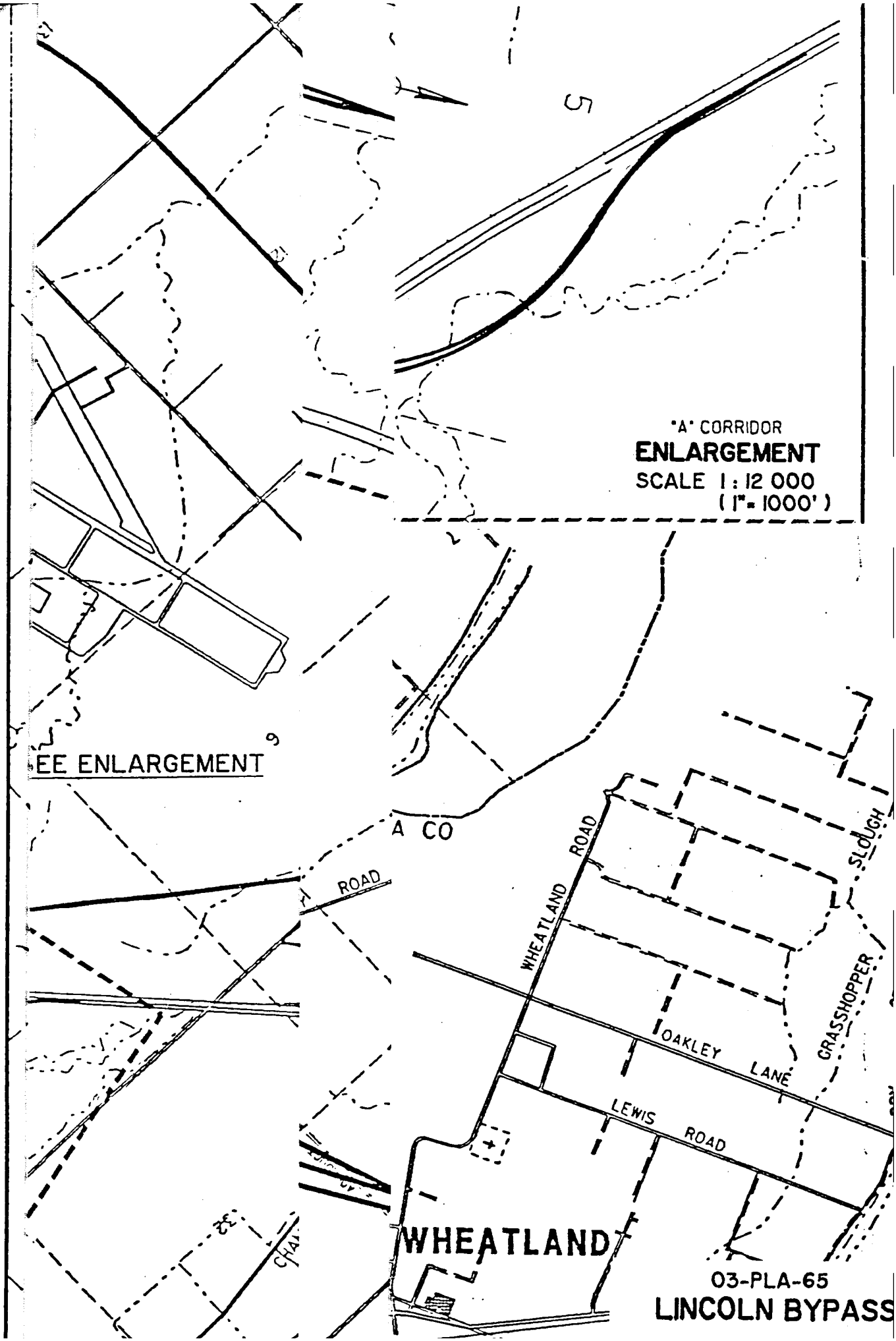
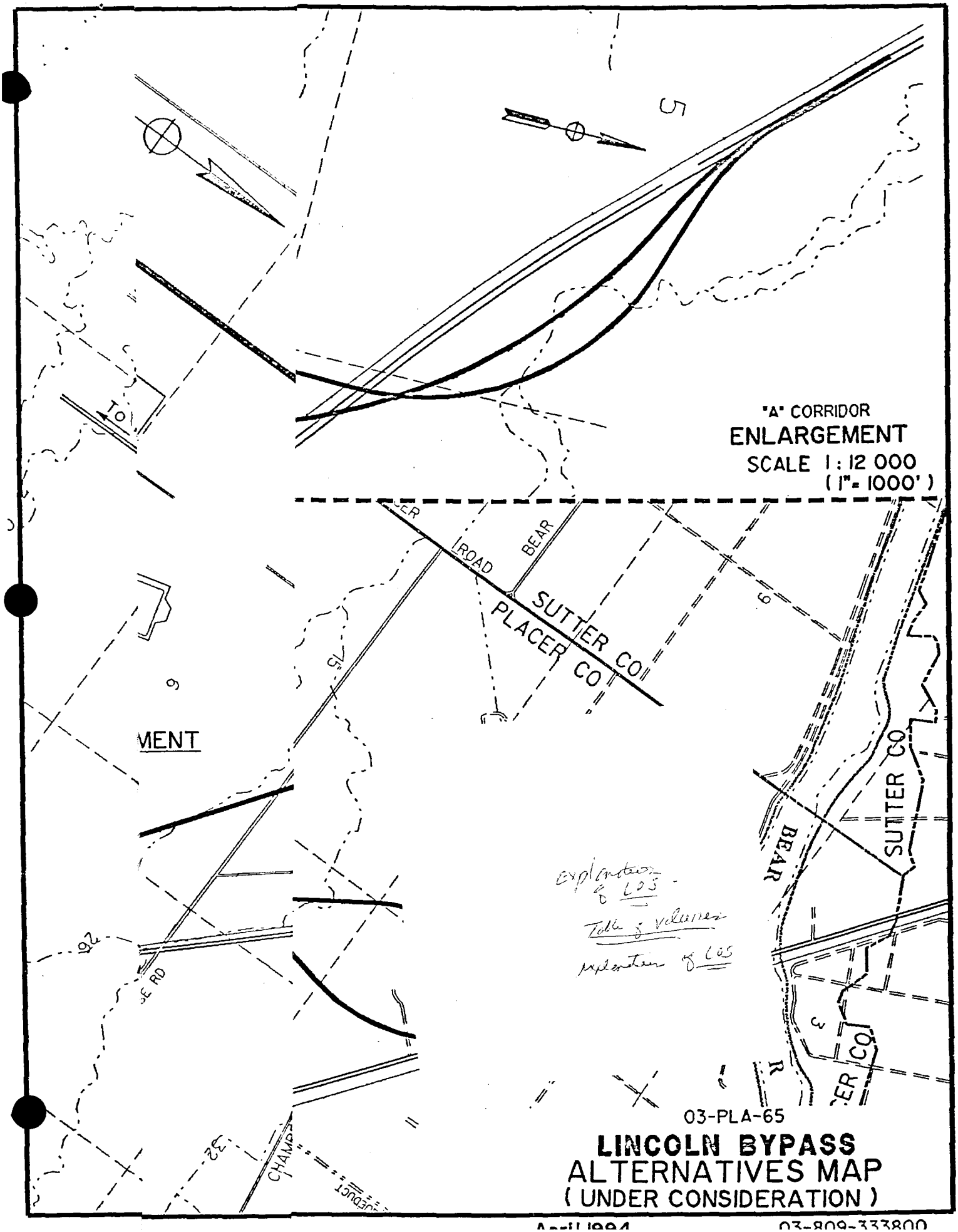

"A" CORRIDOR
ENLARGEMENT
SCALE 1 : 12 000
(1" = 1000')
EE ENLARGEMENT
A CO
ROAD
WHEATLAND ROAD
SLOUGH
GRASSHOPPER
OAKLEY LANE
LEWIS ROAD
WHEATLAND
03-PLA-65
LINCOLN BYPASS

EXHIBIT 3



April 1994 03-809-333800

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY PETE WILSON, *Governor*

DEPARTMENT OF TRANSPORTATION
DISTRICT 3
P.O. BOX 911
MARYSVILLE, CA 95901
TDD (916) 741-4509
FAX (916) 741-4457
(916) 741-4498

May 12, 1994

03-Pla-65
PM R12.2/R23.8
333800
Lincoln Bypass

(SEE ATTACHED LIST)

Dear Mr/Ms.:

Pursuant to the terms of the NEPA/404 Integration MOU, an interagency coordination meeting was held on May 5, 1994, at the Army Corps of Engineers Sacramento District Office to discuss the proposed State Route 65 Bypass of the City of Lincoln in Placer County. The project is sponsored by Caltrans and the Federal Highway Administration. In addition to the project sponsors, meeting participants were the Corps of Engineers, Environmental Protection Agency, U.S. Fish & Wildlife Service and the California Department of Fish & Game (not an MOU signatory).

Participants reviewed and discussed the project purpose and need, alternatives and a comparison of sensitive biological/404 and other environmental resources for each alternative under consideration. There is no official preferred alternative, but the City of Lincoln is protecting the D13 alignment, the most westerly, from further development. The Corps has verified the wetland delineations.

The current project schedule calls for public circulation of the Draft Environmental Impact Statement by July 1995. Per Appendix A of the MOU, Caltrans and the Federal Highway Administration seek your agency's written concurrence or any comments you may have on the NEPA purpose and need, criteria for alternative selection/rejection and alternatives to be evaluated in the draft EIS, based on the discussions at the above meeting. We also request your written agreement to participate as a cooperating agency. If you have any questions, please do not hesitate to contact me.

Sincerely,

Original signed by

JEAN L. BAKER, Chief
Environmental Branch B

cc/bcc: See Attached List

cc: Mr. George Wishman
Federal Highway Administration
U.S. Bank Plaza
980 Ninth Street, Suite 400
Sacramento, CA 95814-2724

Ms. Karen Schaeffer
Regulatory Functions
U.S. Army Corps of Engineers
Sacramento District
1325 J Street
Sacramento, CA 95814-2992

Mr. Art Champ, Chief
Regulatory Functions
U.S. Army Corps of Engineers
Sacramento District
1325 J Street
Sacramento, CA 95814-2992

Mr. Paul Jones
Wetlands Program
Environmental Protection Agency
Permitting Section
75 Hawthorn Street (W-7-2)
Sacramento, CA 94105

Mr. Mike Aceituno
Attention: Mark Littlefield
U.S. Fish & Wildlife Service
2800 Cottage Way
Sacramento, CA 95825

Mr. Dave Zezulak
Environmental Services
Department of Fish & Game
1701 Nimbus Road, Suite A
Rancho Cordova, CA 95670

bcc: Joe Caputo, Chief Project Studies
Henry Bass, Env. Br. A
Lucie Adams, HQ Env. Division

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
Sacrameto Field Office
2800 Cottage Way, Room E-1803
Sacramento, California 95825

In Reply Refer To:
PPN 626

June 17, 1994

Ms. Jean L. Baker, Chief Environmental Branch B
California Department of Transportation
District 3
P.O. Box 911
Marysville, CA 95901

Subject: State Route 65 Bypass of the City of Lincoln (Lincoln Bypass), Placer County, California

Dear Ms. Baker:

The U.S. Fish and Wildlife Service (Service) has reviewed your request dated May 12, 1994 for concurrence with the proposed Lincoln bypass project's purpose and need, criteria for alternative selection, and the alternatives to be evaluated in the draft environmental impact statement. A description of the proposed project was transmitted to the Service on April 25, 1994. This description included the above referenced statements.

The Service requires more information on the proposed project's purpose and need statement, alternatives, and selection criteria before we can make a determination to concur or not concur at this planning stage. The comments below are provided for your consideration and to help in revision of the above referenced statements to our satisfaction. These comments will not take the place of any formal comments that may be required under the provisions of the Fish and Wildlife Coordination Act or the Endangered Species Act.

Purpose and Need Statement

The need statement is not clearly identified in the document. Purpose and need are two separate assertions, and should be differentiated in the text.

According to guidelines for implementing the NEPA/Section 404 Integration MOU, the need statement should define the problem or problems, explaining why a project is necessary. The need should be quantified wherever possible. The Service suggests that Caltrans express the need statement in terms of congestion, safety, Regional Transportation Plan policies, or transportation system management improvements. The need for the proposed project should be very well defined by the project development stage.

Much of the necessary language for a clear need statement already exists in the text of the document. We recommend restructuring the format of the need statement to promote better understanding of the problems and concerns that

led to the proposed project. Tables and statistics showing current road use, projected traffic flow, accident rates, local versus interregional traffic, etc. would be useful in identifying the need for the proposed project.

The purpose statement is also unclear and is not adequately supported by the need statement. A purpose statement should state the agency's intentions to solve the problem as described in the need. Given this project's need statement, the purpose statement is too precise. Why is a bypass necessary? The need statement does not discuss the need for a bypass. In what circumstances would a bypass be necessary? This should be clearly identified and discussed in the text.

Proposed Alternatives

The Service met with representatives from Caltrans and the other MOU signatory agencies on May 5, 1994 to discuss the proposed project. The participants discussed several alternative alignments other than the proposed alternatives. These included variations on the existing alternatives in order to avoid impacts to vernal pools, and pushing the alignment farther east, closer to the existing SR 65 alignment to avoid impacts to wetlands and possible archeological sites. The Service is concerned with the potentially high impacts to wetlands and sensitive species associated with the current alternatives. The Service recommends that Caltrans undertake preliminary studies of the other alternatives recommended at the 5 May meeting to ascertain their appropriateness for further NEPA analysis.

Criteria for Selection of Alternatives

The matrix transmitted with the April 25, 1994 package compares impacts to various biological resources for each of the current alternatives. We recommend also including the alternatives that have been discarded into the matrix. Furthermore, the matrix should include the other criteria that Caltrans used to select the current alternatives - residential/commercial impacts, cost, projected traffic flow, etc.. In order for the Service to be able to review the selection criteria for concurrence or nonconcurrence, we will need a complete list of the criteria and the alternatives that were discarded at earlier planning stages.

If you have any further questions regarding these comments, please contact Kristi Young at 916/978-4866.

Sincerely,

Joel A. Medlin

Joel A. Medlin
Field Supervisor

cc: ARD-ES, Portland, OR
COE, Sacramento (Regulatory)
EPA, San Francisco (Wendy Melgin)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

June 28, 1994

Jean L. Baker, Chief
Environmental Branch B
California Department of Transportation
District 3
P.O. Box 911
Marysville, CA 95901

Dear Ms. Baker:

The Environmental Protection Agency has reviewed the information concerning **Route 65: Lincoln Bypass** provided under your cover letter dated May 12, 1994. It appears, from the information provided, that our involvement in the concurrent process established within the NEPA/404 Memorandum of Understanding (MOU) is appropriate inasmuch as projected wetland impacts would likely require an individual Section 404 permit.

We are pleased to offer our initial concurrence on two elements of the project. We concur that: 1) the range of alternatives presented appears to meet the requirements of Section 404; and 2) the project document has adequately included the criteria for including the alternatives presented. We nonconcur, however, that the range of alternatives complies with the National Environmental Policy Act (NEPA). As such, there are several elements that we believe warrant further refinement before proceeding to the next stage in the National Environmental Policy Act (NEPA) process. For purposes of clarity, we've listed the applicable elements from the MOU below and provided comments which relate specifically to each element.

1. Is the Purpose and Need appropriately presented/discussed? The project purpose should be stated without limiting options for "reducing traffic congestion and delays and improving safety" to constructing a bypass. The purpose should be simply stated as "...to reduce traffic delays and congestion, and to improve safety." The need to accommodate such a purpose has been clearly presented, but the means by which to accommodate the purpose is not as clear. For example, some of the congestion comes from local traffic that will continue to use the downtown roadway regardless of whether the bypass is constructed. We question whether the alternatives presented in the document keep the purpose of the project broad enough so that other options are not foreclosed.

2. Does the project document discuss an appropriate range of alternatives? While the document does discuss alternatives, all of the alternatives, with the exception of no action, focus on bypass alignments. There is no discussion of

any other means to accomplish the project purpose. For example, the range of alternatives should include an analysis of constructing a two lane bypass (rationale provided in 1, above) and could include an analysis of perhaps adding signals on the current route or re-routing traffic off of main street or adding additional transit opportunities ("no expansion plans are being considered at this time") and/or a combination of any or all of these **or other such options**. CEQ regulations for implementing NEPA require analysis of all reasonable alternatives [40 CFR §1502.14(a)]. If these are not reasonable alternatives, please provide the rationale for discarding them.

3. Is the (Section 404) least environmentally damaging practicable alternative described as such? This is a major issue which should be addressed before proceeding to the next stage. The information provided clearly indicates that the D13 alignment is the preferred alternative. D13, with the potential for impacts to 18.29 acres of wetlands, would impact twice as much wetland area as alternative alignments AA and A5. As such, D13 does not appear to be the least damaging practicable alternative, based on the information provided..

4. Does the project mitigation plan and implementation schedule adequately accommodate the intent of the NEPA/404 Concurrent Process?

AND

5. Once implemented, would the proposed mitigation plan prevent significant degradation of the aquatic environment from the project? There was no significant discussion of mitigation in the document provided for review. Both of these issues should be addressed before proceeding to the next stage.

In reviewing the information provided, we also note that upgrading of Route 65 to a four lane expressway (in keeping with the August 1992 District 3 System Management Plan, which "indicates that the concept facility for Route 65 is a four-lane expressway with a bypass of Lincoln") is taking place segment by segment. The first "segment" (Roseville Bypass) has already been upgraded to a four lane expressway from I-80 to Blue Oaks Boulevard. Accordingly, we are:

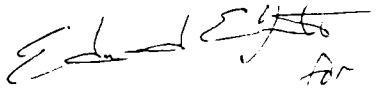
a) unclear of the logical termini for the Lincoln Bypass "segment;" and
b) concerned that the indirect effects and cumulative environmental impacts of the "concept facility" may not be addressed in accord with 40 CFR Sections 1508.7 and 1508.8(b).

We would be very interested in receiving the NEPA documentation prepared for the Roseville Bypass and any other NEPA documentation which may have been prepared pursuant to expanding Route 65. The NEPA document prepared for this particular proposal should include a thorough discussion and analysis of direct and indirect effects and cumulative impacts as defined in the Council on Environmental Quality Regulations for Implementing the National Environmental Policy Act (40 CFR Parts 1500-1508).

Your cover letter also requests that EPA participate as a cooperating agency in the preparation of the EIS for the proposed project. Inasmuch as the proposed project could significantly impact aquatic resources, we believe our involvement as a cooperating agency may be appropriate. At this time we propose that our participation include: 1) review of draft materials pertinent to aquatic resources, such as Section 404(b)(1) analysis, jurisdictional determination, habitat analysis and compensatory mitigation plans; 2) attending a limited number of meetings; and 3) participating in conference calls that might be necessary to resolve particular issues. Normally, the lead **federal** agency (FHWA) prepares a formal request and memorandum of understanding which outlines the specifics of each agency's responsibilities. We will provide a copy of this response to FHWA indicating that we would be a cooperating agency in this effort if requested to do so.

We appreciate your efforts in providing information in keeping with the NEPA/404 MOU. Should you have questions regarding our comments, please contact me at 415-744-1574. If you have questions concerning Section 404 issues, please have your staff contact Wendy Melgin in our Wetlands and Sediment Management Section at 415-744-1966.

Sincerely,



David J. Farrel, Chief
Environmental Review Section
Office of Federal Activities

RT65.df

cc: FHWA, Sacramento (G. Wishman)
COE, Sacramento (A. Champ/K. Schaeffer)
USFWS, Sacramento (M. Littlefield)

STATE OF CALIFORNIA-BUSINESS, TRANSPORTATION AND HOUSING AGENCY PETE WILSON, *Governor*

DEPARTMENT OF TRANSPORTATION
DISTRICT 3
P.O. BOX 911
\RYSVILLE, CA 95901
) Telephone (916) 741-4509
X (916) 741-4457
Telephone (916) 741-4498

February 18, 1997

03-PLA-65
PM R12.2/R23.8
Lincoln Bypass
E.A. 03 333800

Ms. Elizabeth White
U.S. Environmental Protection Agency
Region 9, Wetlands Permits (W-7-2)
75 Hawthorne Street
San Francisco, CA 94105

Dear Ms. White:

The enclosed information relative to the proposed Lincoln Bypass project is being sent to you in preparation for a meeting scheduled on Thursday, March 6, 1997, at 9:00 a.m., in Room 1220 of the Sacramento District Corps of Engineers office. The information includes copies of prior correspondence from your agency and the U.S. Fish & Wildlife Service pursuant to the NEPA/404 MOU. It also includes a summary of project purpose and range of alternatives. The purpose of the meeting on March 6 is to provide current information to the Corps, EPA and U.S. Fish & Wildlife Service and, in compliance with the NEPA/404 MOU, to obtain concurrence from these agencies with the project purpose and range of alternatives to be covered in the draft EIS.

If you have any questions prior to our meeting, please do not hesitate to contact me. Thank you.

Sincerely,

Original Signed By

JEAN L. BAKER, Chief
Office of Environmental
Engineering/Technical Studies

Enclosures

bc: Mr. Rick Harlacher w/o enclosure
LSA Associates, Inc.
6721 Five Star Blvd., Suite C
Rocklin, CA 95677

Wendy Tkacheff, Design
Henry Bass, Environmental
Carolyn Brown, Environmental

JB:jm

File: EPA/65

STATE OF CALIFORNIA-BUSINESS, TRANSPORTATION AND HOUSING AGENCY PETE WILSON, Governor

DEPARTMENT OF TRANSPORTATION
DISTRICT 3
P.O. BOX 911
MARYSVILLE, CA 95901
TDD Telephone (916) 741-4509
FAX (916) 741-4457
Telephone (916) 741-4498

February 18, 1997

03-PLA-65
PM R12.2/R23.8
Lincoln Bypass
E.A. 03 333800

Mr. Mark Littlefield
U. S. Fish & Wildlife Service
Sacramento Field Office
3310 El Camino Avenue, Suite 130
Sacramento, CA 95821-6340

Dear Mr. Littlefield:

The enclosed information relative to the proposed Lincoln Bypass project is being sent to you in preparation for a meeting scheduled on March 6, 1997, at 9:00 a.m. in Room 1220 of the Sacramento District Corps of Engineers office. This is a change from the previously-scheduled meeting on February 27. The information outlines agency coordination to date, project purpose and range of alternatives. The purpose of the meeting is to provide current information to the Corps, EPA and the Service and, in compliance with the NEPA/404 MOU, to obtain concurrence from these agencies with the project purpose and range of alternatives to be covered in the draft EIS.

If you have any questions prior to the meeting, please do not hesitate to contact me. Thank you.

Sincerely,

Original Signed By

JEAN L. BAKER, Chief
Office of Environmental
Engineering/Technical Studies

Enclosure

bc: Mr. Rick Harlacher w/o enclosure
LSA Associates, Inc.
6721 Five Star Blvd., Suite C
Rocklin, CA 95677

Wendy Tkacheff, Design
Henry Bass, Environmental
Carolyn Brown, Environmental

JB:jm

File: FWS/65

STATE OF CALIFORNIA-BUSINESS, TRANSPORTATION AND HOUSING AGENCY PETE WILSON, *Governor*

DEPARTMENT OF TRANSPORTATION
DISTRICT 3
P.O. BOX 911
YRYSVILLE, CA 95901
) Telephone (916) 741-4509
.X (916) 741-4457
Telephone (916) 741-4498

February 18, 1997

03-PLA-65
PM R12.2/R23.8
Lincoln Bypass
E. A. 03 333800

Mr. Mike Finan
U.S. Army Corps of Engineers
ATTN: Regulatory Branch
1325 J Street
Sacramento, CA 95814-2922

Dear Mr. Finan:

The enclosed information relative to the proposed Lincoln Bypass project is being sent to you in preparation for the meeting to be held in your office on March 6, 1997, at 9:00 a.m. The information outlines agency coordination to date, project purpose and range of alternatives. The purpose of the meeting is to provide current information to the Corps, EPA and U.S. Fish & Wildlife Service and, in compliance with the NEPA/404 Integration MOU, to obtain concurrence from these agencies with the project purpose and the range of alternatives to be covered in the draft EIS.

If you have any questions prior to our meeting, please do not hesitate to contact me. Thank you.

Sincerely,

Original Signed By

JEAN L. BAKER, Chief
Office of Environmental
Engineering/ Technical Studies

Enclosure

bc: Mr. Rick Harlacher w/o att.
LSA Associates, Inc.
6721 Five Star Blvd., Suite C
Rocklin, CA 95677

Henry Bass, Environmental
Carolyn Brown, Environmental
Wendy Tkacheff, Design

JB:jm

File: Corps/65

STATE OF CALIFORNIA-BUSINESS, TRANSPORTATION AND HOUSING AGENCY PETE WILSON, *Governor*

DEPARTMENT OF TRANSPORTATION
DISTRICT 3
P.O. BOX 911
YSVILLE, CA 95901
) Telephone (916) 741-4509
X (916) 741-4457
Telephone (916) 741-4498

March 17, 1997

03-PLA-65
PM R12.2/R23.8
Lincoln Bypass
E. A. 03 333800

Mr. Mike Finan
U.S. Army Corps of Engineers
ATTN: Regulatory Branch
1325 J Street
Sacramento, CA 95814-2922

Dear Mr. Finan:

The enclosed information is being sent to you following an interagency coordination meeting held in the Army Corps of Engineers Sacramento District Office on March 6, 1997. The meeting was intended to provide current information to the Corps, EPA and U.S. Fish & Wildlife Service regarding the proposed State Route 65 Bypass of the City of Lincoln and to re-initiate compliance with the NEPA/404 MOU. The project is sponsored by Caltrans and the Federal Highway Administration.

Following an earlier interagency meeting held in May 1994, the EPA and U.S. Fish & Wildlife Service raised various concerns, particularly regarding the project purpose and the range of alternatives. As discussed at the most recent meeting, these two elements have been revised to address these concerns, as reflected in the attached summary. Other concerns raised in 1994 include identification of the Section 404 least environmentally damaging practicable alternative (LEDPA), implementation of the project mitigation plan and logical termini for the project. These elements will be specifically identified in the draft and final EIS, to be completed during 1998-99.

A Major Investment Study, a collaborative process involving local, county, regional, state and federal agencies, was completed in 1995. The study evaluates the efficiency and effectiveness of a full range of transportation alternatives as possible solutions to the problems through Lincoln. The process led to local consensus in the selection of the "highway bypass" as the preferred mode. It also documents the local and regional transportation planning process which identified the project need. The study does not select nor endorse a specific alignment. This will come about during public circulation of the draft and final EIS.

Pursuant to the terms of the NEPA/404 MOU, Caltrans and the Federal Highway Administration seek your agency's written concurrence on the project purpose and the range of alternatives to be addressed in the draft EIS. If you have any questions, please do not hesitate to contact me.

Sincerely,

Original Signed By

JEAN L. BAKER, Chief
Office of Environmental
Engineering/Technical Studies

Enclosures

c: Mr. David Farrel
Chief, Federal Activities
U.S. Environmental Protection Agency
75 Hawthorne Street
San Francisco, CA 94105

Mr. Mark Littlefield
U.S. Fish & Wildlife Service
Sacramento Field Office
3310 El Camino Avenue, Suite 130
Sacramento, CA 95821-6340

Mr. Dave Zezulak
Chief, Environmental Services
Department of Fish & Game
1701 Nimbus Road, Suite A
Rancho Cordova, CA 95670

bc: Mr. Rick Harlacher w/o att.
LSA Associates, Inc.
6721 Five Star Blvd., Suite C
Rocklin, CA 95677

Mr. George Wishman
Federal Highway Administration
U.S. Bank Plaza
980 Ninth Street, Suite 400
Sacramento, CA 95814-2724

Henry Bass, Environmental
Carolyn Brown, Environmental
Wendy Tkacheff, Design

JB:jm

File: Corps/65

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
Sacramento Field Office
3310 El Camino Avenue, Suite 130
Sacramento, California 95821-6340

IN REPLY REFER TO:

In Reply Refer To:
PPN 626

March 21, 1997

Jean L. Baker, Chief
Office of Environmental Engineering/Technical Studies
Department of Transportation, District Three
P.O. Box 911
Marysville, California 95901

Subject: State Route 65 Lincoln Bypass Alternatives Analysis, Project Purpose, and Range of Alternatives, Placer County, California

Dear Ms. Baker:

The U.S. Fish and Wildlife Service (Service) has reviewed your request for concurrence under the NEPA/404 Memorandum of Understanding (MOU) with the revised project purpose and range of alternatives for the proposed State Route 65 bypass.

We offer concurrence with the project purpose and range of alternatives that have been provided to us. Due to the potential high impacts to wetlands, the Service requests that the Section 404 least environmentally damaging practical alternative be clearly identified in the draft and final Environmental Impact Statement (EIS) scheduled for 1998-1999.

We look forward to reviewing the EIS upon completion. We appreciate your efforts in providing information in accordance with the NEPA/404 MOU. If you have any questions regarding these comments, please contact Kelly Oliver-Amy (Wetlands Branch) at (916) 979-2113.

Sincerely,

for Wayne S. White
Field Supervisor

cc: AES-Portland, OR
COE, Sacramento
EPA, San Francisco
Reg. Mgr., CDFG, Reg. II, Rancho Cordova

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, SACRAMENTO
CORPS OF ENGINEERS
1325 J STREET
SACRAMENTO, CALIFORNIA 95814-2922

REPLY TO
ATTENTION OF

April 7, 1997

Regulatory Branch (199500363)

Jean L. Baker, Chief
Office of Environmental Engineering/Technical Studies
State of California
Department of Transportation, District 3
P.O. Box 911
Marysville, California 95901

Dear Ms. Baker:

This letter concerns your March 17, 1997 letter requesting our comments on the project purpose and range of alternatives for the proposed State Route 65 Bypass of the City of Lincoln. Based upon the information you have provided we understand that this project is being sponsored by Caltrans and the Federal Highway Administration and that planning for this project will follow the memorandum of understanding integrating the National Environmental Policy Act and Section 404 of the Clean Water Act.

We concur with the revised statement of project purpose, the tiered approach, design parameters (which include minimizing impacts to wetlands) and the full range of alternatives discussed in the enclosure of the above letter. In order to assess the consistency of the alternatives relative to the project design parameters, a delineation of waters of the United States, including wetlands, potentially affected by each of the alternatives should be verified. Although the verifications we previously provided (199000168) have expired, we believe that much of the information generated in the original delineation will be useful and should help to expedite delineation(s) for the current project alternatives.

Where possible, the indirect impacts of each of the alternatives on waters, including wetlands, should also be identified and evaluated in an Environmental Impact Statement (EIS) for this project. Examples include waters in areas adjacent to proposed interchanges or in other areas where wetland losses could increase due to access from improving the existing alignment, constructing a highway bypass or other non-highway alternatives.

The Corps of Engineers jurisdiction within the study areas is under the authority of Section 404 of the Clean Water Act for the discharge of dredged or fill material into waters of the United States or excavation that has more than a minimal effect on the aquatic environment in these waters. The range of alternatives considered in an EIS should include alternatives that avoid fill in wetlands or other waters of the United States within the study area. Every effort should be made to avoid project features which require the discharge of fill into waters of the United States or which would indirectly lead to their loss. In the event it can be clearly demonstrated there are no practicable alternatives to filling waters of the United States, mitigation plans should be developed to compensate for losses resulting from project implementation.

We appreciate the opportunity to be included in your review process. We look forward to working with you in the identification of the Section 404 least environmentally damaging project alternative and in processing any Department of the Army permits which may be required for this project. If you have any questions, please write to Michael Finan, Room 1480, or telephone (916) 557-5324.

Sincerely,

Bob Junell

Bob Junell
Chief, Sacramento Valley Office

Copies Furnished:

Ms. Kelly Oliver-Amy, Wetlands Branch, U.S. Fish and Wildlife Service, 3310 El Camino Avenue, Suite 130, Sacramento, California 95821-6340
Mr. James Romero, CWA Compliance Office (WTR-7), U.S. Environmental Protection Agency, 75 Hawthorne Street, San Francisco, California 94105
Ms. Edna Maita, Environmental Services, California Department of Fish and Game, 1701 Nimbus Road, Suite A, Rancho Cordova, California 95670

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

May 6, 1997

Jean L. Baker, Chief
Office of Environmental Engineering
Technical Studies
California Department of Transportation
District 3
P.O. Box 911
Marysville, CA 95901

Dear Ms. Baker:

The Environmental Protection Agency has reviewed the information provided in your letter of March 17, concerning the proposed Route 65: Lincoln Bypass project. As you requested in your letter and per the NEPA/404 Memorandum of Understanding (MOU), we will be offering comments on basic project purpose and need and the range of alternatives to be evaluated in the DEIS. The purpose and need statements and the alternatives analysis discussion presented here, are in response to our June 28, 1994 comments on these issues.

We are pleased to offer our initial concurrence that the range of alternatives appears to meet the requirements of Section 404, and the project document has included acceptable criteria for considering the alternatives selected. While we agree that the tiered approach is an acceptable tool for selecting alternatives, we are concerned over the design parameter statement that the project should be built for a reasonable cost. In the Tier 2 documentation, Caltrans should define what would be a reasonable cost for this project and what the fiscal constraints are for not examining projects that would be more costly.

We also concur with the project purpose and need that is presented as a response to our comments of June 28, 1994. We concur that this purpose and need for the project is adequately defined to satisfy the NEPA and Section 404 project purpose standards. However, we were unclear as to why Caltrans elected to keep the previous Purpose statement in the documentation. Caltrans seems to imply that this purpose statement will continue to be identified as the definition for the project and that the other Purpose statement is offered in order to address the resource agency concerns rather than as a replacement for the original statement. For clarity, we suggest that Caltrans remove the previous purpose statement, and keep only the rewritten Purpose statement:

"The purpose of this project is to relieve congestion and improve safety on Route 65 in the vicinity of the City of Lincoln and provide for a regional traffic solution to accommodate projected traffic volumes for the year 2020."

Lastly, the documentation did not provide maps which delineate the alignment options and wetlands in the project area. We are not familiar with the project area and since we understand that the project has the potential to greatly impact wetland resources we request that Caltrans provide clear and concise rationale for the alternatives selected for evaluation and maps which delineate alignment options and wetlands in the project area. This can be done at the time of Tier 2 documentation. Additionally, the design options (alignments, median widths, and interchanges) should be discussed in a cohesive manner. These options would not be exclusive of one another and therefore Caltrans/FHWA should develop and discuss alternatives that incorporate a combination of design possibilities. We also recommend that Caltrans and FHWA consider incorporating TSM measures into whatever alternatives are brought forward to the next stage of consideration.

We appreciate your efforts in providing information in keeping with the NEPA/404 MOU. We look forward to reviewing the information generated for the next step in the tiered approach. Should you have any questions regarding our comments, please contact me at (415) 744-1584 or David Carlson of my staff at (415) 744-1577. If you have any questions regarding Section 404 issues, you may contact Elizabeth White in our CWA Compliance office at (415) 744-1988.

Sincerely,



David J. Farrel, Chief
Office of Federal Activities

cc: FHWA (D. Harris)

APPENDIX F FLORA AND FAUNA OBSERVED IN THE PROJECT STUDY AREA

PLANT SPECIES OBSERVED IN THE PROJECT AREA

SCIENTIFIC NAME	COMMON NAME
FERNS AND FERN ALLIES	
EQUISETACEAE - HORSETAIL FAMILY	
Equisetum sp.	Horsetail
ISOETACEAE - QUILLWORT FAMILY	
Isoetes howellii	Howell's quillwort
Isoetes nuttallii	Nuttall's quillwort
Isoetes orcutti	Orcutt's quillwort
MARSILEACEAE - MARSILEA FAMILY	
Marsilea vestita ssp. *vestita*	Hairy water fern
Pilularia americana	American pillwort
DICOTS	
AMARANTHACEAE - AMARANTH FAMILY	
Amaranthus californicus	California amaranth
ANACARDIACEAE - SUMAC or CASHEW FAMILY	
Toxicodendron diversilobum	Western poison oak
APIACEAE - CARROT FAMILY	
Conium maculatum	Poison hemlock
Eryngium vaseyi	Coyote thistle
Foeniculum vulgare	Fennel
Torilis nodosa	Hedge parsley
ARISTOLOCHIACEA - PIPEVINE FAMILY	
Aristolochia californica	Pipevine
ASCLEPIADACEAE - MILKWEED FAMILY	
Asclepias fascicularis	Narrow-leaf milkweed
ASTERACEAE - SUNFLOWER FAMILY	
Achyrachaena mollis	Blow wives

SCIENTIFIC NAME	COMMON NAME
Ambrosia psilostachya	Western ragweed
Anthemis cotula	Mayweed
Artemesia douglasiana	Mugwort
Bidens cernua var. *cernua*	Nodding bur-marigold
Bidens frondosa	Sticktight
Blennosperma nanum	Common blennosperma
Carduus pycnocephalus	Italian thistle
Centaurea solstitialis	Yellow star-thistle
Chamomilla suaveolens	Pineapple weed
Cirsium vulgare	Bull thistle
Cotula coronopifolia	Brass-buttons
Eclipta prostrata	Yerba de tajo
Gnaphalium luteo-album	Weedy cudweed
Grindelia camporum	Great valley gumweed
Hesperevax caulescens	Hogwallow starfish
Hemizonia fitchii	Fitch's spikeweed
Hemizonia pungens	Common spikeweed
Holocarpha virgata	Sticky tarweed
Hypochaeris glabra	Smooth cat's ear
Lactuca serriola	Prickly lettuce
Lasthenia californica	California goldfields
Lasthenia fremontii	Fremont's goldfields
Lasthenia glaberrima	Smooth goldfields
Layia fremontii	Fremont's tidy-tips
Microseris acuminata	Microseris
Microseris douglasii	Douglas's microseris
Picris echioides	Bristly ox-tongue
Psilocarphus brevissimus	Dwarf woolly-heads
Psilocarphus oregonus	Oregon woolly-heads
Psilocarphus tenellus	Slender woolly-heads
Senecio vulgaris	Common groundsel

SCIENTIFIC NAME	COMMON NAME
Silybum marianum	Milk thistle
Xanthium strumarium	Cocklebur
BETULACEAE - BIRCH FAMILY	
Alnus rhombifolia	White alder
BORAGINACEAE - BORAGE FAMILY	
Amsinckia menziesii var. *intermedia*	Rancher's fireweed
Plagiobothrys bracteatus	Bracted popcorn-flower
Plagiobothrys greenei	Greene's popcorn-flower
Plagiobothrys stipitatus var. *micranthus*	Stalked popcorn-flower
Plagiobothrys stipitatus var. *stipitatus*	Slender popcorn-flower
BRASSICACEAE - MUSTARD FAMILY	
Brassica nigra	Black mustard
Cardamine oligosperma	Western bitter-cress
Lepidium nitidum	Shining peppergrass
Rorippa nasturtium-aquaticum	Water cress
CALLITRICHACEAE - WATER-STARWORT FAMILY	
Callitriche hermaphroditica	Autumnal water-starwort
Callitriche heterophylla	Larger water-starwort
Callitriche marginata	Winged water-starwort
CAMPANULACEAE - BELLFLOWER FAMILY	
Downingia bicornuta	Two-horned downingia
Downingia cuspidata	Toothed downingia
Downingia ornatissima	Folded downingia
Downingia pusilla	Dwarf downingia
CAPRIFOLIACEAE - HONEYSUCKLE FAMILY	
Sambucus mexicana	Blue elderberry
CARYOPHYLLACEAE - PINK FAMILY	
Cerastium glomeratum	Mouse-ear chickweed
Minuartia californica	California stitchwort
Spergula arvensis	Corn spurry
Stellaria media	Common chickweed

SCIENTIFIC NAME	COMMON NAME
CHENOPODIACEAE - GOOSEFOOT FAMILY	
Chenopodium album	Pigweed
Chenopodium ambrosioides	Mexican tea
CONVOLVULACEAE - MORNING-GLORY FAMILY	
Convolvulus arvensis	Bindweed
CRASSULACEAE - STONECROP FAMILY	
Crassula aquatica	Water pygmy-weed
Crassula connata	Pygmy-weed
CUCURBITACEAE - GOURD FAMILY	
Marah sp.	Man-root
CUSCUTACEAE - DODDER FAMILY	
Cuscuta howelliana	Bogg's Lake dodder
EUPHORBIACEAE - SPURGE FAMILY	
Eremocarpus setigerus	Turkey mullein
FABACEAE - LEGUME FAMILY	
Lotus corniculatus	Birdfoot trefoil
Lotus oblongifolius	Stream trefoil
Lotus purshianus var. *purshianus*	Spanish lotus
Lupinus bicolor	Miniature lupine
Medicago polymorpha	California burclover
Trifolium depauperatum	Dwarf sack clover
Trifolium dubium	Shamrock
Trifolium glomeratum	Clover
Trifolium hirtum	Rose clover
Trifolium subterraneum	Subterranean clover
Trifolium variegatum	White-tip clover
FAGACEAE - OAK FAMILY	
Quercus douglasii	Blue oak
Quercus lobata	Valley oak
Quercus wislizenii	Interior live oak

SCIENTIFIC NAME	COMMON NAME
GENTIANACEAE - GENTIAN FAMILY	
Cicendia quadrangularis	Oregon timwort
GERANIACEAE - GERANIUM FAMILY	
Erodium botrys	Long-beaked storksbill
Erodium brachycarpum	Short-fruit storksbill
Geranium dissectum	Cut-leaved geranium
Geranium molle	Doves-foot geranium
JUGLANDACEAE - WALNUT FAMILY	
Juglans californica var. *hindsii*	Northern California black walnut
Juglans regia	English walnut
LAMIACEAE - MINT FAMILY	
Marrubium vulgare	Common horehound
Mentha pulegium	Pennyroyal
Pogogyne zizyphoroides	Sacramento mesamint
Trichostema lanceolatum	Vinegar weed
LIMNANTHACEAE - MEADOWFOAM FAMILY	
Limnanthes alba	White meadowfoam
LYTHRACEAE - LOOSESTRIFE FAMILY	
Lythrum hyssopifolium	Hyssop loosestrife
MALVACEAE - MALLOW FAMILY	
Sidalcea calycosa	Annual checker mallow
Sidalcea hirsuta	Hairy checker mallow
MOLLUGINACEAE - CARPET-WEED FAMILY	
Mollugo verticellata	Green carpet-weed
ONAGRACEAE - EVENING PRIMROSE FAMILY	
Epilobium ciliatum	Willow herb
Epilobium cleistogamum	Cleistogamouse spike-primrose
Epilobium pygmaeum	Smooth spike-primrose
Epilobium torreyi	Stiff spike-primrose
Ludwigia peploides	Yellow water weed

SCIENTIFIC NAME	COMMON NAME
PLANTAGINACEAE - PLANTAIN FAMILY	
Plantago coronopus	Cut-leaf plantain
Plantago erecta	Dwarf plantain
Plantago lanceolata	English plantain
POLEMONIACEAE - PHLOX FAMILY	
Navarretia eriocephala	Hoary navarretia
Navarretia intertexta	Needle-leaf navarretia
Navarretia leucocephala	White-head navarretia
Navarretia pubescens	Downy navarretia
Navarretia tagetina	Marigold navarretia
POLYGONACEAE - BUCKWHEAT FAMILY	
Polygonum arenastrum	Common knotweed
Polygonum hydropiperoides	Waterpepper
Polygonum persicaria	Lady's thumb
Polygonum punctatum	Dotted smartweed
Rumex acetosella	Sheep sorrel
Rumex crispus	Curly dock
Rumex pulcher	Fiddle dock
PORTULACACEAE - PURSLANE FAMILY	
Montia fontana	Water chickweed
Portulaca oleracea	Common purslane
PRIMULACEAE - PRIMROSE FAMILY	
Anagallis arvensis	Scarlet pimpernel
Centunculus minimus	Chaffweed
RANUNCULACEAE - BUTTERCUP FAMILY	
Myosurus minimus	Tiny mouse-tail
Ranunculus aquatilis	White water buttercup
Ranunculus bonariensis var. *trisepalus*	
Ranunculus muricatus	Spiny-fruit buttercup

SCIENTIFIC NAME	COMMON NAME
ROSACEAE - ROSE FAMILY	
Rubus discolor	Himalayan blackberry
Rubus ursinus	California blackberry
RUBIACEAE - MADDER FAMILY	
Galium murale	Tiny bedstraw
Galium trifidum	Small bedstraw
SALICACEAE - WILLOW FAMILY	
Populus fremontii ssp. *fremontii*	Fremont cottonwood
Populus balsamifera ssp. *trichocarpa*	Black cottonwood
Salix exigua	Narrow-leaved willow
Salix gooddingii	Goodding's black willow
Salix laevigata	Red willow
Salix lasiolepis	Arroyo willow
SCROPHULARIACEAE - FIGWORT FAMILY	
Castilleja attenuata	Valley tassels
Castilleja campestris var. *campestris*	Field owl's clover
Gratiola ebracteata	Bractless hedge-hyssop
Gratiola heterosepala	Bogg's Lake hedge-hyssop
Mimulus guttatus	Seep-spring monkeyflower
Mimulus tricolor	Tricolor monkeyflower
Triphysaria eriantha	Butter-and-eggs
Verbascum thapsus	Woolly mullein
SOLANACEAE - NIGHTSHADE FAMILY	
Solanum douglasii	Greenspot nightshade
Solanum americanum	Black nightshade
URTICACEAE - NETTLE FAMILY	
Urtica dioica ssp. *holosericea*	Hoary nettle
VERBENACEAE - VERVAIN FAMILY	
Phyla nodiflora	Common frog-fruit
Verbena hastata	Blue vervain

SCIENTIFIC NAME	COMMON NAME
MONOCOTS	
ALISMATACEAE - WATER-PLANTAIN FAMILY	
Alisma plantago-aquatica	Broad-leaf water plantain
Damasonium californicus	Fringed water-plantain
CYPERACEAE - SEDGE FAMILY	
Cyperus eragrostis	Tall flatsedge
Eleocharis acicularis	Least spikerush
Eleocharis macrostachya	Creeping spikerush
Eleocharis obtusa	Blunt spikerush
Scirpus acutus var. *occidentalis*	Hard-stem bulrush
Scirpus cernuus	Low bulrush
Scirpus robustus	Alkali bulrush
IRIDACEAE - IRIS FAMILY	
Sisyrhinchium bellum	Blue-eyed grass
JUNCACEAE - RUSH FAMILY	
Juncus acuminatus	Taper-tip rush
Juncus balticus	Baltic rush
Juncus bufonius	Toad rush
Juncus capitatus	Capped rush
Juncus effusus	Soft rush
Juncus leiospermus var. *ahartii*	Ahart's dwarf rush
Juncus phaeocephalus var. *paniculatus*	Brown-head rush
Juncus uncialis	Inch-high rush
Juncus xiphiodes	Iris-leaf rush
JUNCAGINACEAE - ARROW-GRASS FAMILY	
Lilaea scilloides	Flowering quillwort
LILIACEAE - LILY FAMILY	
Brodiaea appendiculata	Appendaged brodiaea
Brodiaea coronaria	Harvest brodiaea
Calochortus luteus	Gold nuggets
Chlorogalum angustifolium	Narrowleaf soap plant

SCIENTIFIC NAME	COMMON NAME
Dichelostemma multiflorum	Wild hyacinth
Triteleia hyacinthina	White brodiaea
POACEAE - GRASS FAMILY	
Aira caryophyllea	Silver European hairgrass
Alopecurus saccatus	Pacific foxtail
Avena barbata	Slender wild oat
Avena fatua	Wild oat
Briza minor	Little quaking grass
Bromus diandrus	Ripgut grass
Bromus hordeaceus	Soft chess
Crypsis schoenoides	Swamp grass
Crypsis vaginiflora	Prickle grass
Cynodon dactylon	Bermuda grass
Cynosurus echinatus	Hedgehog dogtail
Deschampsia danthonioides	Annual hairgrass
Glyceria declinata	Mannagrass
Hordeum marinum ssp. *gussoneanum*	Mediterranean barley
Hordeum murinum ssp. *leporinum*	Barley
Leersia oryzoides	Rice cutgrass
Lolium multiflorum	Italian ryegrass
Paspalum dilatatum	Dallis grass
Phalaris lemmonii	Lemmon's canary grass
Poa annua	Annual bluegrass
Polypogon interruptus	Ditch beard grass
Polypogon monspeliensis	Annual beard grass
Setaria gracilis	Knotroot bristle grass
Taeniatherum caput-medusae	Medusahead
TYPHACEAE - CATTAIL FAMILY	
Typha angustifolia	Narrow-leaved cattail
Typha latifolia	Broad-leaved cattail

FISH AND WILDLIFE SPECIES OBSERVED IN THE PROJECT AREA

SCIENTIFIC NAME	COMMON NAME
MAMMALS	
Canis latrans	Coyote
Castor canadensis	Beaver
Didelphis marsupialis	Virginia opossum
Lepus californicus	Black-tailed jackrabbit
Lutra canadensis	River otter
Mephitus mephitus	Striped skunk
Microtus californicus	California vole
Mus musculus	House mouse
Ondatra zibethicus	Muskrat
Peromyscus maniculatus	Deer mouse
Procyon lotor	Raccoon
Reithrodontyomys megalotus	Western harvest mouse
Sciurus griseus	California gray squirrel
Spermophilus beecheyi	California ground squirrel
Sylvilagus auduboni	Desert cottontail
Thomomys bottae	Valley pocket gopher
BIRDS	
Accipiter cooperi	Cooper's hawk
Accipiter striatus	Sharp-shinned hawk
Agelaius phoeniceus	Red-winged blackbird
Agelaius tricolor	Tri-colored blackbird
Aix sponsa	Wood duck
Ammodramus savannarum	Grasshopper sparrow
Anas americana	American wigeon
Anas acuta	Northern pintail
Anas clypeata	Northern shoveler
Anas crecca	Green-winged teal
Anas cyanoptera	Cinnamon teal
Anas penelope	Eurasian wigeon

SCIENTIFIC NAME	COMMON NAME
Anas platyrhynchos	Mallard
Anas strepera	Gadwall
Anser albifrons	Greater white-fronted goose
Anthus spinoletta	Water pipit
Aphelocoma coerulescens	Scrub jay
Aquila chrysaetos	Golden eagle
Ardea herodias	Great blue heron
Aythya affinis	Lesser scaup
Aythya collaris	Ring-necked duck
Botaurus lentiginosus	American bittern
Branta canadensis	Canada goose
Bubo virginianus	Great horned owl
Bucephala albeola	Bufflehead
Buteo jamaicensis	Red-tailed hawk
Buteo lineatus	Red-shouldered hawk
Buteo swainsoni	Swainson's hawk
Butorides striatus	Green-backed heron
Calidris alpina	Dunlin
Calidris minutilla	Least sandpiper
Callipepla californica	California quail
Carduelis psaltria	Lesser goldfinch
Carduelis tristis	American goldfinch
Carpodacus mexicanus	House finch
Casmerodius albus	Great egret
Cathartes aura	Turkey vulture
Ceryle alcyon	Belted kingfisher
Charadrius vociferus	Killdeer
Chordeiles minor	Common nighthawk
Circus cyaneus	Northern harrier
Cistothorus palustris	Marsh wren
Colaptes auratus	Northern flicker

SCIENTIFIC NAME	COMMON NAME
Columba livia	Rock dove
Corvus brachyrhynchos	American crow
Cygnus columbianus	Tundra swan
Dendroica coronata	Yellow-rumped warbler
Dendroica nigrescens	Black-throated gray warbler
Egretta thula	Snowy egret
Elanus leucurus	White-tailed kite
Eremophila alpestris actia	California horned lark
Euphagus cyanocephalus	Brewer's blackbird
Falco columbarius	Merlin
Falco mexicanus	Prairie falcon
Falco sparverius	American kestrel
Fulica americana	American coot
Gallinago gallinago	Common snipe
Gallinula chloropus	Common moorhen
Himantopus mexicanus	Black-necked stilt
Hirundo pyrrhonota	Cliff swallow
Hirundo rustica	Barn swallow
Icterus bullockii	Bullock's oriole
Icterus parisorum	Scott's oriole
Lanius ludovicianus	Loggerhead shrike
Larus argentatus	Herring gull
Larus delawarensis	Ring-billed gull
Limnodromus griseus	Short-billed dowitcher
Melanerpes formicivorus	Acorn woodpecker
Melanerpes lewis	Lewis' woodpecker
Meleagris gallopavo	Wild turkey
Melospiza melodia	Song sparrow
Mimus polyglottos	Northern mockingbird
Molothrus ater	Brown-headed cowbird
Nycticorax nycticorax	Black-crowned night-heron

SCIENTIFIC NAME	COMMON NAME
Parus inornatus	Oak titmouse
Passer domesticus	House sparrow
Passerculus sandwichensis	Savannah sparrow
Passerella iliaca	Fox sparrow
Phalacrocorax auritus	Double-crested cormorant
Phasianus colchicus	Ring-necked pheasant
Pica nuttalli	Yellow-billed magpie
Picoides nuttallii	Nuttall's woodpecker
Pipilo erythrophthalmus	Spotted towhee
Pipilo fuscus	Canyon towhee
Podilymbus podiceps	Pied-billed grebe
Porzana carolina	Sora
Psaltriparus minimus	Bushtit
Recurvirostra americana	American avocet
Riparia riparia	Bank swallow
Sayornis nigricans	Black phoebe
Sialia mexicana	Western bluebird
Sitta carolinensis	White-breasted nuthatch
Stelgidopteryx serripennis	Northern rough-winged swallow
Sterna caspia	Caspian tern
Sturnella neglecta	Western meadowlark
Sturnus vulgaris	European starling
Tachycineta bicolor	Tree swallow
Tachycineta thalassina	Violet-green swallow
Thryomanes bewickii	Bewick's wren
Toxostoma curvirostre	Curve-billed thrasher
Tringa melanoleuca	Greater yellowlegs
Turdus migratorius	American robin
Tyrannus verticalis	Western kingbird
Tyto alba	Barn owl
Xanthocephalus xanthocephalus	Yellow-headed blackbird

SCIENTIFIC NAME	COMMON NAME
Zenaida macroura	Mourning dove
Zonotrichia leucophrys	White-crowned sparrow
	Hummingbird sp.
REPTILES	
Clemmys marmorata marmorata	Northwestern pond turtle
Coluber constrictor	Racer
Eumeces gilberti	Gilbert's skink
Pituophis melanoleucus	Gopher snake
Sceloporus graciosus	Sagebrush lizard
Sceloporus occidentalis	Western fence lizard
Thamnophis elegans	Western terrestrial garter snake
Thamnophis sirtalis	Common garter snake
Trachemys scripta	Red-eared slider
AMPHIBIANS	
Hyla regilla	Pacific tree frog
Rana catesbeiana	Bullfrog
FISH	
Catostomus occidentalis	Sacramento sucker
Cyprinus carpio	Carp
Gambusia affinis	Mosquitofish
Ictalurus nebulosus	Brown bullhead
Lampetra tridentatus	Pacific lamprey
Lavinia exilicauda	Hitch
Lepomis cyanellus	Green sunfish
Lepomis macrochirus	Bluegill
Chaenobrythus gulosus	Warmouth and green sunfish hybrid
Micropterus salmoides	Largemouth bass
Oncorhynchus tshawtscha	Central Valley fall-run chinook salmon
Percina macrolepida	Bigscale logperch
Ptychocheilus grandis	Sacramento squawfish
INVERTEBRATES	

SCIENTIFIC NAME	COMMON NAME
Branchinecta lynchi	Vernal pool fairy shrimp
Linderiella occidentalis	California linderiella

APPENDIX G RELOCATION ASSISTANCE ADVISORY SERVICE

BENEFITS PROVIDED TO RELOCATEES PURSUANT TO LAW

The acquisition and relocation program will be conducted in accordance with the **Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended.** Relocation resources are available and will be provided to all residential and business relocatees without discrimination.

The Department of Transportation provides relocation advisory assistance to any person, business, farm or non-profit organization displaced as a result of the Department's acquisition of real property for public use. The Department assists displacees in obtaining replacement housing by providing current and continuing information on the availability and prices of houses for sale and rental units that are comparable, "decent, safe and sanitary". Mobile home owner occupants renting space may receive a combination of replacement housing benefits due to owner/tenant status. Non-residential displacees will receive information on comparable properties for lease or purchase.

Residential replacement dwellings will be in equal or better neighborhoods, at prices within the financial means of the individuals and families displaced, and reasonably accessible to their places of employment. Before any displacement occurs, comparable replacement dwellings will be offered to displacees that are fair housing open to all persons, consistent with the requirements of Title VI of the Civil Rights Act of 1968.

Residential Relocation Payments Program

The Relocation Payment Program will help eligible residential occupants by paying costs and expenses. These cost are limited to those necessary for the purchase or rent of a replacement dwelling and actual reasonable moving expenses to a new location within a 50-mile radius of the displacee's property. Any actual moving costs in excess of the 50 miles are the responsibility of the displacee. The Residential Relocation Program can be summarized as follows:

Moving Costs

Any displaced person who was lawfully in occupancy of the acquired property regardless of length of occupancy therein, will be eligible for reimbursement of moving costs. Displacees will receive either the actual reasonable costs involved in moving themselves and personal property up to a maximum of 50 miles, a moving service authorization, or a fixed payment based on a fixed moving cost schedule which is

determined by the number of furnished or unfurnished rooms of the displacement dwelling.

Purchase Supplement

In addition to moving and related expense payments, fully eligible homeowners may be entitled to payments for increased costs of replacement housing.

Homeowners who have owned and occupied their property for 180 days or more prior to the date of the first written offer to purchase the property, may qualify to receive a price differential payment and may qualify to receive reimbursement for certain nonrecurring costs incidental to the purchase of the replacement property.

The price differential payment is made when the Department determines that the cost to purchase a comparable and "decent, safe and sanitary" replacement dwelling will be more than the present cost of the displacement dwelling. An interest differential payment is also available if the interest rate for the loan on the replacement dwelling is higher than the loan rate on the displacement dwelling, subject to certain limitations on reimbursement based upon the replacement property interest rate. The maximum amount of supplemental payment that the owner-occupants can receive is $22,500.00. If the total entitlement (without moving payments) is in excess of $22,500.00, the Last Resort Housing Program (LRHP) will be used.

Rental Supplement

Tenants who have occupied the property to be acquired by the Department for 90 days or more and owner-occupants of 90 days or more prior to the date of the first written offer to purchase, may qualify to receive a rental differential payment. This payment is made when the Department determines that the cost to rent a comparable and decent, safe and sanitary replacement dwelling will be more than the present rent of the displacement dwelling. As an alternative, the tenant may qualify for a down payment benefit designed to assist in the purchase of a replacement property. Once the eligibilities are determined, occupants of the residential care home will be eligible for tenant relocation benefits and their individual needs will be considered. The maximum amount payment to any tenant of 90 days or more and any owner-occupant of 90 days or more, in addition to moving expenses, will be $5,250.00. If the total entitlement for rental supplement exceeds $5,250.00, LRHP will be used.

Last Resort Housing

The State Department of Transportation, adopted federal guidelines for implementing the LRHP. Last resort housing benefits are, except for the amounts of payments and the methods in making them, the same as those benefits for standard relocation as explained above. LRHP has been designed primarily to cover situations where comparable replacement housing is unavailable, or when their anticipated

replacement housing payments exceed the $5,250.00 and $22,500.00 limits of the standard relocation procedures. In certain exceptional situations, LRHP may also be used for tenants of less than 90-days.

After the first written offer to acquire the property has been made, the Department will, within a reasonable length of time, personally contact the displacees to gather important information relating to:

Preferences in area of relocation;

Number of people to be displaced and the distribution of adults and children according to age and sex;

Location of school and employment;

Special arrangements to accommodate any handicapped member of the family;

Financial means to relocate into comparable replacement dwelling which is decent, safe and sanitary.

The Business and Farm Relocation Assistance Program

The Business and Farm Relocation Assistance Program provides for aid in locating suitable replacement property, and reimbursement for certain costs involved in relocation. The Relocation Advisory Assistance Program can provide, when requested, a current list of properties offered for sale or rent, suitable for specific relocation needs.

The types of payments available to businesses, farms and non-profit organizations can be summarized as follows:

Moving expenses include the following actual reasonable costs:

The moving of inventory, machinery, office equipment and similar business-related personal property dismantling, disconnecting, crating, packing, loading, insuring, transporting, unloading, unpacking, and reconnecting of personal property.

Loss of tangible personal property provides payment to relocatee for "actual direct" losses of personal property that the owner elects not to move.

Expenses related to searching for a new business site can be reimbursed up to $1,000.00 for actual reasonable cost incurred.

Reestablishment expenses up to $10,000.00 relating to the new business operation.

In lieu payment (instead of the above payments). Payment "in Lieu" of moving and reestablishment expenses is available to businesses and farms which are assumed to suffer a substantial loss of existing patronage as a result of the displacement, or if certain other requirements such as inability to find a suitable relocation site are met.

This payment is an amount equal to the average annual net earnings for the last 2 taxable years prior to relocation. Such payment may not be less than $1,000.00 and not more than $20,000.00.

Additional Information

Reimbursement for moving costs and replacement housing payments are not considered income for the purpose of the Internal Revenue Code of 1954, or sources for the purpose of determining the extent of eligibility of a displacee for assistance under the Social Security Act, local Section 8 housing programs, or other federal assistance programs.

Persons whom are eligible for relocation payments and who are legally occupying the property required for the project will not be asked to move without being given at least 90 days advance notice, in writing. Occupants of any type of dwelling eligible for relocation payments will not be required to move unless at least one comparable "decent, safe and sanitary" replacement residence, open to all persons, regardless of race, color, religion, sex or national origin is available, or has been made available to them by the State.

Any persons, business, farm or nonprofit organization which has been refused a relocation payment by the Department of Transportation, or believes that the payments are inadequate, may appeal for a special hearing of the complaint. No legal assistance is required, however, the displacee may choose to obtain legal council, but at their own expense. Information about the appeal procedure is available from Department of Transportation relocation advisors.

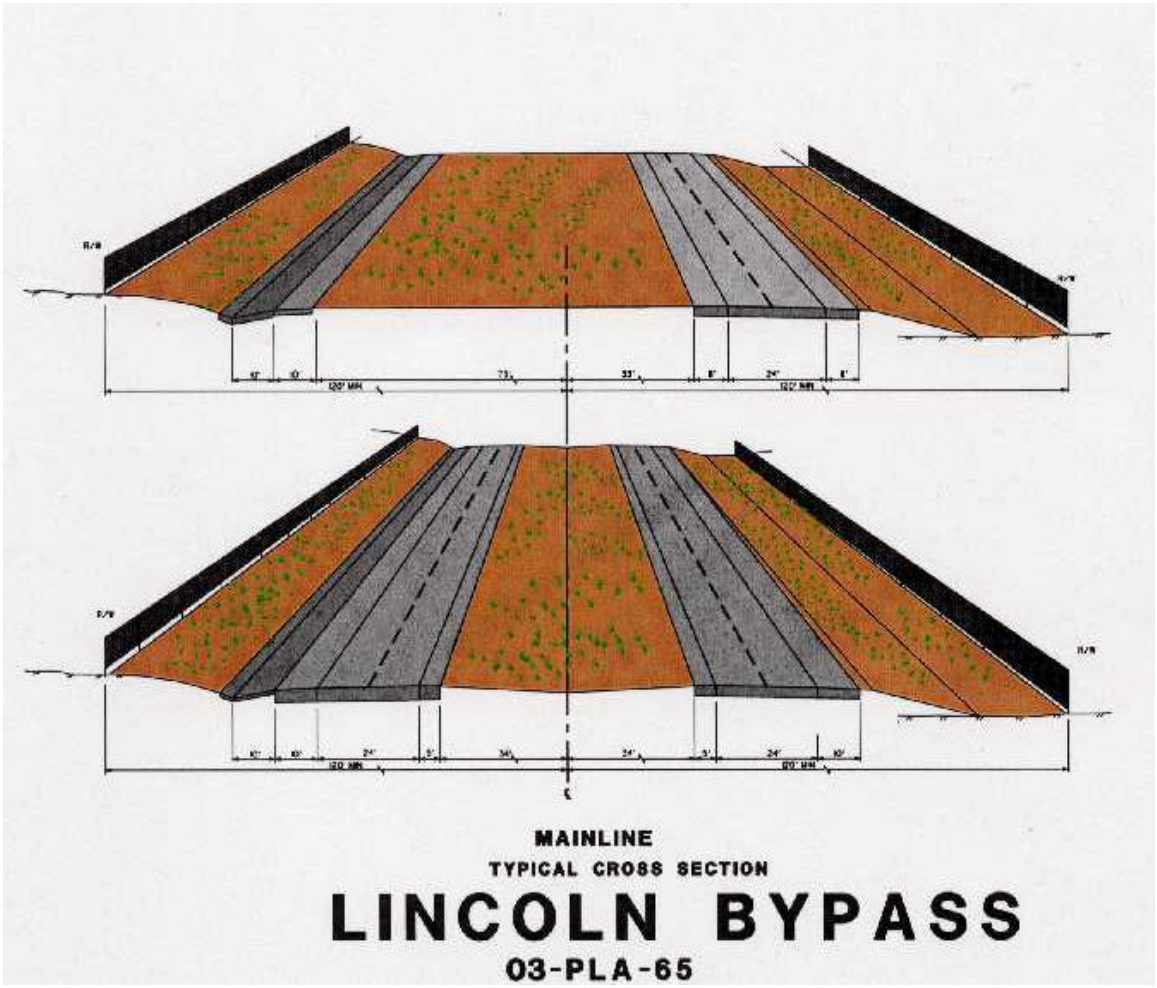
The information above is not intended to be a complete statement of all the Department's laws and regulations. At the time of the first written offer to purchase, owner-occupants are given a more detailed explanation of the State's relocation services. Tenant occupants of properties to be acquired are contacted immediately after the first written offer to purchase, and also given a more detailed explanation of the Department's relocation programs.

Important Notice

To avoid loss of possible benefits, no individual, family, business, farm, or nonprofit organization should commit to purchase or rent a replacement property without first contacting a Department of Transportation Relocation Advisor at:

Department of Transportation, District 3
2800 Gateway Oaks Dr.
Sacramento, CA 95833
(916) 274-5813

APPENDIX H TYPICAL CROSS SECTION



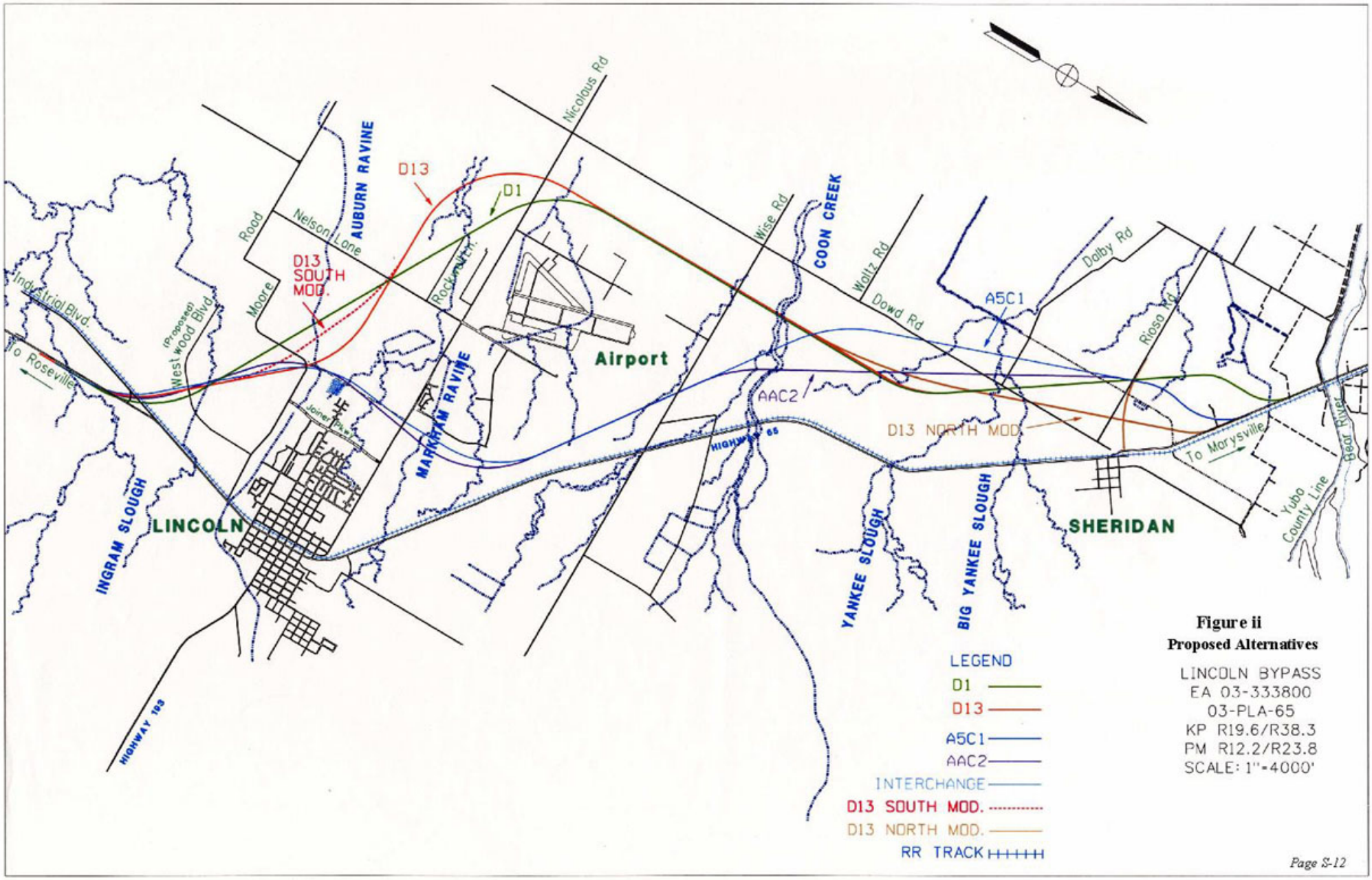


Figure ii
Proposed Alternatives

LINCOLN BYPASS
EA 03-333800
03-PLA-65
KP R19.6/R38.3
PM R12.2/R23.8
SCALE: 1"=4000'

Page S-12

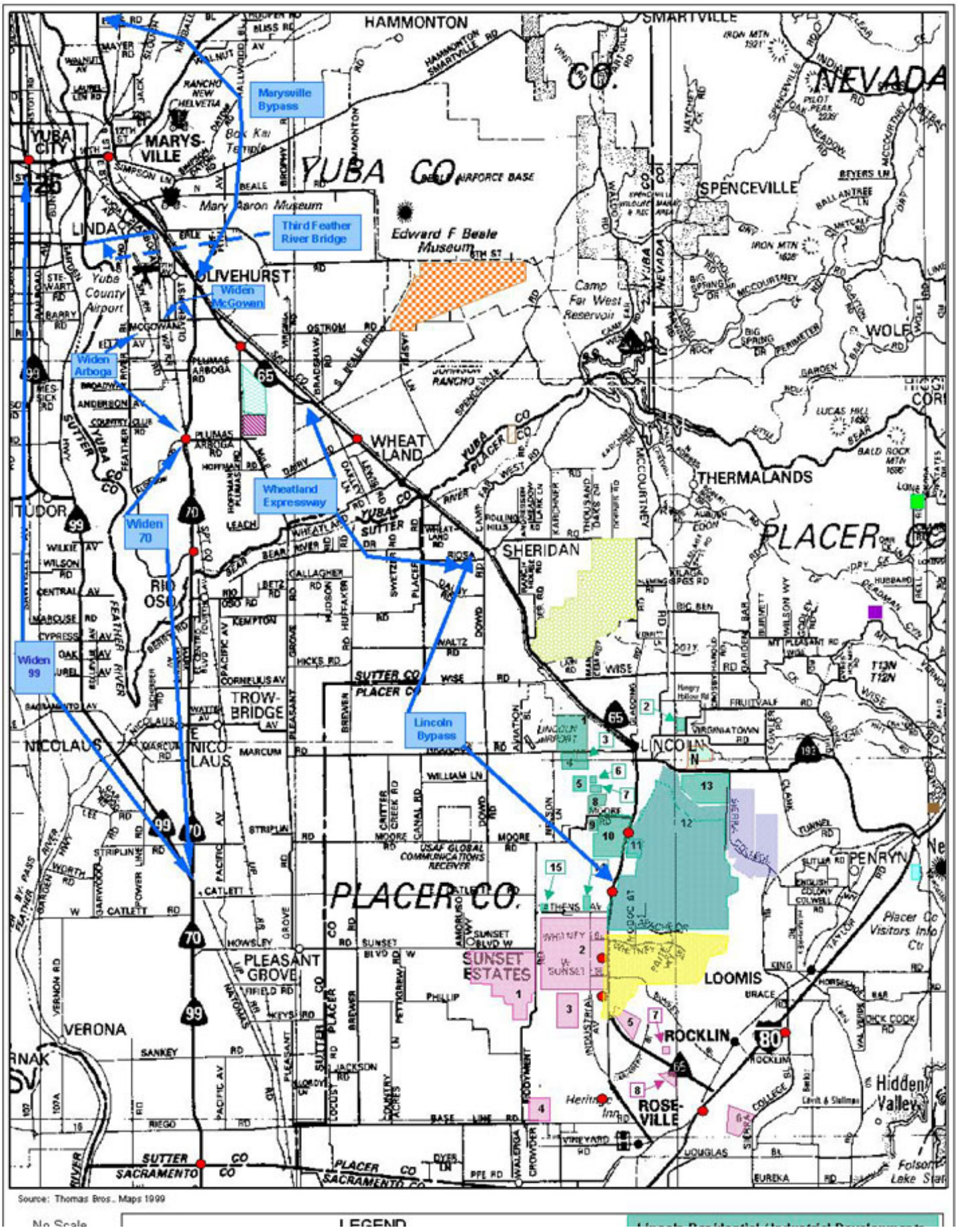

Marysville Bypass
Third Feather River Bridge
Widen McGowan
Widen Arboga
Widen 70
Widen 99
Wheatland Expressway
Lincoln Bypass
HAMMONTON
SMARTVILLE
NEVADA CO.
YUBA CO
MARYS-VILLE
YUBA CITY
LINDA
OLIVEHURST
SPENCEVILLE
WHEATLAND
THERMALANDS
PLACER CO.
SHERIDAN
TUDOR
RIO OSO
TROW-BRIDGE
NICOLAUS
LINCOLN
PENRYN
LOOMIS
ROCKLIN
ROSE-VILLE
PLEASANT GROVE
SUNSET ESTATES
VERONA
SUTTER CO
SACRAMENTO CO
Edward F Beale Museum
Camp Far West Reservoir
Yuba County Airport
Hidden Valley
Placer Co Visitors Info Ctr
Source: Thomas Bros., Maps 1999
LEGEND



Figure 1-6
Development Activity in the SR 70, 65, 99 Corridor

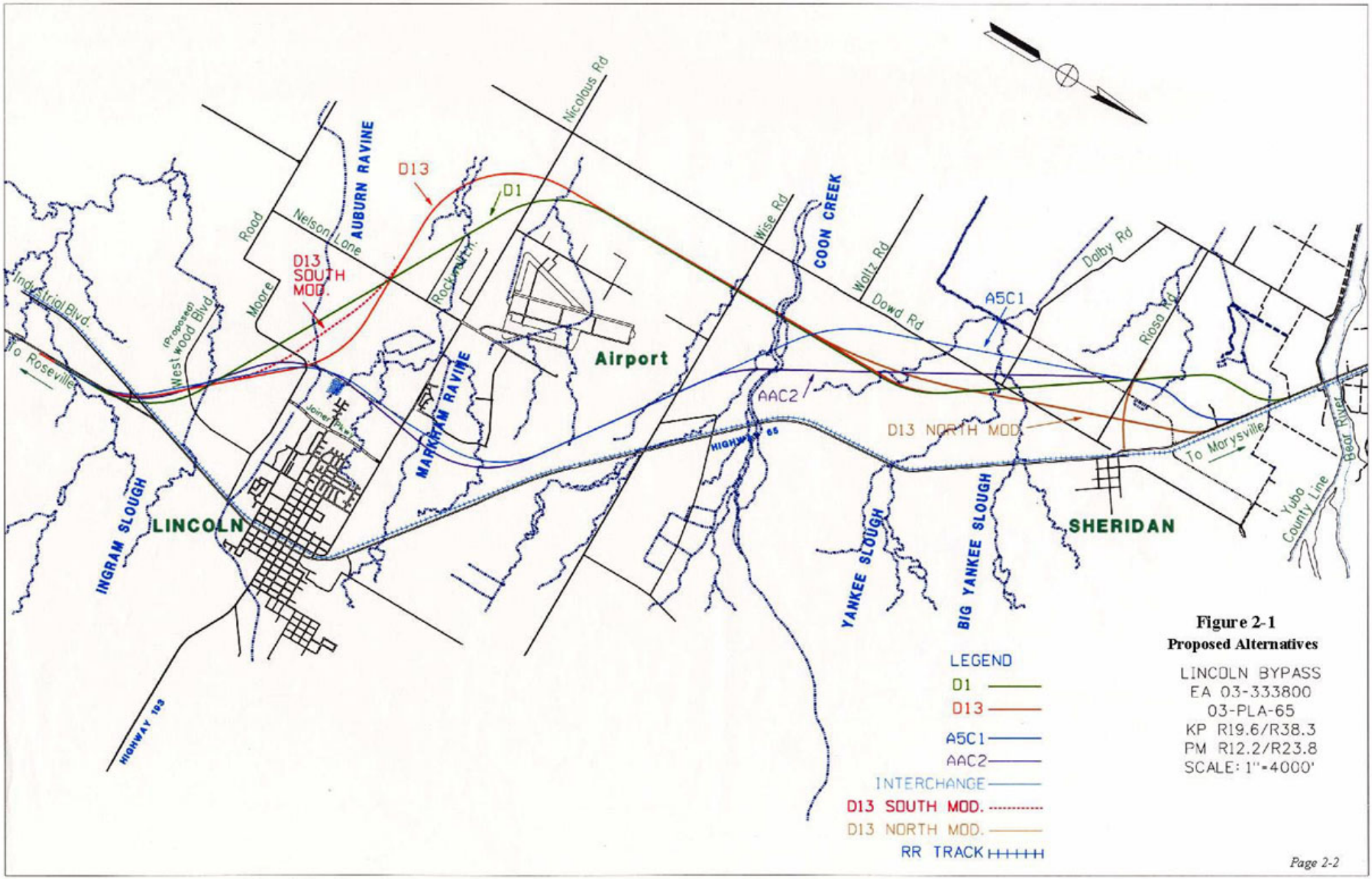


Figure 2-1
Proposed Alternatives

LINCOLN BYPASS
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03-PLA-65
KP R19.6/R38.3
PM R12.2/R23.8
SCALE: 1"=4000'

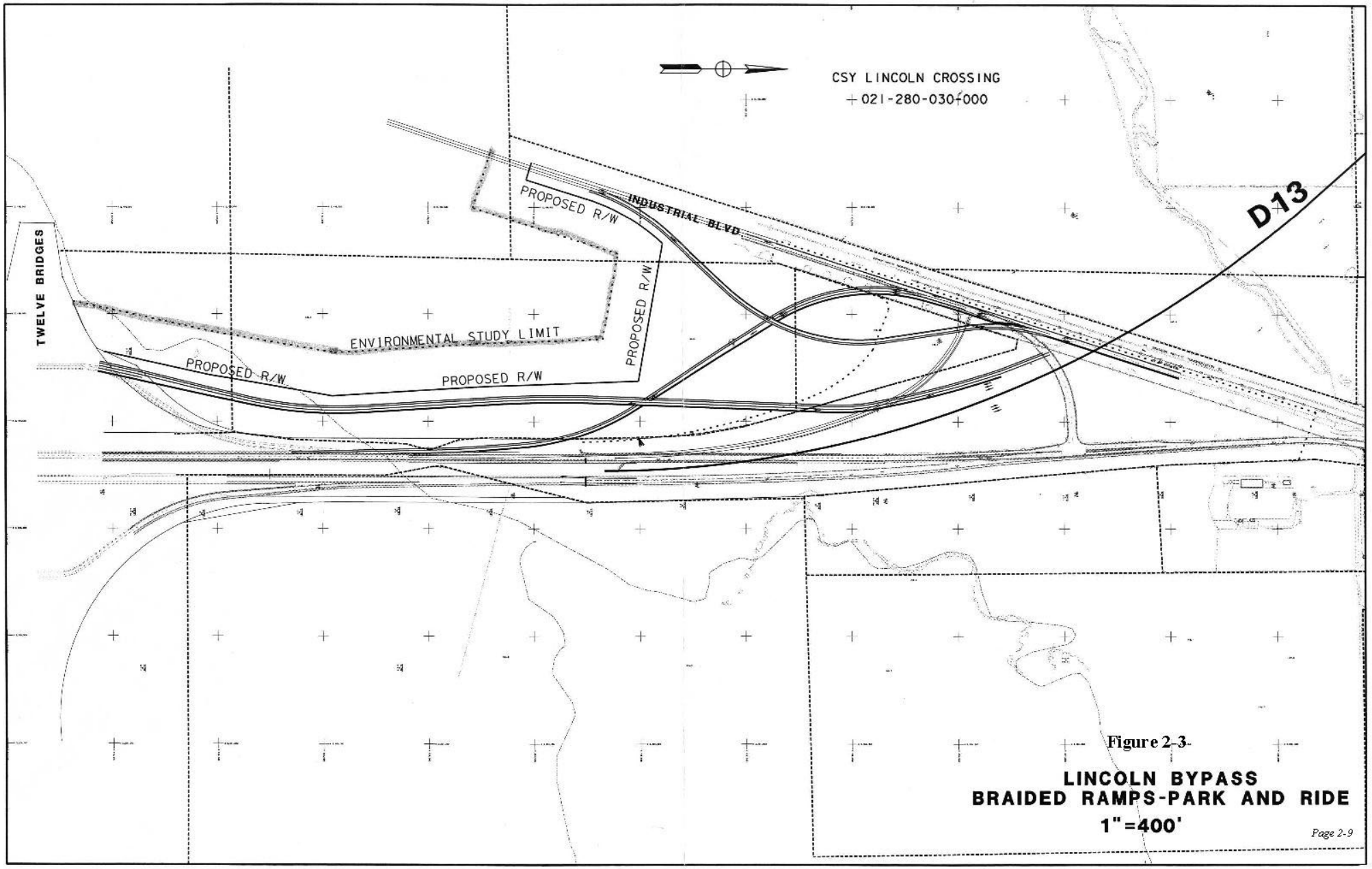


Figure 2-3

LINCOLN BYPASS
BRAIDED RAMPS-PARK AND RIDE
1"=400'

http://www.dot.ca.gov/dist3/departments/environmental/lincoln/graphics/fig3-3.jpg

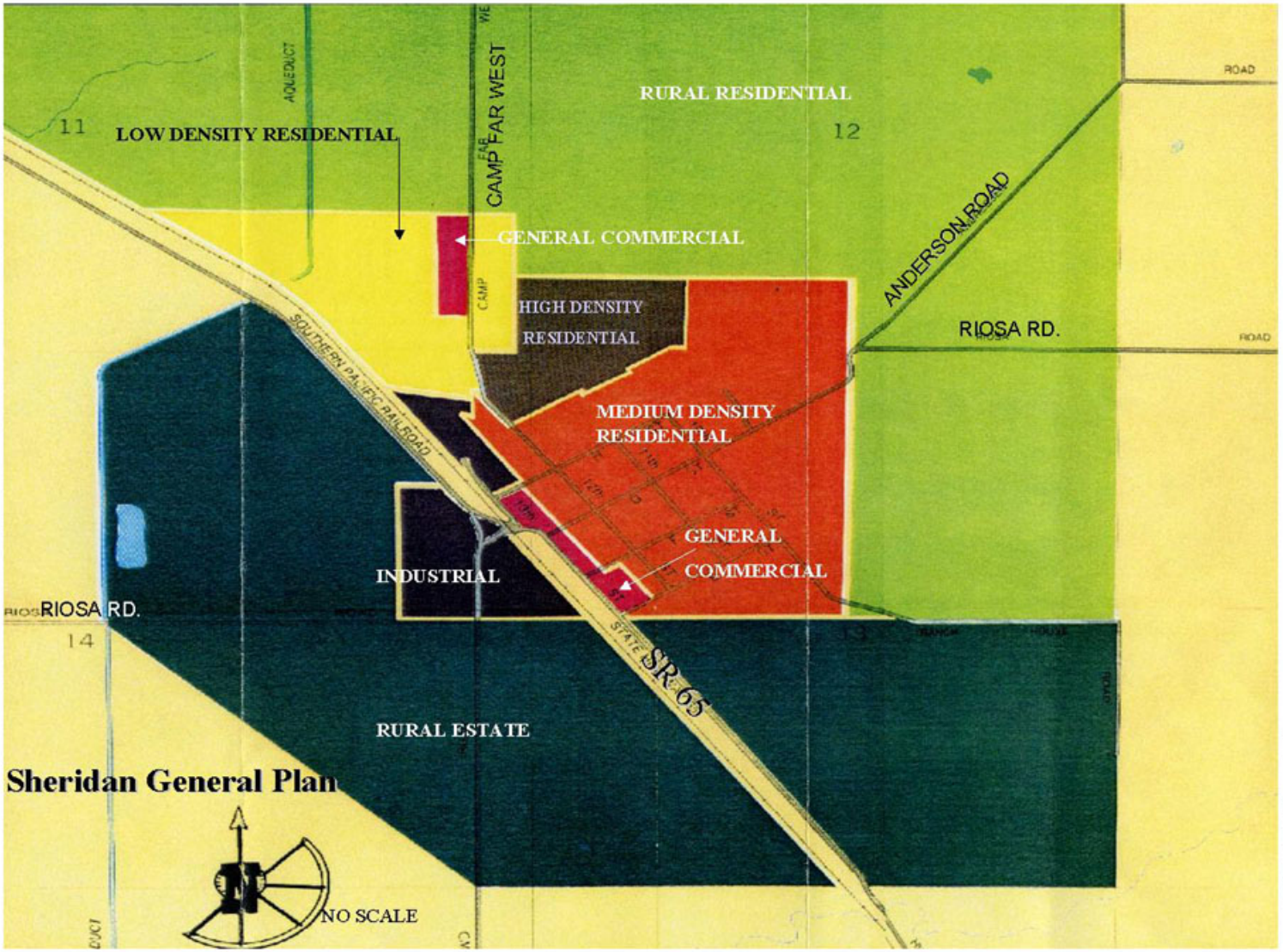


Figure 3-3

Sheridan General Plan

http://www.dot.ca.gov/dist3/departments/environmental/lincoln/graphics/fig3-3.jpg [12/5/2001 8:39:35 AM]

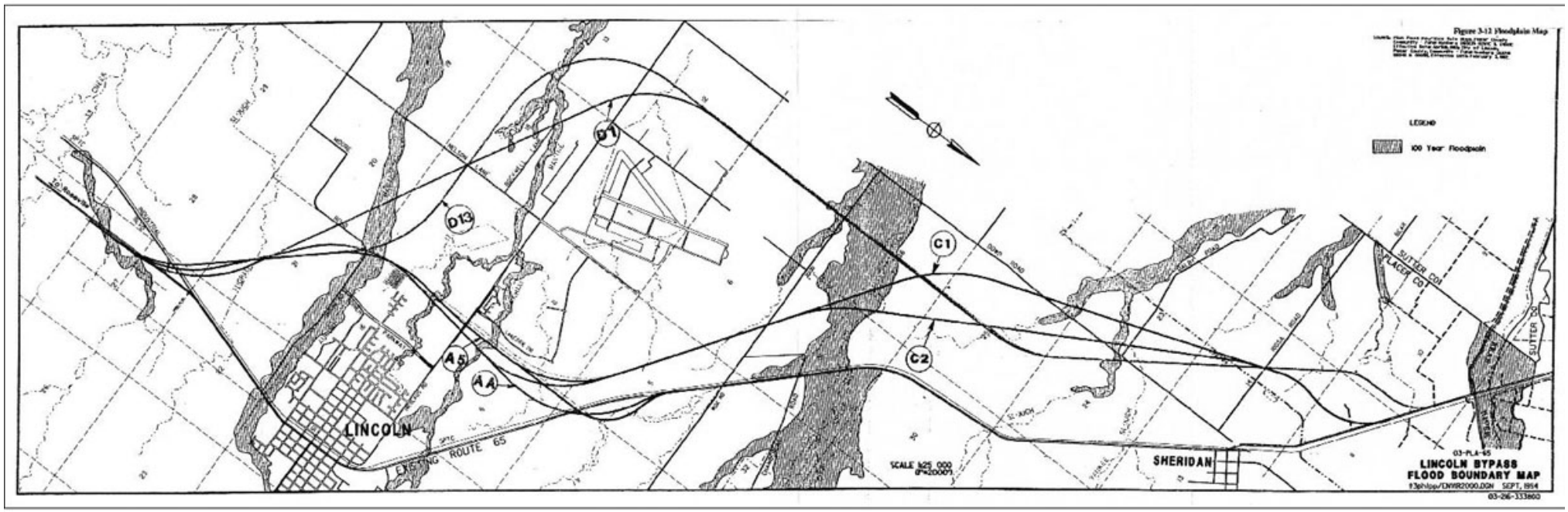


Figure 4-5

Floodplain Boundary Map

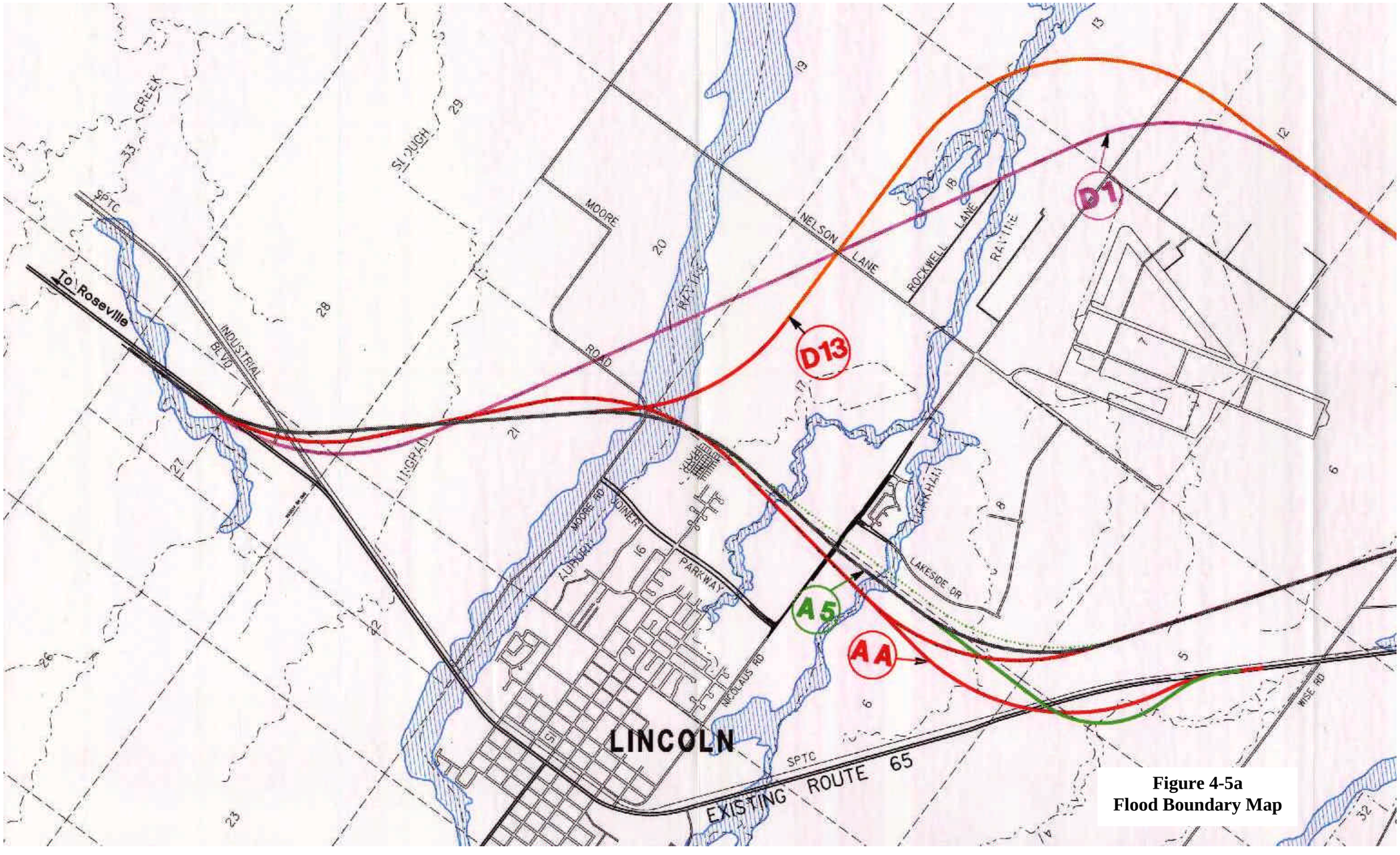
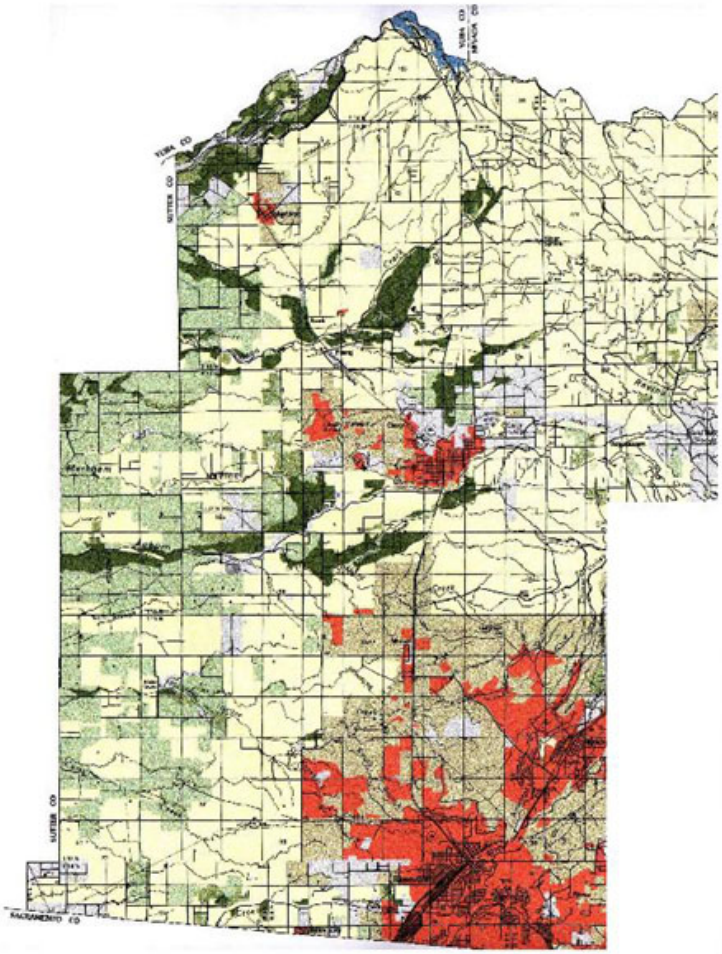
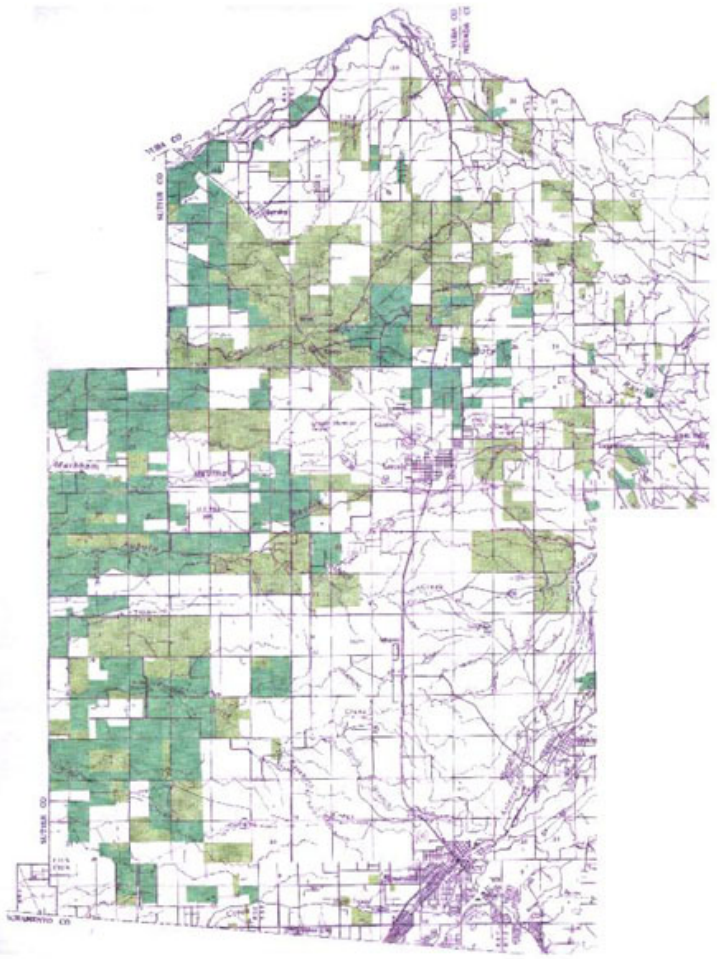


Figure 4-5a
Flood Boundary Map



Placer County Important Farmlands, 1996



Placer County Williamson Act Lands, 1996



FIGURE 3-4

PLACER COUNTY IMPORTANT FARMLANDS AND WILLIAMSON ACT LANDS

Placer 65

Subject	Task and Brief Description	Responsible Party	Reference	Notes	Task Complete Date
PRIOR TO PRE-CONSTRUCTION MEETING					
	Transfer Environmental Commitments Record (Redbook) to Resident Engineer.	Environmental Coordinator			
Mitigation Commitments to be completed prior to construction					
PRE-CONSTRUCTION ACTIVITIES	Prior to any ground disturbance, 2elderberry plants shall be transplanted.	Biologist	USFWS Biological Opinion	Transplanted to Aitkens ranch	2/14/08
	A Worker Environmental Awareness Training program for construction personnel shall be conducted before and during construction. A qualified Contractor-furnished, Service-approved biologist shall instruct all construction personnel about the vernal pools, swales and listed vernal pool crustaceans; elderberry plants and the beetle; and the terms and conditions of the Biological Opinion. Any workers new to the project site shall receive training within two weeks of arrival. An outline of the presentation shall be submitted to the RE for approval from the Service and the CDFG prior to conducting the presentation. A report describing the presentation shall be presented to the RE within five working days of the completion of the training. Written documentation of the training shall be transmitted to the Service's Sacramento Office within 30 days of completion of training.	Biological Monitor and Resident Engineer (RE)	USFWS Biological Opinion;Special Provisions		
	Notify the Regional Board in writing within 7 days of project completion.	RE/Environmental Construction Liaison (ECL)	401 Cert		
	Notify the RWQCB in writing of the start of any in-water activities.	RE/ECL	401 Cert		
	Submit a Notification of construction for the project to the RWQCB at least 30 days prior to start of construction.	RE/ECL	401 Cert		
	Prior to the start of work, the Contractor must sign the California Department of Fish and Game (CDFG) Section 1602 Streambed Alteration Agreement.	RE/ECL	CDFG 1602 Permit		
	Prior to beginning work, Environmentally Sensitive Areas (ESAs) shall be fenced and signed as shown on the plans within the project limits to protect biological resources.	Contractor/RE/ ECL	Special Provisions Section 10-1 Temporary Fence (Type ESA)	the RW fencing is the ESA fencing	
ESA	All avoided wetlands, including vernal pools and swales, within the project footprint, shall be designated as Environmentally Sensitive Areas (ESAs). This fencing shall buffer vernal pool areas by 250 feet if possible and shall protect the immediate boundaries of the vernal pools as well as the watershed that may be affected. Adequate signage shall be placed on the fence to indicate areas to be avoided.	LSA Biologist/RE	USFWS Biological Opinion		
PRE-CONSTRUCTION SURVEYS	Submit to CDFG a written report of the findings of the nesting migratory bird survey which includes proposed courses of action if active bird nests are found.	Contractor furnished Bird Biologist/ Caltrans Biologist/RE	CDFG 1602 Permit		
BIOLOGY					
ol Fairy Shrimp & Tadpole Shrimp	Runoff from dust control and oil or other chemicals used in construction activities shall be retained within the construction site and prevented from flowing into the adjacent vernal pool preserves. Runoff retention may be accomplished by creating small earthen berms, installing silt fences or hay bale dikes, limiting construction adjacent to preserves to the period between May and September or implementing other measures on the construction site to prevent runoff from entering the protected pools.	Contractor/RE/ ECL	USFWS Biological Opinion		

Subject	Task and Brief Description	Responsible Party	Reference	Notes	Task Complete
Vernal Pool VP	During construction and immediately after project completion, garbage and clean up related materials shall be removed and disposed of properly.	Contractor/RE/ ECL	USFWS Biological Opinion		
Migratory Birds	If there is evidence of nesting migratory birds or their occupied nests that could be adversely affected by construction activities or when If nesting birds are injured or killed as a result of construction activities, the Contractor shall immediately stop work within 15 meters of the nest(s) and notify the RE. Work shall not resume until the RE provides written notification that work may begin in this location.	Contractor/RE	Special Provisions Section 10-1 Protection of Migratory Birds		
	Within 15 days of contract approval, the Contractor shall submit a Migratory Bird Protection Program (MBPP). The Contractor shall allow 15 days after submittal for the Resident Engineer to review and accept the MBPP. The Contractor shall perform no construction activities, other than those specifically authorized in writing by the Resident Engineer, prior to acceptance of the MBPP.	Contractor/ Contractor's Bird Biologist/RE	Special Provisions Section 10-1 Protection of Migratory Birds		
	The Contractor shall furnish at least one Bird Biologist to conduct bat roosting surveys and bird nesting surveys, including those for Swainson's hawks and white-tailed kites. The Bird Biologist shall possess the qualifications listed in SSP 10-1. The Contractor shall submit the name and resume of the Bird Biologist(s) who will be performing surveys and/or monitoring for Swainson's hawks to the RE at least 30 days prior to the performance of work activities. No work may be performed until the Bird Biologist(s) responsible for performing Swainson's hawk surveys and/or monitoring has been approved by the RE.	Contractor/RE/ ECL	Special Provisions Section 10-1 Protection of Migratory Birds		
Valley Elderberry Longhorn Beetle	The two elderberry shrubs which are located within 20 ft of the centerline of the proposed alignment will be transplanted to a Service-approved conservation area that will be protected in perpetuity.	Biologist	USFWS Biological Opinion	Transplanted to Aitkens ranch	2/14/2008
	To compensate for direct affects to the beetle, prior to ground-breaking activities at the project site, Caltrans will establish 29 rooted elderberry seedlings and 29 associated native plants at the Aitken Ranch property. The two transplanted shrubs, seedlings and plantings will be established on this property. The minimum area required is 0.24 ac to ensure that no more than five elderberry seedlings and five associated native plants are planted per 1,800 ft2. The conservation area shall be managed and monitored in perpetuity as outlined in the Beetle Conservation Guidelines (FWS 1999)	Biologist	USFWS Biological Opinion		
	A biological monitor shall be on site during the elderberry transplanting and other seedling or planting procedures. The monitor shall be responsible for ensuring that no unauthorized take of VELB occurs. If any unauthorized take occurs, the monitor shall stop the work and immediately contact the U.S. Fish and Wildlife Service and California Department of Fish and Game.	Caltrans biologist or LSA Biologist	USFWS Biological Opinion		
Steelhead and ChinookSalmon	No fill material, including concrete beyond that identified in the project description, shall be allowed to enter any waterway or drainage.	Contractor/RE/ ECL	NOAA Fisheries Letter of Concurrence and supporting Biological Assessment; Special Provisions		
	Water that contacts wet concrete and has a pH greater than 9 must be pumped out of the coffer dam or other impoundment areas and disposed of outside the channel and away from the riparian zone or any wetland area.	Contractor/RE	NOAA Fisheries Letter of Concurrence and supporting Biological Assessment; Special Provisions		

Subject	Task and Brief Description	Responsible Party	Reference	Notes	Task Complete
STORMWATER/WATER QUALITY	The contractor shall prepare, submit and implement a Storm Water Pollution Prevention Plan (SWPPP) in accordance with the Special Provisions, Section 10-1.04, Water Pollution Control.	Contractor/ RE	Special Provisions		
CULTURAL RESOURCES	No outstanding commitments				
HAZARDOUS MATERIALS	The Contractor shall prepare a project specific Lead Compliance Plan to prevent or minimize worker exposure to lead while handling material containing aerially deposited lead.	Contractor/RE/ ECL	Special Provisions		
	Any building or other structure to be acquired will be evaluated for the presence of asbestos and lead-based paint. Due to the agricultural nature of the area, many of the parcels contain above ground storage tanks, which will require a PSI. In addition, many of the residences are equipped with septic systems; unknown conditions relating to the septic systems may exist.	Contractor/RE/ ECL	Special Provisions		
	Due to the former use of waste oil, potentially containing polychlorinated biphenyls (PCB's) to control dust in the railroad right-of-way, the railroad areas within the alignment could contain PCB affected soil as well as lead and/or diesel. These areas will require a PSI.	Contractor/RE/ ECL	Special Provisions		
	A site reconnaissance indicated the presence of pole mounted electrical transformers that are potential sources of PCB's. If leaks from electrical transformers that either will remain within the project construction zone or will require removal and/or relocation are encountered before or during construction, the transformer fluid will be sampled and analyzed by qualified personnel for detectable levels of PCBs. If PCBs are detected, the transformer will be removed and disposed of in accordance with regulatory agency requirements. Any stained soil encountered below electrical transformers with detectable PCBs levels will also be handled and disposed of in accordance with regulatory agency requirements. It is anticipated that, with the current standard of care, removal of any transformers for the project will not pose a significant hazardous materials risk.	Contractor/RE/ ECL	Special Provisions		
	A preliminary investigation and screening for ADL will be performed along the proposed project. Segments that will encroach/connect into existing SR 65 State Right-of-way shall be screened in order to determine the levels of lead in soil. Should ADL be encountered above regulatory thresholds, the soil will be handled and/or disposed of in accordance with regulatory agency requirements. A Lead Compliance Plan and a Health and Safety Plan will be prepared to address worker safety when working with potentially lead-bearing soils.	Contractor/RE/ ECL	Special Provisions		

Subject	Task and Brief Description	Responsible Party	Reference	Notes	Task Complete
	A preliminary investigation and screening for soil and groundwater impacts from hazardous materials or wastes and/or petroleum hydrocarbons on a site-specific basis will be performed prior to acquisition in order to determine the levels of contamination. Should soil and or groundwater contamination be encountered above regulatory thresholds, the soil will be handled and/or disposed of in accordance with regulatory agency requirements. A Health and Safety Plan shall be prepared to address worker safety when working with potentially contaminated soils; Special Provisions apply to this type of project.	Contractor/RE/ ECL	Special Provisions		
INVASIVE SPECIES	Construction equipment leaving an identified invasive plant area will be cleaned at a designated vehicle wash facility;	Contractor/RE/ ECL	Environmental Document		
	Prior to arriving at the project site, construction equipment (from a noxious weed-infested area or area of unknown weed status) will be cleaned of all attached soil or plant parts at a designated vehicle wash facility;	Contractor/RE/ ECL	Environmental Document		
Visual	Oak Removal: Tree removal will be kept to a minimum. Because of the loss in change of spatial enclosure and the number of heritage oak stands, it is particularly important to leave existing trees as close to the highway as safety will allow. Prior to clearing operations, trees needing to be removed will be individually marked for cutting and all other trees will be protected from damage.	Design/RE/Contractor/Landscape	Environmental Document		
	Oak Replacement: Caltrans Landscape Architects will provide re-vegetation plans, which will further enhance the Lincoln Bypass.	Design	Environmental Document		
REGULATORY PERMITS & APPROVALS					
U.S. Fish and Wildlife Service	**U.S. Fish and Wildlife Service Biological Opinion Requirements are listed above. In addition, the following reporting requirements pertain to all species:**				
	1. Written documentation of worker environmental awareness training for construction personnel shall be transmitted to the Sacramento Fish and Wildlife Office within 30 days of completion of training.	LSA Biologist/RE	USFWS Biological Opinion		
	2. Annual reports shall be sent to the Service describing the progress of implementation of all the commitments in the Conservation Measures and Terms and Conditions of the Biological Opinion. The first report is due Jan. 31, the first year after any ground disturbance. Reports are due annually on Jan. 31 until all terms, conditions, and performance criteria are met.	LSA Biologist/RE	USFWS Biological Opinion		
	3. The Sacramento Fish and Wildlife Office is to be notified immediatley of the finding of any listed species, any incidental take of species other than that permitted in the BO, if a listed species is inadvertently killed or injured, if any fish is/are killed due to construction activities or if any dead or sick listed wildlife species is found in or adjacent to pesticide-treated areas. Several contact offices and phone numbers- See BO for details.	LSA Biologist/RE	USFWS Biological Opinion		
POST CONSTRUCTION	8. A post-construction compliance report prepared by the Contractor-furnished, Service-approved biologist shall be forwarded to the Chief, Endangered Species Division, at the Sacramento Fish and Wildlife Office within 60 calendar days of the completion of the project. (Refer to the USFWS BO, 3/18/02 Amendment, page 48, item C for required contents of this report.)	LSA Biologist/Caltrans Biologist	USFWS Biological Opinion		
U.S. Army Corps of Engineers	**Section 404 Permit**				
	Special condition 3: To mitigate for the loss of 30.14-acres of waters of the United States and indirect effects to 31.10-acres of waters of the United States, you shall, prior to May 31, 2008: Purchase 7.53 credits of from the Orchard Creek Conservation Bank; Purchase 14.00 credits of vernal pool preservation from the Mariner Ranch Conservation Bank; Preserve 31.15-acres of vernal pools at the Rockwell Mitigation Site; Preserve 11.06-acres of vernal pools at the Aitken Ranch Mitigation Site; Construct 10.72-acres of vernal pools at the Aitken Ranch Mitigation Site; Purchase 10.85 credits of constructed seasonal marsh at Beach Lake mitigation bank; Construct 4.95 acres of freshwater marsh at the Aiken Ranch mitigation site; and Preserve 1.80 acres of Auburn Ravine at Aiken Ranch.	Biologist	USACE Section 404 Permit		

Subject	Task and Brief Description	Responsible Party	Reference	Notes	Task Complete
	Special condition 4: Prior to September 30, 2011, you shall restore approximately 2.86-acres of waters of the United States at the site of approved crossings within approved project site, which include Sough Ingram Slough, North Ingram Slough, Auburn Ravine, Markam Ravine, Airport Creek, Coon Creek, Big Yankee Creek. In addition, you shall restore approximately 2.06-acres of mixed riparian forest habitat at Auburn Ravine and Coon Creek.	Biologist	USACE Section 404 Permit		
	You shall develop a final comprehensive mitigation and monitoring pln for the restoration of this approximately 2.86-acres of waters of the United States, which must be approved by the Army Corps of Engineers, by May 31, 2008. The plan shall include mitigation location and design drawings, vegetation plans, including target species to be planted, and final success criteria, presented in the format of the Sacramento District's Habitat Mitigation and Monitoring Proposal Guidelines, dated December 30, 2004.	Biologist	USACE Section 404 Permit		
	You shall establish and maintain, in perpetuity, a 317-acre preserve at Aitken Ranch and a 514-acre preserve at the Rockwell site containing in total, 57.88 acres of created, avoided, and preserved waters of the United States. The purpose of these preserves is to insure that functions and values of the aquatic environment are protected.	Contractor/RE	USACE Section 404 Permit		
	To insure that the preserve is properly managed, you shall develop specific and detailed preserve management plans for the on-site and off-site mitigation, preservation, and avoidance areas. These plans shall be submitted to and specifically approved, in writing, by the Corps of Engineers prior to May 31, 2008. This plan shall describe in detail any activities that are proposed within the preserve area(s) and the long term funding and maintenance of each of the preserve areas.	Contractor/RE	USACE Section 404 Permit		
	To protect the integrity of the preserves and avoid unanticipated future impacts, no roads, utility lines, trails, benches, equipment or fuel storage, grading, firebreaks, mowing, grazing, planting, discing, pesticide use, burning, or other structures or activities shall be constructed or occur within the on-site and off-site mitigation, preservation, and avoidance areas without specific, advance written approval from the Corps of Engineers.	Contractor/RE/ ECL	USACE Section 404 Permit		
	In no case shall initiation of the construction of compensatory mitigation be delayed beyond May 31, 2011. Construction of compensatory mitigation shall be completed no later than September 30, 2011.	Biologist	USACE Section 404 Permit		
	To insure that mitigation is completed as required, you shall notify the District Engineer of the start date and the completion date of the mitigation construction, in writing and no later than ten (10) calendar days after each date.	Contractor/RE/ ECL	USACE Section 404 Permit		
	To provide a permanent record of the completed mitigation work, you shall provide two complete sets of as builts of the completed work for all off-site mitigation and preservation areas to the Corps of Engineers. The as builts shall indicate changes made from the original plans in indelible red ink. These as builts shall be provided to this office no later than 60 days after the completion of construction of the mitigation are wetlands.	Biologist	USACE Section 404 Permit		
	To assure success of the preserved and created waters of the United States, you shall monitor compensatory mitigation, avoidance, and preservation areas for five years or until the success criteria described in the approved mitigation plan are met, whichever is greater. This period shall commence upon completion of the construction of the mitigation wetlands. Additionally, continued success of the mitigation wetlands, without human intervention, must be demonstrated for three consecutive years, once the success criteria have been met. The mitigation plan will not be deemed successful until this criterion has been met.	Biologist	USACE Section 404 Permit		
	You shall submit monitoring reports to this office for each year of the five-year monitoring period, and for each additional year, if remediation is required, by October 1 of each year. You shall submit an additional monitoring report at the end of the three-year period demonstrating continued success of the mitigation program without human intervention.	Biologist	USACE Section 404 Permit		

Subject	Task and Brief Description	Responsible Party	Reference	Notes	Task Complete
	Prior to May 31, 2008, you shall, to insure long-term viability of mitigation, preservation, and avoidance areas: Establish fully-funded endowments to provide for maintenance and monitoring of on-site and off-site mitigation, preservation, and avoidance areas. Designate an appropriate conservation-oriented third part entity to function as preserve manager and to hold the required conservation easements. Record permanent conservation easements maintaining all mitigation, preservation, and avoidance areas as wetland preserve and wildlife habitat in perpetuity. Copies of the proposed conservation easement language shall be provided to the Corps of Engineers for approval prior to recordation. Provide copies of the recorded documents to the Corps of Engineers prior to May 31, 2008.	Biologist	USACE Section 404 Permit		
	You shall design and construct all crossings of waters of the United States to retain a natural substrate where appropriate, and to accommodate all reasonably foreseeable expected high flows. Specific detailed plans for these crossings shall be submitted to and approved by the Corps of Engineers prior to implementation.	Design	USACE Section 404 Permit		
	You must allow representatives from the Corps of Engineers to inspect the authorized activity and any mitigation, preservation, or avoidance areas at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and condition of your permit.	Contractor/RE/ ECL	USACE Section 404 Permit		
	Your responsibility to complete the required compensatory mitigation as set forth in Special Conditions 3 and 4 will not be considered fulfilled until you have demonstrated mitigation success and have received written verification from the U.S. Army Corps of Engineers.	Biologist	USACE Section 404 Permit		
	Upon Completion of the project and all mitigation, the 404 Compliance Certification form shall be filled out and sent to USACE.	ECL/RE/Caltrans Biologist	USACE Section 404 Permit		
	If previously unknown historic or archaeological remains are discovered during activities authorized by the Section 404 Permit, the USACE must be notified immediately . The USACE will then initiate the necessary state and federal coordination.	ECL/RE	USACE Section 404 Permit		
Regional Water Quality Control Board	**Section 401 Water Quality Certification**				
	Caltrans must notify the Central Valley Regional Water Quality Control Board (CVRWQCB) in writing of the start of any in-water activities.	RE Biologist	RWQCB Certification		
	Activities shall not cause visible oil, grease, or foam in the work area or downstream.	Contractor/RE/ ECL	RWQCB Certification		
	All areas disturbed by project activities shall be protected from washout or erosion.	Contractor/RE/ ECL	RWQCB Certification		
	In the event that project activities result in the deposition of soil materials or creation of a visible plume in surface waters, monitoring (SEE REQUIREMENTS IN PERMIT) shall be conducted immediately upstream and 300 feet downstream of the work site and the results reported to CVRWQCB within two weeks	Contractor/RE/ ECL	RWQCB Certification		
	CVRWQCB shall be notified immediately of any spill of petroleum products or other organic or earthen materials.	ECL/RE	RWQCB Certification		
California Department of Fish & Game	**Section 1602 Streambed Alteration Agreement Notification No. 1600-2005-0208-R2 Expires on Dec. 31, 2009**				
	Notify CDFG within 2 working days of start of work in the stream zone each year.	ECL	CDFG 1602 Permit		
	Notify CDFG within 2 working days of completion of work in the stream zone each year.	ECL	CDFG 1602 Permit		
	If operations require moving of equipment across a live stream (flowing water), the operations shall be conducted without increasing stream turbidity. For repeat crossings, temporary bridge(s) or culvert(s) shall be installed. The contractor must submit to CDFG a detailed stream crossing plan to address all four waterways. (Refer to 1602 Permit, item 11 for further information.) If CDFG does not respond within 10 calendar days, the plan shall be automatically approved.	Contractor/ RE/ECL	CDFG 1602 Permit		
	Construction activities shall be timed with awareness of precipitation forecasts and likely increases in stream flow. Construction activities shall be adjusted allowing protection activities to continue and all reasonable erosion control measures shall be implemented prior to all storm events. Weather forecasts shall be documented upon request by CDFG.	Contractor/ RE/ECL	CDFG 1602 Permit		

Subject	Task and Brief Description	Responsible Party	Reference	Notes	Task Complete
	CDFG shall be notified within two working days of the beginning of work within the stream zone of Coon Creek, Auburn Ravine, Markham Ravine, Airport Creek, South and North Yankee Slough and Big Yankee Slough and South & North Ingram Slough. CDFG shall also be notified within two working days of the completion of work within these stream zones.	RE ECL/Biologist	CDFG 1602 Permit		
	Raw cement/concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances which could be hazardous to aquatic life, resulting from project related activities, shall be prevented from contaminating the soil and/or entering waters of the state. Any of these materials placed within, or where they may enter, a stream or lake, shall be removed immediately. CDFG shall be notified immediately of any spills, including seditment discharges that may be deleterious to aquatic life, and shall be consulted regarding clean-up procedures.	Contractor/ RE/ECL	CDFG 1602 Permit		
	The time period for completing the work within the stream zone of **Auburn Ravine and Coon Creek** shall be restricted to periods of low stream flow and dry weather and shall be confined to the period of June 1 to October 31.	Contractor/ RE/ECL	CDFG 1602 Permit		
	The time period for completing the work within the stream zone of **South Ingram Slough, North Ingram Slough, Markham Ravine, Airport Creek, South Yankee Slough, North Yankee Slough, and Big Yankee Slough** shall be restricted to periods of low stream flow and dry weather and shall be confined to the period of April 15 to October 31.	Contractor/ RE/ECL	CDFG 1602 Permit		
	Construction activities shall cease until all reasonable erosion control measures have been implemented prior to all storm events.	Contractor/ RE/ECL	CDFG 1602 Permit		
	No ground disturbing work will occur within the stream zone during wet weather. Wet Weather is defined as when there has been ¼ inch of rain in a 24-hour period.	Contractor/ RE/ECL	CDFG 1602 Permit		
	No work will occur during a dry out period of 24 hours after the above referenced wet weather. Revegetation, restoration and erosion control work is not confined to this time period.	Contractor/ RE/ECL	CDFG 1602 Permit		
	If CALTRANS finds more time is needed to complete the authorized activity, CALTRANS shall submit a written request for a work period time extension to the Department. The work period extension request shall provide the following information: 1) Describe the extent of work already completed; 2) Provide specific detail of the activities that remain to be completed within the stream zone; and 3) Detail the actual time required to complete each of the remaining activities within the stream zone. The work period extension request should consider the effects of increased stream conditions, rain delays, increased erosion control measures, limited access due to saturated soil conditions, and limited growth of erosion control grasses due to cool weather. Time extensions are issued at the discretion of the Department. The Department will review the written request to work beyond the established work period. The Department will have ten calendar days to approve the proposed work period extension. The Department reserves the right to require additional measures designed to protect natural resources.	RE ECL/Biologist	CDFG 1602 Permit		
	CALTRANS is responsible for obtaining all required permits and authorizations from local, state and federal agencies. CALTRANS shall notify the Department where conflicts exist between the provisions of this agreement and those imposed by other regulatory agencies. Unless otherwise notified, CALTRANS shall comply with the provision that offers the greatest protection to water quality, species of special concern and/or critical habitat.	RE ECL/Biologist	CDFG 1602 Permit		
	A copy of this agreement shall be provided to the Contractor(s) who works within the stream zone of this project. A copy of this agreement and a copy of the project description, as submitted to the Department, must be available upon request at the work site. The Contractor(s) shall sign this agreement prior to working within the stream zone. The Contractor(s) or a designated crew supervisor(s) shall be on site the entire time a work crew is working near the stream zone. The supervisor(s) shall be completely familiar with the terms and conditions of this agreement and shall ensure compliance with all terms and conditions. The Department reserves the right to enter the project site at any time to ensure that there is compliance with the terms/conditions of this Agreement.	Contractor/RE/ ECL	CDFG 1602 Permit		

Subject	Task and Brief Description	Responsible Party	Reference	Notes	Task Complete
	CALTRANS shall provide the Department detailed construction schedule. The schedule shall identify the approximate beginning and completion date for each activity within the stream zone. Updated schedules shall be provided as necessary to keep the Department informed of the status of the project.	Contractor/RE/ ECL	CDFG 1602 Permit		
	It is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird except as otherwise provided by the Fish and Game Code. No trees that contain active nests of birds shall be disturbed until all eggs have hatched and young birds have fledged without prior consultation and approval of a Department representative.	RE ECL/Biologist	CDFG 1602 Permit		
	It is recommended that the trees that are identified for removal, be removed during the non-nesting period of August 15 to February 15. If tree removal must occur during the period of February 16 and August 14, a qualified biologist shall conduct a pre-construction survey for bird nests or nesting activity in the project area. If any active nests or nesting behaviors are found, the Department must be notified prior to further action. The survey results shall be provided to the Department prior to removing any trees. The survey shall be submitted to the Department as instructed in item number 2 above.	RE ECL/Biologist	CDFG 1602 Permit		
	Except for site preparation for the placement of dewatering structures, no excavation in the live stream (flowing water) is allowed. Contractor must submit a detailed water diversion/dewatering plan to the Department. Dewatering structures may include the use of sand bag, Port-a-dams, water bladder dams, K-rails or driven sheet metal coffer dams. Temporary culvert(s) must be sized to handle high flows of from unanticipated storm events. The water diversion plan must include provisions for fish passage. The Department will review the proposed water diversion method. The Department will have 10 calendar days to approve the plan or provide the requirements for that approval. If the Department does not respond within 10 days, the plan shall be automatically approved. All water dewatering structures shall be removed from the stream zone by 0ctober 31.	Contractor/ RE/ECL	CDFG 1602 Permit		
	When temporary stream crossing roads and/or workpads are necessary to complete operations across any waterway, they shall be constructed in the following manner: A temporary culvert(s) of sufficient size to handle anticipated storm events shall be placed on the stream bottom. A layer of washed round river cobble (0.5 to 3 inch diameter in size) shall be placed around the culvert from bank to bank. A layer of clean "washed" crushed gravel may be placed on the layer of river cobbles. The top layer may be fill material found at the work site or imported from off site. Fill material shall not extend beyond the layer of river cobble. Upon completion of the project, the fill material and most of the crushed gravel shall be removed from the stream bottom. The river cobble may remain in the stream. The temporary culvert crossing shall be removed prior to storm events that are likely to wash out the crossing. The crossing shall be removed upon completion of the project.	Contractor/ RE/ECL	CDFG 1602 Permit		
	Disturbance or removal of vegetation shall not exceed the minimum necessary to complete operations. Other than those trees previously identified for removal in this agreement's notification package, no native trees with a trunk diameter at breast height (DBH) in excess of four (4) inches shall be removed or damaged without prior consultation and approval of a Department representative. Using hand tools (clippers, chain saw, etc.), trees may be trimmed to the extent necessary to gain access to the work sites. All cleared material/vegetation shall be removed out of the riparian/stream zone.	RE ECL/Biologist	CDFG 1602 Permit		
	Precautions to minimize turbidity/siltation shall be taken into account during project planning and implementation. This may require the placement of silt fencing, coir logs, coir rolls, straw bale dikes, or other siltation barriers so that silt and/or other deleterious materials are not allowed to pass to downstream reaches. Passage of sediment beyond the sediment barrier(s) is prohibited. If any sediment barrier fails to retain sediment, corrective measures shall be taken. The sediment barrier(s) shall be maintained in good operating condition throughout the construction period and the following rainy season. Maintenance includes, but is not limited to, removal of accumulated silt and/or replacement of damaged silt fencing, coir logs, coir rolls, and/or straw bale dikes. CALTRANS is responsible for the removal of non-biodegradable silt barriers (such as plastic silt fencing) after the disturbed areas have been stabilized with erosion control vegetation (usually after the first growing season). Upon Department determination that turbidity/siltation levels resulting from project related activities constitute a threat to aquatic life, activities associated with the turbidity/siltation shall be halted until effective Department approved control devices are installed or abatement procedures are initiated.	Contractor/RE/ ECL	CDFG 1602 Permit		

Subject	Task and Brief Description	Responsible Party	Reference	Notes	Task Complete
	Raw cement/concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances which could be hazardous to aquatic life, resulting from project related activities, shall be prevented from contaminating the soil and/or entering the waters of the state. Any of these materials, placed within or where they may enter a stream or lake by CALTRANS or any party working under contract or with the permission of CALTRANS, shall be removed immediately. The Department shall be notified immediately by CALTRANS of any spills and shall be consulted regarding clean-up procedures.	Contractor/RE/ ECL	CDFG 1602 Permit		
	During construction, the contractor shall not dump any litter or construction debris within the stream zone. All construction debris and associated materials shall be removed from the work site upon completion of this project.	Contractor/RE/ ECL	CDFG 1602 Permit		
	All exposed/disturbed areas and access points within the stream zone left barren of vegetation as a result of the construction activities shall be restored using locally native grass seeds, locally native grass plugs and/or a mix of quick growing sterile non-native grass with locally native grass seeds. Seeded areas shall be covered with broadcast straw and/or jut netted (monofilament erosion blankets are not authorized).	Contractor/RE/ ECL	CDFG 1602 Permit		
	This agreement is not valid and work may not begin until the agreement is signed by a representative of the Department of Fish & Game. Stream alteration work authorized by this agreement expires on December 31, 2011. This agreement shall remain in effect for that time necessary to satisfy all required mitigation and monitoring measures.	Contractor/RE/ ECL	CDFG 1602 Permit		
	Requests for Extensions (agreement renewal), Minor Amendments, and Major Amendments must be submitted in writing prior to expiration of the agreement or commencement of work on modified project plans. Extensions and Amendments are issued at the discretion of the Department. Please see the current fee schedule to determine the appropriate fee.	RE ECL/Biologist	CDFG 1602 Permit		
	The Department may take enforcement action and reserves the right to suspend and/or revoke this agreement if the Department determines that the circumstances warrant. The circumstances that could require these Department actions include, but are not limited to, the following: A) Failure to comply with the terms/conditions of this agreement. B) The information provided by CALTRANS in support of the agreement/notification is determined by the Department to be incomplete, or inaccurate. C) When new information becomes available to the Department representative(s) that was not known when preparing the original terms/conditions of this agreement. D) The project as described in the notification, agreement, or amendment has changed, or conditions affecting fish and wildlife resources change.	Contractor/ RE/ECL	CDFG 1602 Permit		
	If, in the opinion of the Department, conditions arise or change in such a manner as to be considered deleterious to aquatic life, operations shall cease until corrective measures are taken.	Contractor/ RE/ECL	CDFG 1602 Permit		
	Certificate of Environmental Compliance must be signed at Contract Completion and Acceptance (CCA)	PM/RE/ECL/E NV Senior	Redbook	All these people must sign the CEC	

Indirect and Cumulative Impact Analysis
Lincoln Bypass - State Route 65
Placer County, California

KP R19.6 / R38.3
PM R12.2 / R23.8



SR 65 Lincoln Bypass
Indirect and Cumulative Impact Analysis

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Introduction

Caltrans is proposing to construct a State Route 65 freeway bypassing the City of Lincoln in Placer County, and has circulated a Draft Environmental Impact Report/Draft Environmental Impact Statement for public review and comment from November 21, 2001 to January 15, 2002. At that time, and during subsequent consultations as part of the NEPA/404 Integration Process, the U.S. Environmental Protection Agency and the U.S. Army Corps of Engineers raised further concerns about the potential cumulative and indirect effects of the project. The following analysis examines the potential cumulative and indirect impacts associated with the Bypass. Consultation with the EPA for guidance on addressing cumulative and indirect impacts was helpful in developing this analysis.

Assessing indirect impacts of transportation projects in rapidly growing areas of California is difficult. Caltrans projects are designed to relieve existing congestion and respond to planned growth in accordance with local and regional plans and policies. Local governments determine the extent of growth they desire. These growth decisions are independent of any California Department of Transportation position and are the legal authority of the local agencies. Due to limited resources and competing local, regional and statewide transportation needs, Caltrans must work with regional transportation planning agencies and local entities to identify funding priorities. Projects may be funded in whole, or in part, by local, state, federal or developer funds. Many local projects do not have state or federal funding and may be constructed at the discretion of the local agency. Resources are distributed to projects that will improve mobility and the safety of the public. Often project construction is done in phases so that resources can be equitably distributed throughout the state.

Methodology/Limitations

A variety of quantitative and qualitative methods such as ArcView GIS files, City and County General Plans, conversations with city and county planners, review of planning websites and documents were used in this analysis. GIS coverage's were downloaded from resource agencies, or obtained from Placer County and the City of Lincoln.

In addition to the mapping and quantitative computations, qualitative information was obtained from City of Lincoln and Placer County General Plans, City and County personnel, Sacramento Area Council of Governments, Placer County Transportation Planning Agency, regulatory websites and personnel, resource websites and personnel, CEQA, NEPA and FHWA guidance papers and regulations, various project environmental documents, academic papers on the subject matter, State Route 65 specialists studies, and consultants who have provided analysis. A list of these resources is provided at the end of this document.

There are inherent difficulties in assessing indirect and cumulative impacts that need to be taken into consideration. Academic papers such as, "Road Expansion, Urban Growth, and Induced Travel: A Path Analysis" and "Do Highways Matter? Evidence And Policy Implications of Highways' Influence on Metropolitan Development" discuss the complexities

involved with transportation planning. References cited at the end of this analysis provided much discussion on analysis but failed to provide exact definitions of terminology. Instead they gave discretion to the transportation-planning agency and pointed to case law for examples.

The Council of Environmental Quality and the National Environmental Policy Act regulations identify uncertainties about evaluating indirect effects of a proposal and recognize that many methods of analysis have inherent weaknesses.

> *"…if there is total uncertainty about the identity of future land owners or the nature of future land uses, then of course, the agency is not required to engage in speculation or contemplation about their future plans. But, in the ordinary course of business, people do make judgments based upon reasonably foreseeable occurrences. It will often be possible to consider the likely purchasers and the development trends in that area or similar areas in recent years; or the likelihood that the land will be used for an energy project, shopping center, subdivision, farm or factory. The agency has the responsibility to make an informed judgment, and to estimate future impacts on that basis, especially if trends are ascertainable or potential purchasers have made themselves known. The agency cannot ignore these uncertain, but probable, effects of its decisions."*

This analysis provides information on the known landowners, growth pressures, and projects in the area and the known plans and policies of the local jurisdictions and what all this may mean to natural resources in the project area. The speculative future of land ownership and projections of land development scenarios are beyond the scope of this analysis.

The task of determining indirect and cumulative impacts from a project is an exercise in professional judgment and prudence. Caltrans has tried to obtain information that will satisfy the requirements of CEQA, NEPA and Section 404 of the Clean Water Act, and to provide regulatory agencies with information regarding possible impacts associated with this project.

FHWA's "Interim Guidance: Questions and Answers Regarding Indirect and Cumulative Impact Considerations in the NEPA Process" describes the difficulty in analyzing these types of impacts. The guidance states, "A proposal for a new alignment project in an area where no transportation facility currently exists, or one that adds new access to an existing facility may indicate the potential for project related indirect impacts from other distinct but connected actions." It is up to the transportation agency to analyze and determine what 'may' occur given the conditions of other factors in the project area.

The guidance also directs the project proponent to include the effects of "reasonably foreseeable" actions. The focus is intended to differentiate what is likely to occur or probable, rather than what is possible. This distinction is an important point to keep in mind when reviewing the information contained in this analysis. The guidance further states, "…we find that reasonably foreseeable events, although still uncertain, must be probable."

The National Cooperative Highway Research Program desk reference indicates that under NEPA, an EIS should include all reasonably foreseeable impacts, <u>not</u> all conceivable impacts. The reference also concludes that "….all potentially significant future impacts must

be evaluated, but may be ignored if the impact is improbable although possible, or if the impact is too uncertain to make reasonable evaluation of it possible."

Although the bypass may change the pattern of growth in the area, much of the growth that would occur in the area can be determined from reviewing plans of the City and County, obtaining information on projected growth, recent development patterns, discussion with City and County personnel and the policies currently implemented in the project area. Planned growth is occurring in the project area and although the bypass may accelerate some of this growth, there are no specific developments that have been identified as dependent upon the freeway for its ultimate approval.

Several meetings and discussions with EPA regarding Indirect and Cumulative Impacts provided direction on how to this issue within the project area. Although, there were differences in perspectives regarding impacts, an agreement was made to provide an analysis that included discussion and possible quantitative information regarding resources in the area. In order to respond to EPA's concerns regarding Indirect and Cumulative impact analysis, Caltrans agreed to provide some form of measurement of the resources that are within proximity to the bypass intersections and interchanges and hence the four-mile circle was used to satisfy this request. This concept of using a four-mile circle was published in Caltrans Standard Environmental Reference material as a guide for determining possible impacts. Possible impacts are not necessarily probable and for that reason may not be considered as indirect impacts.

This four-mile circle may be too large given the growth that is projected and planned in the area and there is the potential to double count impacts due to the City's plans to develop regardless of the bypass. The four-mile circles also cross, or come very close to, the existing SR 65 alignment. These circles are therefore seen as worst-case potential influence areas from **both** the bypass and the development patterns that are occurring in the area. It cannot be determined which indirect impacts are attributed directly to the bypass and which can be attributed directly to the development in the area. The four-mile circles are used to provide information on the resources in the area and provide a reference for discussion regarding these potential impacts.

Many factors contribute to the changes in land use in the Lincoln area. The following analysis presents some of these factors for consideration. The project may have potential indirect impacts in areas around the interchanges and at-grade intersections, but determining the impacts of what is probable versus what is possible is a very difficult task. Models used in any analysis must use assumptions that are agreed upon by all parties involved. If there is question as to the validity of a model's assumptions, other analysis can be conducted at the discretion of the lead agency. It is challenges of this sort that make it difficult to clearly identify the exact impacts, other than direct impacts, attributable to the bypass.

Information Gathering

Obtaining the information in this analysis posed tremendous challenges. The GIS files were often not in the correct technical map projection to be used with other GIS files. Many of the environmental documents of local projects, when available, did not provide quantitative information of potential indirect and cumulative impacts but merely discussed the natural resource impacts in a general sense. Very often, the environmental documents simply were not available.

Project Description

The Draft Environmental Impact Report/Draft Environmental Impact Statement (DEIR/S) for the State Route (SR) 65 Lincoln Bypass Project covers the ultimate project, which includes a four-lane freeway with interchanges at Industrial Avenue, Nelson Lane, Wise Road and Riosa Road. There will be an overcrossing at Nicolaus Road and an undercrossing at Dowd Road, neither of which will have access to the freeway. A cul-de sac will be constructed at Moore Road, eliminating access to the freeway from Moore Road. Due to funding constraints and project priorities, the bypass will be built in phases. However, the purchase of right-of-way and the earthwork for the ultimate project will be done in the initial phase.

Revisions to the project may be necessary if funding changes. A minimum project will be constructed following the completion and approval of the Final EIR/EIS and permit approvals. Final engineering design, preparation of plans, specifications and estimates and right of way acquisition follow the environmental approval process before advertising and awarding of a construction contract occurs. Funding availability will dictate the progress of future construction for the ultimate project. Initially, four lanes will be constructed from the beginning of the project near Industrial Avenue up to Nelson Lane. From that point on to where the Bypass would re-join existing SR 65 near Sheridan, only two lanes will be constructed, with the earthwork for the entire four-lane footprint being laid down.

An overcrossing at Nicolaus Road and undercrossing at Dowd Road will be built during the initial construction. Due to the rising costs of Right of way, purchase for the ultimate four-lane freeway project will be acquired during the first phase.

Because of the passage of time there will likely be a need to periodically reconfirm the project's environmental approvals before the ultimate project is constructed. The future interchanges at Nelson Lane, Wise Road and Riosa Road and the addition of lanes will have additional environmental documentation that may tier off this Environmental Document.

Discussion of interchanges and intersections

Industrial Avenue

An interchange at Industrial Avenue is required due to the heavy volumes of traffic that are expected in that area. This interchange will be constructed in the initial phase and would serve the residents of the Twelve Bridges and Lincoln Crossing subdivisions, as well as those travelers coming from Sacramento and Roseville who are making inter-regional trips.

Nelson Lane

The first phase of the proposed project includes construction of an at-grade intersection at Nelson Lane. As the need arises and funding allows, an interchange would be constructed. This interchange would serve the industrial type traffic using the airport and industrial parks surrounding the airport. An intersection and later, an interchange, at Nelson allows for access to the airport. The Lincoln Regional Airport serves an important transportation need for the planned industrial area adjacent to the airport. The Lincoln Airport Authority has proposed major improvements to the airport over the next 20 years. Local access to the airport is critical to the success of both the airport and the adjacent industrial type businesses.

Wise Road

The DEIR/S describes an at-grade intersection at Wise Road in the initial phase of the project and an interchange as the ultimate plan for Wise Road. Access is needed to detour trucks that would otherwise haul aggregate and other material through the town of Lincoln. Additional conservation easements will be acquired in the Coon Creek watershed and floodplain area to address EPA concerns regarding resources within the four-mile circle of Wise Road. The acquisition strategy will be determined in coordination with Placer Legacy and EPA.

Riosa Road

At the north end of the Bypass project, Riosa Road would have an at-grade intersection for the first phase of the project and later an interchange as traffic volumes warrant and funding becomes available. Access to the freeway at this point is essential to serve the community of Sheridan.

Factors influencing land use changes

Transportation investments result in major land use changes only in the presence of other factors, such as supportive land use policies, local development incentives, availability of developable land and a good investment climate. Factors influencing the likelihood and rate of development near rural interchanges include distances to major urban or regional centers, traffic volumes on intersecting roads, presence of frontage roads and availability of water and sewer and other infrastructure. Following is a discussion of land use policies, plans for infrastructure improvements, availability of land and the desirability of the area that would influence land use in the Lincoln area.

Land Use Policies

City of Lincoln land use policies

Figure 1 shows the City and County General Plan designations, including changes currently being considered for the Lincoln General Plan update. As stated in their General Plan, it is the City of Lincoln's policy to ensure that agriculture will continue to be a significant land use within the city's sphere of influence.

Within the project area, the primary zoning designations are Residential, through the new subdivisions Lincoln Crossing and Three D, and Agriculture from Moore Road to the edge of

the City of Lincolns' Sphere of Influence limits. There are a total of 89,139 acres within the City's current sphere of influence. Of the acreage within the sphere, there is approximately 5,114 acres of land designated and zoned as agricultural. The percentage of agricultural land that could be impacted by policies and plans within the city represent 5.74% of the total acreage within the sphere of the city. Hence, the majority of land is designated as urban and zoned as such, further development will probably convert some of the agricultural and timberland to urban uses.

The City is currently working on updating their General Plan and expects to have it completed later this year. Preliminary consideration has been given to annexing an area that would include the airport and the bypass. (See Figure 1) This area would extend slightly west of the bypass. The area considered for annexation could be developed in coordination with Lincoln's plans to expand their airport. It is possible that land use in this area could be re-zoned for mixed-use development and industrial. However, CEQA reviews and approval of the General Plan annexation would be required in order for this to occur.

Placer County land use policies

The portions of the project study limits that are outside Lincoln's sphere of influence are under Placer County's jurisdiction. The area affected by the proposed project is zoned for Agriculture in Placer County's General Plan, most with an 80-acre minimum parcel size with some smaller areas having a 20-acre minimum parcel size. (See Figure 1) Placer County has a policy to designate adequate agricultural land and promote development of agricultural uses to support the continued viability of Placer County's agricultural economy.

Sacramento Area Council of Governments (SACOG) and the Placer County Transportation Planning Authority (PCTPA) projections for the area

Lincoln is included in SACOG's list of fastest growing communities that also includes Rancho Cordova, Vineyard, Cosumnes and West Sacramento. The City of Lincoln is projected to have a population of 62,414 in 2025, up from 16,154 in the year 2000 (SACOG Metropolitan Transportation Plan). The fastest growing housing markets in the Sacramento metro region are in the communities of Laguna, Rancho Cordova, Vineyard, Lincoln and Roseville. Per SACOG, there are currently 6,541 housing units in Lincoln with 24,964 projected for the year 2025. However, projections show that the fastest growing employment markets will be in Roseville, Downtown Sacramento, West Sacramento, Rancho Cordova and Laguna. It's anticipated that 40 percent of job growth between 2000 and 2025 will come in office and manufacturing jobs in these suburban areas. These suburban job centers will increase the demand upon transportation infrastructure and will place additional pressure on interregional travel options.

SACOG's projections are based upon the Metropolitan Transit Plan (MTP) for the region. The MTP includes transportation infrastructure improvements that are priorities in the region. The modeling includes these infrastructure improvements and other variables to determine what assumptions should be made regarding population, housing and job growth projections for the region.

Growth and traffic congestion are two areas of particular concern to SACOG. The economy in the region is undergoing a major change due to the influx of non-government jobs from surrounding areas that have a higher cost of living. In addition, the overall population in the region is expected to grow by almost a million people (approximately 50%) by 2025. Most development is occurring beyond the existing urban development, placing additional pressure on infrastructure.

SACOG has designated several regional projects as a priority in order to adequately serve the growth planned in the region. The Lincoln Bypass is listed as one of those priority projects. Other priority projects include upgrades to the Capitol Corridor Intercity Rail and a new Regional Rail Service, other highway improvements, Light Rail extensions, the Placer Parkway and Regional Bicycle and Pedestrian Improvements.

SACOG is currently undertaking a transportation/land use study examining the growth that is expected to occur in the region up to the year 2050 and the impacts associated with that growth. SACOG is developing this study to provide information on land use decisions and what impacts those decisions will have on quality of life issues, mobility and the environment in the long term. SACOG hopes this study will bring the local jurisdictions together to incorporate changes in land use.

Effect of infrastructure such as sewer and water on land use changes

Current and future plans for infrastructure improvement in Placer County

There are no plans for infrastructure improvements in the area west of the bypass due to the current agricultural character of the area. The town of Sheridan is the only urban area in the unincorporated portion of the County and it is currently under a moratorium on growth until new sewer facilities are constructed. Currently, there are no plans for expansion of the sewer or water systems for Sheridan.

Current and future plans for infrastructure improvement in the City of Lincoln

The City plans to build a new wastewater treatment and reclamation facility located off of Moore and Fiddyment Road. The old wastewater treatment facility, currently located west of the city of Lincoln near Nicolaus Road and Nelson Lane, will be dismantled. The new facility will serve customers currently using the old wastewater treatment plant as well as the residents of the new subdivisions.

Some minor infrastructure improvements include well sites for back-up water and peak demand purposes.

Many of the local road improvements are being planned to accommodate the expected growth under the new general plan. Local officials have indicated that many local roads are currently being heavily used to bypass the congestion in the city. These transportation projects may or may not have a portion funded by State and Federal monies. Some of these projects may be funded in whole or part by Local agency or developer funds. In the City of Lincoln, the following local road improvements are planned and/or are in various stages of construction (See Figure 5):

- 2003 – Aviation Blvd.: Construct new two- to four-lane road from Nicolaus Rd. to Wise Rd.
- 2003 – Lincoln Parkway: Construct two-lane road including Union Pacific Railroad overcrossing, from SR 65 to Westlake Blvd.
- 2003 – Lincoln Parkway: Construct new four-lane road from Moore Rd. to Westlake Blvd.
- 2005 to 2010 – Lincoln Parkway: Various widening projects at different locations.
- 2005 – Gladding Parkway: Construct a new four-lane roadway from SR 65 to East Ave.
- 2005 – Joiner Parkway: Widen from two to four lanes, from First Street to Moore Rd. and construct new bridge.
- 2006 – Ingram Parkway: Construct a new four-lane parkway from Sun City Blvd. to Ferrari Ranch Rd.
- 2010 – Aviation Blvd.: Widen from two to four lane, from Venture to Airpark Drive.
- 2010 – Industrial Avenue: Widen from two to four lanes from Route 65 to Athens Blvd.
- 2010 – Lakeside Drive: Widen from two to four lanes, from Nicolaus Rd. to Airpark Drive.
- 2015 – G Street: Widen from two to four lanes with left-turn pockets, from Westlake Blvd. to Industrial Avenue

Availability of Developable Land

Currently much of the land in the project area and outside the city of Lincoln Sphere of Influence is zoned for agriculture. However, development companies, not farmers or ranchers own some land near proposed intersections. Figure 5 shows the land ownership in the vicinity of the Lincoln Bypass. Most of the investment properties are within the area that is projected for annexation into the City of Lincoln and as such would be more likely to develop if zoning was changed and the Williamson Act contracts were not renewed. Currently, much of this land is still under Williamson Act contracts (Figure 2).

The area under consideration for annexation to Lincoln is shown in Figure 1. Zoning west of the Bypass is expected to remain agriculture within the planning horizon of the Placer County General Plan (2004-2014). The presence of the Bypass may place development pressure on the areas surrounding the intersections and interchanges if zoning changes occur. The area between the city of Lincoln and the proposed bypass is expected to be developed within the general plan horizon and is zoned accordingly.

Housing and Employment Trends in the Lincoln Area

The City of Lincoln plans to increase its housing stock to accommodate the 13% anticipated average annual growth over the next 10 years (until 2012). Between 2010 and 2020 Lincoln's forecasted annual growth rate is expected to decline. However, rapid growth during

the period of 1999-2002 increased Lincoln's population from approximately 8,700 residents to 17,700[1]. This rapid growth translates into a three-year average annual growth rate of 26%.

The rapid population growth in Lincoln has corresponded to the growth in housing. Lincoln's housing stock increased from 3,359 to 6,766 between 1999 and 2002. (City of Lincoln's General Plan Background Report, December 9, 2002). The Sun City Lincoln Hills Development was a significant contributor to this population and housing surge, adding approximately 2,800 homes with an additional 3,800 homes yet to be built.

According to the City these growth projections are not based upon transportation improvements. The City analyzes the growth potential and then reviews the infrastructure needed to accommodate this growth. This is done for the infrastructure that the City controls such as the infrastructure improvements mentioned on page 9 of this analysis.

The Lincoln bypass has been included in the traffic modeling assumptions for both the City of Lincoln and SACOG because it is included in the MTP. The MTP is developed to help establish priorities for the region and to direct infrastructure improvements to accommodate the growth.

Housing in Roseville is expected to increase from 33,568 in 2000 to 49,674 in 2025. Employment in Roseville area is expected to grow from 59,591 to 112,476 in 2000 and in Lincoln from 4,612 in 2000 to 17,463 in 2025 (SACOG Metropolitan Transportation Plan and Lincoln's General Plan Background Report, December 9, 2002). Since the 1990's, Lincoln's employment has grown by approximately 600 jobs, 300 of which were in the manufacturing sector. Much of this growth can be attributed to leased space at the business park located near the Lincoln Regional Airport. Retail employment is projected to increase during this period to serve the increased population expected in the area.

Desirability of the area

According to the SACOG's Metropolitan Transportation Plan, the high cost of housing in the Bay Area and job opportunities in west Placer County have made the Sacramento Valley a desirable area. Job centers are projected to grow in Roseville and Rocklin that will ultimately have an impact upon the City of Lincoln due to its proximity.

Increased accessibility

The Lincoln Bypass will improve access to areas surrounding Nelson Lane. Eventually, as the need and funding allow, an interchange is proposed for Nelson Lane. Nelson Lane is currently a non-engineered low volume county road. It provides access to the airport and the industrial area adjacent to the airport. Nelson Lane will be upgraded when the Lincoln Bypass is built. The area that Nelson Lane serves is already zoned Industrial, and its zoning is not likely to change when the road is improved.

[1] This number varies depending on the source: Dept. of Finance, June 2002 estimates 17,713 residents, SACOG 2002 estimates 16,154, Lincoln's General Plan Background Report, December 2002 estimates 17,700.

Land availability and prices

Population growth and labor market growth in Sacramento, Rocklin and Roseville has increased housing and land prices throughout the region. With this growth, the demand for housing and land for development has escalated. Although the cost of land is increasing in the region, it is still relatively affordable and hence has development pressure due to its proximity to regional job centers.

The following table shows the average price of home sales for Lincoln and the surrounding areas (MetroLink, April 2003 & Sacramento Business Journal).

Table 1 Average Home Sales

Lincoln	Rocklin	Roseville	Sacramento	Bay Area	Auburn
$292,737	$314,534	$304,685	$361,945	$443,000	$385,125

Location attractiveness

Lincoln is attractive to potential homebuyers for a number of reasons. The proximity to job centers in Roseville, Rocklin, Auburn and Sacramento is certainly one reason people move to Lincoln. Many residents of Lincoln have indicated that they moved to the area for its rural qualities and small town feel.

Land availability and the lower home prices are another draw to this area, as new homebuyers get priced out of the surrounding cities.

Description of planned developments

Many of the Specific Plans for the subdivisions include "livable community" elements such as bike/pedestrian mobility. Other elements being incorporated are a mix of densities and types of residential units integrated with commercial, light industrial, business/professional, employment, recreation, habitat preserves, open spaces and public facilities such as schools, church sites, etc. Mixing up land uses can cut down or even eliminate the use of the automobile for everyday errands and commuting to work travel.

In addition, the City of Lincoln has prepared a Bikeway Master Plan, adopted in 2001. The plan proposes about 53 miles of bikeway facilities (8.67 miles of Class I bike paths, 39.60 miles of Class II bike lanes and 4.65 miles of Class III bike routes). The development of the proposed facilities will provide for bikeways throughout the Lincoln City limits, and includes regional connections to Rocklin, Roseville and Auburn.

Summary of Factors influencing land use changes

The effect of transportation improvements on growth is not easy to measure since there are many factors that influence growth. There are no universally accepted analytical methods to provide guidance on measuring impacts associated with transportation projects. In assessing the growth inducement impacts for this project the analysis includes information on land use, general plans, city and county policies on growth, current zoning and possible changes that can be reasonably foreseen to impact growth. We have avoided speculating on future land use and instead tried to make reasonable assumptions based upon known conditions in the project area.

Studies have shown that development will likely occur when new roads allow access to land previously inaccessible and the area is prime for development. However, whether highways facilitate such growth or whether they are merely serving the growth that would have otherwise occurred has never been agreed upon.

The City of Lincoln has been one of the fastest growing areas in the State and is accommodating this growth with their plans and policies. This growth has occurred in spite of the transportation infrastructure not keeping pace with the need. Factors that have contributed to the growth occurring in this area are lower housing prices, proximity to job centers, the rural quality of the town and a positive economic climate. Due to all these other factors being in place, it can be reasonably argued that growth occurring now and expected in the near future would take place regardless of the Lincoln Bypass.

Potential Indirect / Secondary Effects

Indirect effects are described in the CEQ regulations as those effects "which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems." (40 CFR §1508.8(b))

The CEQ regulations definition poses difficulty in determining the potential indirect impacts attributable to this project. It is Caltrans professional opinion that the exact extent of potential indirect impacts cannot be determined.

Each project should be viewed in light of the existing conditions that may influence the potential impacts. In this analysis, the conditions surrounding the City of Lincoln's growth have been examined. The extent of indirect impacts caused by the bypass alone cannot be fully determined due to the City of Lincoln's policies regarding land use, current growth, and projected growth and land use policies.

The following potential indirect impact figures are presented to provide information on resources in the area that could be impacted from **both** the bypass and Lincoln's land use policies. The four-mile circle does not constitute the extent of indirect impacts from the bypass since we cannot precisely extract those indirect impacts directly linked to the development that is planned or already occurring from the potential indirect impacts from the bypass. There are no proven methodologies that provide measurements regarding indirect impacts associated with development patterns and those that are attributed to transportation infrastructure.

Given the limitations of the indirect analysis, it can be stated that growth is reasonably likely to occur along the new highway corridor, and particularly at the proposed new interchanges. However, those areas in question are currently zoned for agriculture and would require a change in zoning for growth to occur there. In addition, much of the area in question

is being considered for annexation due to the projected growth in both the industrial area around the airport and entire city. Given the pace of change in Placer County and the City of Lincoln, any incremental responsibility Caltrans might have for the growth cannot be quantified.

The purpose of this project is to relieve congestion in the City of Lincoln and provide for a regional traffic solution to accommodate projected traffic volumes through the year 2025. Additional growth, beyond what is already planned and accounted for in the City and County General Plans, is not an expected consequence of this project. The Lincoln Bypass may increase the pace of growth and the location of growth, but not the likelihood for growth. The Lincoln Bypass is not funded by developer funds nor is it a requirement by the city for the development that has occurred heretofore.

There are three areas that could be subject to additional growth somewhat dependent upon the freeway, the beginning of the project at Industrial Avenue, the access at Nelson Lane, Wise Road and the end of the project at Riosa Road.

At Industrial Avenue, much of the area is zoned for residential development, so no further impacts to natural resources due to the freeway are expected at this location.

Nelson Lane is zoned for Industrial type land use to the north, and agricultural to the south. It can be expected that the agricultural area would be under increased pressure to develop when access is provided and Nelson Lane is improved. Currently, there are no investment type owners adjacent to the proposed interchange, however, Warm Springs Investment owns 997 acres to the west of this area, from Moore Rd. to Nicolaus Rd. In addition, these parcels are within the proposed annexation area proposed by the City of Lincoln. It could be expected that these areas would be eventually rezoned Industrial .

Wise Road is located within close proximity to both the airport and Teichert Aggregate facility and is currently zoned as agricultural with a 10-80 acre minimum. The area surrounding this intersection will be under pressure to develop as the airport expands and if annexation occurs. However, there are current restoration and conservation activities in this area. Placer Legacy, in coordination with some land owners, have restored areas or have plans to restore areas within the Coon Creek watershed and floodplain area (Figure 9).

In light of the potential growth inducement impacts associated with access at Wise Road Caltrans has worked in coordination with Placer Legacy and EPA to develop an avoidance strategy that will help conserve the Coon Creek corridor by including acquisition of conservation parcels. These parcels will attempt to keep the Coon Creek corridor intact and avoid potential indirect affects to aquatic resources.

Currently, Riosa Road is zoned rural residential to the east and agricultural to the west. It is within the Sphere of Influence of Sheridan. Sheridan currently has a moratorium on development until they update their General Plan. Although there are no immediate plans to develop this area, with a zoning change, development could take place here.

Resources within a four-mile circle around proposed intersections and interchanges

Agriculture

At this time, the area west of the bypass is zoned as agricultural. However, approximately 3,302 acres to the west of the airport, currently zoned as agriculture, are proposed for annexation under the new City of Lincoln General Plan. Figure 2 shows farmlands within a four-mile circle around the proposed interchanges and at-grade intersections.

Information contained in the GIS databases were provided by Placer County. Placer County used the California Department of Conservation Farmland Monitoring and Mapping Program to locate and designate farmland within Placer County and the City.

The following table summarizes farmlands within the four-mile circles broken down into the following categories: Urban or built-up land, Grazing land, Farmland of Local Importance, Prime Farmland, Farmland of Statewide Importance, Unique farmland and Other[2]. Also shown are those parcels within the radius under the Williamson Act contract and those that will not renew their contracts.

Table 2 Farmland in Study Area

Type of Farmland	Farmland within Four-mile Areas	% Of Total Four-mile Areas
Urban and Built-up Land	2,451 acres	9.2%
Grazing Land	3,356 acres	12.6%
Farmland of Local Importance	12,534 acres	46.9%
Prime farmland	3,398 acres	12.7%
Farmland of Statewide Importance	833 acres	3.1%
Unique Farmland	2,706 acres	10.1%
Other	1,441 acres	5.4%
Total Farmland and Other	26,719 acres	100.0%
Williamson Act Parcels	6,638 parcels	86.4%
Non-Renewed Williamson Act	1,042 parcels	13.6%
Total Parcels in Four-mile Areaa	7,680 parcels	100.0%

Locally important farmland represents the majority of farmland located within the project vicinity and is predominant in all four-mile circles around the interchanges and intersections. Prime farmlands occur predominately in the south end of the bypass between Nelson Lane and Nicolaus Road and also occur in the area proposed for annexation..

Williamson Act

The California Land Conservation Act of 1965, commonly referred to as the Williamson Act, enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use.

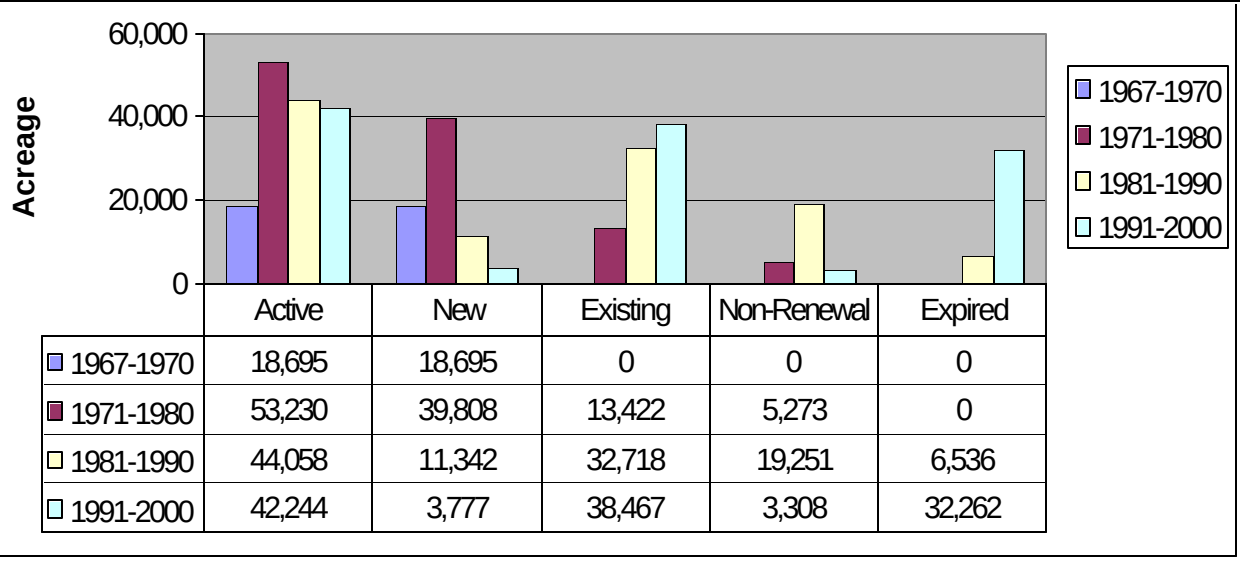
[2] Land that does not meet the criteria of any other category. Typical uses include low-density rural development, heavily forested land, and mined land or government land with restrictions on use.

The Williamson Act provides for lowered property taxes for lands maintained in agricultural and certain open space uses. The landowner enters into a contract with the county or city to restrict land uses to those compatible with agriculture, wildlife habitat, scenic corridors, recreational use, or open space. In return, the local authorities calculate the property tax assessment based on the actual use of the land instead of its potential value assuming full commercial development. To be eligible, the land must be designated by a city or county as agricultural preserve, scenic highway corridor, or wildlife habitat area; or it must be actively used for the three years immediately preceding the beginning of the contract as a saltpond, managed wetland, or recreational or open space area.

Each year the contract is automatically renewed for a new ten-year period, unless the landowner notifies the local government of a desire not to renew. If the landowner does not renew, the land use restrictions remain in effect until the remaining nine years of the contract have passed. There are also provisions for canceling the contract if cancellation is consistent with the purposes of the Williamson Act or otherwise found to be in the public interest.

The Williamson Act Parcels are displayed in Figure 2. Due to the amount of development in the area, fewer landowners are renewing their contracts. The number of parcels that have not renewed has decreased in the ten-year period between 1990 and 2000 (Western Placer Agricultural Study, January 2002). Much of the non-renewed contracts are for pastureland or "native" vegetation. Efforts are underway with Placer Legacy, Placer Land Trust and other concerned citizens to ensure that land is preserved for agricultural uses.

Table 3 Williamson Act Trends



	Active	New	Existing	Non-Renewal	Expired
1967-1970	18,695	18,695	0	0	0
1971-1980	53,230	39,808	13,422	5,273	0
1981-1990	44,058	11,342	32,718	19,251	6,536
1991-2000	42,244	3,777	38,467	3,308	32,262

There are 1,042 Williamson Act parcels within the four-mile circle around the interchanges and intersections, which according to Placer County officials will not be renewed, most occurring around the Wise Road intersection. Development around these areas depends upon land ownership and the desire for landowners to remain under contract of the Williamson Act. The proposed flood easement would prevent a portion of the non-renewed parcels from

being developed and the eventual grade separation at Wise Rd. with no access would also curtail some land speculation.

The owners of parcels located east of the existing SR 65 include Teichert and Coon Creek Cattle Company. In the City of Lincoln between the existing SR 65 and the proposed bypass JBL investment and Sutter Bypass Properties, Inc own some of the non-renewed parcels.

The parcels located within the proposed Lincoln annexation area include P & F Investment Company, located between Nicolaus and Wise Road. The parcels owned by P & F Investment Company are still under Williamson Act contracts but these contracts may be expired within 10 years. Some of the remaining parcel ownership within the four-mile circles includes John Hancock Mutual Life Ins. Co., Amaryllis Investments Inc., JBL Investments Inc., Sherwens Investments LLC, Warm Springs Investments LTD, the Canevari property under a Wetland Conservation Easement and Siller Bros. Inc. northwest of the bypass. Please refer to Figure 2 for more information on parcel ownership.

Investors adjacent to the bypass are more likely to develop lands if conditions within the City allow for such development. The majority of these investors are located within the City of Lincoln or are within the proposed future annexation of the City. The remaining investors are within close proximity to the bypass but are in areas currently zoned agricultural land and not within the City or the proposed annexation. Development could potentially occur as the City of Lincoln grows and if zoning is changed in the area.

Natural resources, aquatic resources

Riparian/Non-riparian habitat

Table 4 Riparian/Non-Riparian Woody Habitat

Type of woodland	Area within four-mile circles
Riparian Woody Habitat	188 acres
Non-Riparian Woody Habitat	389 acres
Total	577 acres

Most of the riparian woody habitat within the project area occurs in the four-mile circles surrounding Wise Road intersection and the Nelson Lane intersection (See Figure 3). The non-riparian wooded area occurs within the City of Lincoln and is already developed.

These computations were completed using GIS files provided by Placer County and based upon information obtained from the U.S. Environmental Protection Agency, California Department of Fish and Game and the United States Fish and Wildlife Service.

Vernal Pools

Table 5 Vernal Pools

Type of Vernal Pool	Area within Four-mile circles
Vernal pools/disked or disturbed	268 acres
Vernal pool-swale complex/disked or disturbed	3,044 acres
Vernal pools/unaltered landscape	39 acres
Vernal pool-swale complex/unaltered landscape	594 acres
Permanently flooded palustrine emergent	93 acres
Total	4,038 acres

The majority of vernal pool/vernal swale complexes that are disked or disturbed are located within the Wise Road area, west of the bypass along the area proposed for future annexation. The second largest portion of disked or disturbed vernal pools is located at the Nelson Lane intersection. The remaining vernal pool/vernal swale complexes that are disked or disturbed occur randomly throughout the remaining four-mile circles.

The categories of aquatic resources that lie within the four-mile circle at intersection and interchange locations are: 1,480 acres of vernal pools, 22 acres of open waters and 15 acres of permanently flooded palustrine emergents within the Wise Road intersection; 1,011 acres of vernal pools, 22 acres of open waters and 18 acres of permanently flooded palustrine emergents within the Industrial Boulevard interchange; 998 acres of vernal pools, 115 acres of open water, and 40 acres of permanently flooded palustrine emergents within the Nelson Lane interchange; 970 acres of vernal pools, 44 acres of open water, and 35 acres of permanently palustrine emergents within the Riosa Road interchange.

Although there are more acres of vernal pools within the Wise Road four-mile circle that could potentially be indirectly impacted by the bypass and growth of the City of Lincoln, the acquisition of conservation easements within the Coon Creek and Wise Road intersection area would prohibit the majority of potential indirect impacts from occurring. These easements would become part of the project description and acquisition would occur in coordination with Placer Legacy, EPA, ACOE, the City of Lincoln, and Placer County.

The area that has the largest intact disked or disturbed vernal pool/vernal swale habitat is located west of the proposed annexation area and will remain in the county and zoned for agriculture uses. A portion of that area is owned by P & F Investment Company.

The most common type of vernal pool habitat within the four-mile circles is vernal pool/vernal swales that are disked or disturbed. The second most common type of vernal pool within the four-mile circle study area is the vernal pool/vernal swale complex unaltered pools. This type of vernal pool is predominately located along the existing SR 65. Please refer to Figure 4 for exact locations.

Cumulative Impacts

The Council on Environmental Quality (CEQ) guidance defines cumulative effects as "the impact on the environment which results from the incremental impact of the action when added to other past, present and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions" (40 CFR § 1508.7). Environmental cumulative effects occur when the environment does not have enough time to recover to its original condition before another outside action takes place to affect the environment.

Cumulative effects analysis necessarily involves uncertainties and assumptions, but useful information can be presented now to facilitate better decision-making. To the extent possible, information from past, present and reasonably foreseeable projects was obtained to help evaluate the cumulative impacts in the area. In addition, quantitative information was obtained where possible.

The resources that will be discussed for the cumulative impact analysis include agricultural land, wildlife habitat, and wetlands. The term ***Direct*** used in the tables represents the direct impacts associated with the bypass; the term ***Cumulative*** includes direct impacts and impacts associated with development in the project area where the information could be obtained. This cumulative analysis does not include indirect impacts due to the inability to directly link indirect impacts to the bypass and to determine the amount of impact caused by the bypass alone.

When the Bypass is considered with other reasonably foreseeable projects, cumulative impacts to some resources will be more severe than impacts to those resources caused by the highway project alone. The EIR for the Placer County General Plan Update concluded that impacts in eight major areas; land use, traffic congestion, cultural resources, loss of farmland, loss of agricultural production, habitat conversion and habitat quality reduction, increase in air pollutant emissions and traffic noise, taken as a whole, would result in potentially significant adverse impacts to land conversion and habitat quality reduction, and cause an increase in air pollutant emissions and traffic noise.

To get a clearer concept of the activities going on in the study area, the following tables display transportation projects that are planned or are currently taking place.

Transportation Projects in Study Area

A number of highway improvement projects are proposed within the project area and address existing congestion and safety concerns while providing for inter-regional transportation needs. These improvements may facilitate planned development in some areas, but are not expected to accelerate conversion of agricultural and other open space lands to developed uses except where this conversion is already occurring and planned for (e.g., Lincoln). Rather, the proposed road improvements are needed to keep pace with local and regional development conditions and prevent further deterioration of service levels and safety.

Table 6 Transportation Projects in Area

	County	Year Constructed
SR 65 Improvement from Roseville to Industrial Ave.	Placer	1997
Blue Oaks Interchange	Placer	1998
SR 193 improvements	Placer	1999
Future Improvements to the State Highway System		**Year Proposed**
Wheatland Bypass	Sutter/Yuba	2006
SR 70, McGowen to Striplin widening	Sutter/Yuba	2005
SR 99 Improvements	Sutter	2003
Third River Crossing	Yuba	2004
Marysville Bypass	Yuba	2005
Placer Parkway *Not part of the State Highway System	Placer	Not determined

The table represents State and Local priority projects that address growth, congestion and safety in the region. Senate Bill (SB) 45 redistributed STIP monies so that the Regional Transportation Planning Agencies (RTPA) and Metropolitan Planning Organizations (MPO) get 75% for regional use and the Department gets 25% for inter-regional use. In addition, SB 45 dictates how the Department prioritizes its funds on the inter-regional transportation system by amending Section 167 of the Streets & Highways Code to read:

167. (a) Funds in the State Highway Account in the State Transportation Fund shall be programmed, budgeted subject to Section 163, and expended to maximize the use of Federal funds and shall be based on the following sequence of priorities:

- Operation, maintenance and rehabilitation of the state highway system.
- Safety improvements where physical changes, other than adding additional lanes, would reduce fatalities and the number and severity of injuries.
- Transportation capital improvements that expand capacity or reduce congestion, or do both.
- Environmental enhancement and mitigation programs.

As a result of SB 45, the authority over how the majority of transportation dollars are spent is in the control of the regional planning agencies. It is the Department's mission to respond to a clearly demonstrated need, safety and highway maintenance or congestion relief, in that order. This legislation has made it clear that the Department's responsibility is to the inter-regional transportation system and the locals will maintain responsibility for local transportation systems. It should be also noted that the responsibility of determining land use lies in local governments hands.

Development in project area

The following table shows specific plans in the study area. These Specific Plans were used because they encompass many development activities within them. For example, Twelve Bridges Specific Plan includes Del Webb, East Ridge and East Lake plans.

Table 7 Summary of Lincolns' Specific Plan

Specific Plan	Total Acres	Residential Units	Population	Commercial acres	Industrial/ Business Park acres	Institutional acres[1]	Open Space acres
Twelve Bridges	5,985 ac	11,231	20,215	130 ac	71 ac	110 ac	2,515 ac
Lincoln Crossing	1,069 ac	2,958	8,459	43.2 ac	--	--	2,331 ac
Three D	70 ac	332	949	--	--	13 ac	16 ac
Laehr Estates	10 ac	53	151	--	--	--	--
Joiner Ranch	303 ac	1,756	5,022	28.1 ac	44.0 ac	13.0 ac	13.0 ac
Foskett Ranch	291 ac	501	1,432	--	13.1 ac	58.3 ac	123 ac
Air Center	640 ac	1,809	5,173	9.2 ac	295 ac	91 ac	19 ac
Lincoln Gardens	16 ac	64	183	--	--	--	--
Sterling Point	76 ac	--	--	56 ac	--	--	14 ac
Total	**8,460 ac**	**18,704 units**	**41,584 people**	**266 ac**	**423 ac**	**272 ac**	**5,031 ac**

Note: Population was determined using a population per household multiplier of 1.8 for Del Webb and 2.86 for all other projects.
[1] Acreage that includes public or quasi-public facilities
Source: General Plan Background Report 12/9/02

Habitat Conversion in Placer County

The Placer County General Plan (Placer County, 1994) identifies the predictable effects of planned growth within the county. Development under the Land Use Element described in the General Plan could result in a population increase of 45,000 over the 1990 baseline population. Most of this increase takes place in southern Placer County. The following table illustrates the conversion of natural habitat to urban development for the entire county based on the predicted 2010 scenario.

Table 8 Habitat Conversions for Placer County (2010 Scenario)

	Approximate extent of intact vegetation		Habitat Conversion		Habitat conversion or reduced habitat value		Limited habitat impacts	
Vegetation Communities ▼	Vegetation communities in unincorporated areas (1991)		Planned urban development in unincorporated areas		Planned urban, suburban and rural residential development in unincorporated areas		Existing and planned recreational, agricultural and forestry land uses in unincorporated areas	
Urban/ agriculture/ rangeland	*152,960 ac*	100%	*7,200 ac*	4.7%	*42,360 ac*	27.7%	*103,400 ac*	67.6%
Grassland	*29,000 ac*	100%	*3000 ac*	10.3%	*2,000 ac*	6.9%	*24,000 ac*	82.8%
Oak woodland	*29,000 ac*	100%	0	0.0%	*4,000 ac*	13.8%	*25,000 ac*	86.2%
Conifer forest	*462,000 ac*	100%	0	0.0%	*47,000 ac*	10.2%	*415,000 ac*	89.8%
Hardwood forest	*10,300 ac*	100%	0	0.0%	*7,000 ac*	6.8%	*96,000 ac*	93.2%
Chaparral/shrub	*56,000 ac*	100%	0	0.0%	*3,000 ac*	5.4%	*53,000 ac*	94.6%

Lincoln Bypass Draft Environmental Impact Statement/Report, 2001.

Preservation as a condition of development

Subsequent to the preparation of the City of Lincoln General Plan in 1988, new development has occurred consistent with General Plan designations. These projects generally include open space dedications to preserve areas of vernal pools, riparian corridors or other high quality resources and compensatory mitigation measures to offset unavoidable impacts to wetlands. The Lincoln General Plan recognizes Auburn and Markham Ravines as important open space resources, and both corridors are designated for preservation.

Farmland Cumulative Impacts

Sacramento Valley has been experiencing substantial urban development that has resulted in loss of farmland. The State of California has experienced a 13.8 percent increase in population from 1990 to 2000 and the ten counties in the Sacramento Valley have grown by 18.4 percent. Between 1992 and 1998, the California Department of Conservation Trust estimates that the valley experienced a loss of over 41,000 acres of farmland.

Growth within the project area is expected to continue to be concentrated primarily around existing developed communities. However, the farming population is aging, and for economic reasons, farmland is increasingly sold to land developers or speculators rather than kept in agricultural production by younger generations.

Urban growth can increase the rate at which Placer County agricultural lands are converted to non-agricultural uses, especially in western Placer, where large parcel sizes and proximity to Sacramento has made the area a prime target for new residential development. Land speculation in this area drive up land values and may reduce the economic viability of agricultural production. (Placer Legacy Open Space and Agricultural Conservation Program, May 15, 2000)

Due to the growth pressures and development that has been occurring, preservation of agricultural lands is one of the primary planning goals of the County and to some extent, the City of Lincoln. It appears that, at least for the foreseeable future, agricultural uses will continue to dominate. However, loss of farmland continues as housing tracts replace small farms. Table A, attached to this document, shows Placer County's land use conversion from 1998 to 2000. Total Prime farmland converted to other uses is 696 acres and there have been 8,064 acres of total farmland of local importance converted to other uses.

The Placer County General Plan EIR identified the cumulative direct conversion of farmlands in Placer County as significant and unavoidable because the build out under the General Plan land use diagram would result in the direct conversion of 6,340 acres of farmland in Placer County, including 840 acres of prime farmland, by the year 2010.

Information on impacts to agricultural lands from major development projects in the study area was obtained from project environmental documents. Not all the environmental documents were available, and some did not describe the agricultural impacts, so the following information is an estimate. The total farmland affected by all the projects in the area total approximately 1,700 acres. Approximately 42.2 percent of the study area for the bypass is

classified as agricultural land. The total acreage identified in the revised alternative analysis prepared by LSA for Caltrans determined that 234.1 acres within the study area devoted to agricultural uses.

The farmland area within the four-mile circles is 26,719 acres. This figure includes 3,398 acres of prime farmland acres, 833 acres of statewide importance, 2,706 acres of unique farmland, 12,534 acres of local importance and 1,441 acres of other land that includes low-density rural development (See Figure 2)

Table 9 Agriculture Total Estimated Impacts

Direct	234 acres
Impacts from other projects within area	1,700 acres
Cumulative	1,934 acres

Riparian Woody/Non-Riparian Woody Habitat Cumulative Impacts

According to estimates there is only five to six percent of historic riparian habitat intact in Placer County, much of it lost to urbanization and other factors. Information on riparian habitat impacts from major development projects in the study area was obtained from project environmental documents. Not all the environmental documents were available, and some did not describe the riparian habitat impacts, so the following information is an estimate. According to the project environmental documents that were obtained, impacts to this resource total approximately 14.2 acres. However, this amount is low due since the information was simply not available.

The direct impacts associated with the bypass amount to a total of 11 acres and the area within the four-mile circle that could potentially be impacted by both the bypass and other development activities include 188 acres of riparian woody and 389 acres of non-riparian acres. (See Figure 3)

Table 10 Riparian/Non-Riparian Woodlands Total Estimated Impacts

Direct	11.0 Acres
Impacts from other projects in area	14.2 Acres
Cumulative	25.2

Wetland/Vernal Pool Cumulative Impacts

Although there is agreement that vernal pool loss is occurring due to urbanization and other factors, the exact amount of this loss has been debated. Vernal pool habitat loss in the Central Valley was estimated in the 1970's to be around 67 to 88 percent (Holland 1978, and Robert Holland, consultant, in litt. 1992). According to the Federal Register (March 26, 1997) on EPA's website these figures have been disputed and the estimates changed to 50 percent (59 FR 48139; R. Holland, pers. comm. 1996).

For many years a baseline measurement was never obtained and vernal pool inventory was only done on a project-by-project basis. Mapping obtained from the Department of Fish

and Game and Placer County shows that the majority of vernal pools in the project area have been disturbed in some fashion, due in part to agricultural uses in the project area.

Specific Plan environmental documents obtained from projects listed in Table 7 total the impacts to vernal pools to 19.61 acres, 7.91 acres of seasonal marsh and 1.76 acres of open water are also impacted. One of the environmental documents did not break down the acreages but did calculate a total wetlands impact area to 36.1 acres. These projects include projects that are planned, in construction or have recently been built.

The direct impacts from the bypass total 5.5 acres of vernal pools and swales, and 13.6 acres of jurisdictional waters. A total of 4,038 additional acres that represent all wetland types in the project area are within the four-mile circles that could potentially be impacted by future development. (Figure 4).

Table 11 Vernal Pools/Wetland Estimated Cumulative Impacts

	Vernal Pools	Seasonal Marsh/ Swales	Open Water/ Jurisdictional Waters	Combination[1]	Total Impact
Direct	5.5 ac	--	13.6 ac		**19.1 ac**
Impacts from projects within area	19.61 ac	7.91 ac	1.76 ac	36.1 ac	**65.4 ac**
Cumulative	25.1 ac	7.91 ac	15.36 ac	36.1 ac	**84.5 ac**

[1]Represents combination of vernal pools, seasonal marsh/swales and open water.

Conservation Planning

Placer Legacy Habitat Conservation Plan for Placer County

Description

The concern over development pressure that will be occurring over the next 20 years and the possibility of losing county natural resources prompted the creation of Placer Legacy. Placer Legacy was established in 1998, using three working groups to provide input from a variety of stakeholders. These groups consisted of a Citizens Advisory Committee, an Interagency Working Group and a Scientific Working Group. Placer Legacy has identified county trends, resource conflicts and possible strategies to address growth pressures. Strategies currently being pursued are land acquisitions and easements, agency coordination, education and incentives. In November of 2002 Placer Legacy was actively negotiating purchases with property owners for approximately 1,300 acres of conservation easements west and north of the proposed Lincoln Bypass to limit growth-inducing impacts. That number has risen to 2,060 acres of land protected in the Sierra Nevada, Sierra Nevada foothills and Central Valley. In addition, the Placer Legacy is involved in the Miners Ravine Restoration project at the Miners Ravine Reserve site in Granite Bay, the Auburn Ravine/Coon Creek Ecosystem Restoration Plan and the American River Fuel Load Reduction Plan as well as engaging in ongoing coordination with the Agricultural Commissioner's Office on matters related to agricultural conservation.

Funding

Placer Legacy's funding comes from a variety of sources including grants, general funds, mitigation funds, donations, acquisition funds, resource agencies and other miscellaneous sources. Voters defeated a ¼ cent sales tax proposed to provide a secure source of funding for Placer Legacy. However, the County and Placer Legacy are initiating a public outreach program in order to promote the Placer Legacy in the community with the goal of re-introducing the measure to the voters.

Timeframe

Placer Legacy is working on Placer County's Habitat Conservation Plan (HCP) and a Natural Communities Conservation Plan (NCCP) is expected to be completed in 2004. This Plan will be implemented in phases. The first phase is to gather information on vernal pools/grasslands, valley riparian habitats and salmon habitat in the areas within Western Placer County. Phase two will be to collect that information for the Foothills and the East Side Sierra Nevada and the third phase will focus on the west and east Sierra Nevada. Once resources have been identified, the HCP/NCCP will be prepared with guidance from various stakeholders such as the scientific community, land development interests, the environmental community and agricultural interests. A scientific working group will continually provide advice and assistance to ensure that the program incorporates sound principles of conservation ecology. These plans will establish a conservation strategy to ensure that resources are protected from development. In addition, financial mechanisms will be analyzed to determine how to implement these plans. The City of Lincoln is a member of Placer Legacy and will be participating in programs that will provide for conservation of prime agricultural lands in addition to conservation easements within their jurisdiction.

Placer Legacy's activities may minimize some of the potential growth inducement effects being attributed to this project and the growth that is occurring in Lincoln. As a show of trust in the Placer Legacy process, Caltrans has engaged it in the process of meeting project mitigation requirements early by working in partnership to create Aitken's Ranch.

Other Preservation Measures

The Aitken Ranch Mitigation Site was established by a Wildlands Inc., a private habitat development company, to mitigate impacts to biological resources occurring as a result of land development in Placer County. The 317-acre property west of Lincoln, CA, features 21.16 acres of vernal pools/swales, 18 acres of riparian wetlands, 20 acres of valley oak woodlands, 177 acres of grasslands, 16.38 acres of emergent marshes/open water and 47.5 acres of riparian oak woodland. The mitigation site is bisected by the Auburn Ravine for more than a mile. Caltrans purchased these mitigation values in advance of environmental document approval to ensure these resources are protected. This mitigation site is now functioning will be self-sustaining before the project begins construction.

Other conservation/preservation efforts in the area include Auburn Ravine and Coon Creek restorations and other preservation activities. Since 1998, the county has been awarded

almost $4.5 million in state, federal and private-sector grants for land acquisition, habitat restoration and planning work. Much of this funding is directed at improvements to seven watersheds in western Placer County.

A private property owner just recently began working with California Conservation Fund to purchase and establish 330 acres of preserve outside of Lincoln located at North Dowd and Waltz roads in Sheridan, near Coon Creek and next to the 1,000 acre Lakeview Farms Hunting and Fishing Preserves. This project proposes to establish ponds and other habitat for wildlife creating a wetland project that would incorporate training of hunting dogs.

Although these preservation efforts do not reverse the impacts associated with development or the bypass in the project area, they do provide some action on the part of Placer County, the City of Lincoln and private citizens to protect and preserve the rural quality and natural resources of a town that is facing tremendous growth pressures.

Options Considered to Address Potential Indirect and Cumulative Impacts

Meetings were held with staff representing EPA, ACOE, FHWA, City of Lincoln, Placer County, PCTPA and Caltrans to discuss several concerns during the NEPA/404 process. Input received from EPA regarding the potential indirect and cumulative impacts has been instrumental in creating this analysis and the options that were considered.

Caltrans takes these concerns about potential affects to our vital aquatic resources very seriously, and has worked closely with these agencies to examine several options that might address those concerns. The following listing represents collaboration with many personnel and agency representatives to avoid impacts to aquatic resources in the Coon Creek watershed:

Option 1. Overcrossing at Wise Road with Initial Project Construction

Construction of an overcrossing at Wise Road in the initial project would preclude any local access at that point. Unfortunately, this option would also deny an important access that Placer County and the City of Lincoln have anticipated and planned to help detour large numbers of trucks hauling aggregate and other materials around the city rather than through downtown Lincoln. Trucks using the Wise Road/Bypass routing rather than existing SR65 through Lincoln will measurably improve the quality of life for Lincoln residents long tired of the pedestrian and traffic safety issues, noise, dust and damage to streets caused by aggregate haulers rumbling through town. For this reason, the City, County and PCTPA are strongly opposed to this option.

Option 2. Establishment of a Large Floodplain Easement to the East of Wise Road (Figure 6)

This option examined a possible lowering of the Bypass roadway profile and reduction of the bridge structure length, using any attendant cost savings to purchase a large floodplain easement in one quadrant of the Wise Road intersection. Caltrans Structures Hydraulics unit modeled the 100-year flood event at this location and determined that the floodplain easement required would be approximately 80 acres. This proposed floodplain easement at Wise Road would likely prevent potential indirect impacts. However, Caltrans understands that EPA

strongly supports obtaining an easement in this area, but since this would be mostly a detention basin caused by the filling of the Coon Creek floodplain, the basin itself would be considered a negative rather than a positive impact.

Option 3. Purchase of Easements on the Four Quadrants of the Bypass/Wise Road Bypass Intersection

To address EPA's concerns about indirect affects attributable to the proposed access at Wise Road, Caltrans examined an option that appeared to directly focus on the intersection location. This option would acquire conservation easements in each of the four quadrants of the Wise Road/Bypass intersection, not to exceed a total cost of $500,000, thereby effectively preventing growth inducing developments from occurring in that immediate vicinity. Although this concept was discussed briefly, this option was not pursued due to the more favored options 5 and 6.

Option 4. Elimination of Proposed Undercrossing at Dowd Road and Road Modifications to Accommodate an Initial Overcrossing at Wise Road (Figure 7)

EPA suggested that Caltrans examine this option to see if enough cost savings could be generated by eliminating the proposed undercrossing structure at Dowd Road from the project design, and applying those savings to construction of an overcrossing at Wise Road. Unfortunately, elimination of the Dowd Road structure would necessitate either realignment of heavily used Dowd Road or construction of frontage roads. Because of those additional modifications, there would not be adequate cost savings from this option. The access issues discussed under Option 1 above would also be the same with this option, with the same strong level of local and regional opposition to loss of access at Wise Road.

The figure represents a preliminary design modification of Dowd Road that would require a ninety-degree alignment with the bypass. This 90-degree alignment with the overcrossing and an embankment is needed before a turn or curve is introduced. There are restrictions to introducing turns or curves into a design and this was taken into account for the preliminary design concept. Also, a minimum curve radius was created according to the speed of traffic required by the local agencies.

Option 5. Purchase of Conservation Easements within the Coon Creek Watershed Designated in the two-mile Radius of Wise Road (Figure 8)

In a May 29, 2003 meeting, Caltrans and EPA discussed the possibility of conservation easements for protecting Coon Creek in the vicinity of Wise Road. Caltrans asked EPA to provide suggestions on the dimensions of an area along Coon Creek that could be protected as an alternative to constructing the overcrossing at Wise Road. EPA suggested that Caltrans map the Coon Creek watershed, including a five hundred foot buffer on either side of the watershed, within a two-mile radius of the Wise Road/Bypass intersection. The mapped watershed, including buffers on the north and south sides of the watershed, total 5,206 acres. At a cost of several thousands of dollars per acre to secure easements, this option would cost in the tens of millions of dollars, and is clearly not a viable option. Caltrans understands that

EPA intended this option to be more of a means of gauging the extent of watershed and possible aquatic resources lying within a two-mile radius of Wise Road, rather than outright acquisition of easements on the entire 5,206 acres.

Option 6. Purchase of Conservation Easements along the Coon Creek Watershed Corridor (Figure 9)

Since Option 5 is clearly cost prohibitive, Caltrans has investigated a more realistic but still meaningful level of effort to acquire conservation easements in the Coon Creek watershed. Figure 6 illustrates the efforts currently underway by Placer Legacy in working with the private sector to establish other conservation easements within this watershed. An opportunity may be present to link these other easements with a linear pattern of conservation easements that would provide synergies and cumulative benefits to the entire watershed area in question. Caltrans is prepared to work closely with Placer Legacy, EPA and the Corps to implement this option.

Further discussion between Caltrans, EPA and FHWA on Friday, June 6th, 2003 of Options 1 and 6, determined that in lieu of constructing an initial overcrossing at Wise Road (Option 1), Caltrans commits to acquiring conservation easements in the Coon Creek watershed/floodplain equivalent to the approximate cost of constructing the overcrossing structure. This cost is an estimate based upon preliminary design concepts for the project and is computed as follows:

- 1,800 square meters of bridge structure at $900 per square meter = $1.6million.
- 13,000 square meters of pavement structural section at $40 per square meter = $0.50million.
- 200,000 cubic meters of embankment material at $9 per cubic meter = $1.8million.

Total approximate cost is equal to $3.9 million

The conservation easements would demonstrate avoidance of potential indirect affects to aquatic resources that might otherwise be attributable to provision of access at the Wise Road intersection. An acquisition strategy will be included in the project description and outlined in the Final EIR/S.

These conservation easements are generally a type of land use restriction that limits the property owner's use of property burdened by the easement (a covenant running with the land in perpetuity). Only uses that are consistent with the terms and conditions of the easement are permitted. These instruments tend to be very detailed by their very nature and require careful crafting and legal review to ensure the intent of parties in creating the easement. Grantor and grantee rights would be described in substantial detail. The terms of the easement include identification of the property subject to the easement; the specific aspects of the property that is being preserved (examples include major habitat, aesthetic value, scenic value, agricultural

uses, etc.); the land uses that would likely be compatible with the easement (together with uses that are not compatible). Additional terms might cover enforcement of terms and conditions, remedies for violation of the easement provisions, possibly provide for a specific management plan for the site, assignment and amendment terms and other considerations. A willing party to be the owner of the easement would also need to be identified (usually a public agency). All of these aspects would need to be specified in the grant of easement document.

Conclusion

The City of Lincoln has experienced rapid growth in the last few years and is planning to continue to grow at a similar pace. This growth is desired by the City and accounted for in their General Plan. When considering the many projects within the Study area, there may be an overall significant cumulative impact on farmland and natural resources. However, the cumulative and indirect impacts in the study area may not be attributable specifically to the Bypass project but may in fact be attributable to growth that is planned and projected for the city.

The growth that has been occurring and that is projected for the City of Lincoln has been substantiated by the information included in this analysis. Rocklin and Roseville to the south, Sheridan to the north and the foothills to the east direct this growth naturally to the west towards the airport. The City will probably take action to annex the area west of the airport to accommodate planned growth.

Programs such as Placer Legacy and the Habitat Conservation Plan development could potentially minimize some impacts of this growth. In addition, each individual transportation and development project will provide for mitigation of their impacts to natural resources. Impacts to ACOE jurisdictional wetlands would require consultation, mitigation and ultimate approval from the ACOE. Wetlands, vernal pools and riparian habitat are generally mitigated to the ACOE's no-net-loss policy.

This analysis attempts to provide information and discussion on indirect and cumulative impacts but must also state the limitations inherent in such an analysis. The potential indirect impacts section provides information on resources in the area that could potentially be indirectly impacted by growth that may occur due to the bypass, but must also consider the growth that is occurring or is projected to occur in the area. It is this challenge that has posed problems in the agreement of assumptions used in this analysis. Research in this area of concern has not drawn a clear methodology and has instead given the discretion to the agency performing the analysis. In addition, there is no proven method that can directly link the potential indirect impacts to a specific project when there are many other factors that contribute to resource impacts.

The planned and projected growth, the policies regarding land use, the potential preservation and conservation, housing prices and location attractiveness all contribute to the impacts associated with growth. This analysis discloses resource information and provides a summary of options that Caltrans has considered to avoid or minimize potential indirect and

cumulative impacts that may occur due to the project. Finally, Caltrans has committed to the acquisition of conservation easements in the Coon Creek watershed/floodplain equivalent to the approximate cost of constructing an overcrossing structure at Wise Road. The conservations easements would demonstrate avoidance of potential indirect affects to aquatic resources that might otherwise be attributable to provision of access at the Wise Road intersection. This avoidance strategy of acquiring conservation easements will be incorporated in the project description in the Final EIR/S.

Resources

The following references were used as resources in developing the Indirect and Cumulative Impacts analysis:

- Q & A Regarding the Consideration of Indirect and Cumulative Impacts in the NEPA process. (FHWA, January 2003)
- Land use Impacts of Transportation, A Guidebook. NCHRP Report 423A.
- A Guidebook for Evaluating the Indirect Land Use and Growth Impacts of Highway Improvements. (Oregon Dept. of Transportation, April 2001)
- Considering Cumulative Effects. (Council on Environmental Quality, January 1997)
- NCHRP Report 466 Desk Reference for Estimating the Indirect Effects of Proposed Transportation Projects (Transportation Research Board 2002)
- City of Lincoln General Plan Updates, 2001
- Do Highways Matter? Evidence and Policy Implications of Highways' Influence on Metropolitan Development Prepared for The Brookings Institute, August 2000
- Road Expansion, Urban Growth, and Induced Travel: A Path Analysis: Robert Cervero Department of City and Regional Planning Institute of Urban and Regional Development, University of California, Berkeley, July 2001
- Interim Guidance: Questions and Answers Regarding Indirect and Cumulative Impact Considerations in the NEPA Process, FHWA, January 31, 2003
- Community Development: Local Growth Issues? Federal Opportunities and Challenges Appendix VII: The Influence of Federal Infrastructure Programs on Local Growth; Appendix X: Federal Policy Options; Appendix XII: Comments from the Environmental Protection Agency U.S. General Accounting Office, Report to General Requesters, September 2000
- A Guidebook For Evaluating The Indirect Land Use and Growth Impacts of Highway Improvements, Final Report, ECO Northwest and Portland State University for Oregon DOT and FHWA, April 2001
- Consideration of Cumulative Impacts in EPA Review of NEPA Documents, U.S. Environmental Protection Agency, Office of Federal Activities, May 1999

Contacts

The following agencies and people were contacted to provide information for this report:

- Sacramento Area Council Of Governments, Joe Concannon, Senior Planner
- Placer County Transportation Planning Agency
- City of Lincoln, Rod Campbell, Community Development Director
- Placer County Planning Department, Loren Clark and Kelly Berger
- Office of Planning and Research, Scott Morgan
- U.S. Environmental Protection Agency; Nancy Levin, Tim Vendlinski, Erin Foresman
- California Department of Fish and Game; Joe Carboni, GIS Analyst

Attachment A

PLACER COUNTY
1998-2000 Land Use Conversion

CALIFORNIA DEPARTMENT OF CONSERVATION
Division of Land Resource Protection

Farmland Mapping and Monit

PART I
County Summary and Change by Land Use Category

LAND USE CATEGORY	TOTAL ACREAGE INVENTORIED		1998-00 ACREAGE CHANGES			
	1998	2000	ACRES LOST (-)	ACRES GAINED (+)	TOTAL ACREAGE CHANGED	NET ACREAGE CHANGED
Prime Farmland	9,750	9,901	696	847	1,543	151
Farmland of Statewide Importance	5,195	5,312	769	886	1,655	117
Unique Farmland	22,727	23,616	1,679	2,568	4,247	889
Farmland of Local Importance	114,452	111,987	4,920	2,455	7,375	-2,465
IMPORTANT FARMLAND SUBTOTAL	152,124	150,816	8,064	6,756	14,820	-1,308
Grazing Land	31,695	29,656	3,996	1,957	5,953	-2,039
AGRICULTURAL LAND SUBTOTAL	183,819	180,472	12,060	8,713	20,773	-3,347
Urban and Built-Up Land	37,608	41,448	2,633	6,473	9,106	3,840
Other Land	185,057	184,585	3,163	2,691	5,854	-472
Water Area	5,047	5,026	69	48	117	-21
TOTAL AREA INVENTORIED	411,531	411,531	17,925	17,925	35,850	0

PART II
Land Committed to Nonagricultu

LAND USE CATEGORY
Prime Farmland
Farmland of Statewide Importance
Unique Farmland
Farmland of Local Importance
IMPORTANT FARMLAND SUBTOTAL
Grazing Land
AGRICULTURAL LAND SUBTOTAL
Urban and Built-Up Land
Other Land
Water Area
TOTAL ACREAGE REPORTED

PART III Land Use Conversion from 1998 to 2000

LAND USE CATEGORY		Prime Farmland	Farmland of Statewide Importance	Unique Farmland	Farmland of Local Importance	Subtotal Important Farmland	Grazing Land	Total Agricultural Land	Urban and Built-Up Land	Other Land	Water Area
Prime Farmland (1)	to:	--	28	130	447	605	0	605	52	39	0
Farmland of Statewide Importance (1)	to:	72	--	213	162	447	48	495	4	270	0
Unique Farmland (1) (2)	to:	99	259	--	1,100	1,458	2	1,460	12	207	0
Farmland of Local Importance (3)	to:	560	337	1,965	--	2,862	205	3,067	1,253	600	0
IMPORTANT FARMLAND SUBTOTAL		731	624	2,308	1,709	5,372	255	5,627	1,321	1,116	0
Grazing Land	to:	0	31	8	181	220	--	220	3,387	376	13
AGRICULTURAL LAND SUBTOTAL		731	655	2,316	1,890	5,592	255	5,847	4,708	1,492	13
Urban and Built-Up Land (4)	to:	4	10	23	122	159	1,281	1,440	--	1,193	0
Other Land	to:	112	221	229	443	1,005	358	1,363	1,765	--	35
Water Area (5)	to:	0	0	0	0	0	63	63	0	6	--
TOTAL ACREAGE CONVERTED	to:	847	886	2,568	2,455	6,756	1,957	8,713	6,473	2,691	48

Notes to the Reader:

(1) Conversions between Important Farmland categories primarily due to corrections made to soil unit identification throughout the county.
(2) Conversion to Farmland of Local Importance primarily due to land left idle for three update cycles and refinements to agricultural boundaries.
(3) Conversion to Unique Farmland primarily due to new irrigated agriculture and refinements to agricultural boundaries.
(4) Conversion from Urban and Built-Up Land primarily the result of refinements made to the urban boundary around Roseville, Rocklin and Lincoln.
(5) Conversion to Grazing Land primarily due to refinements made to North Fork Lake and Rock Creek Lake.

Caltrans Metric

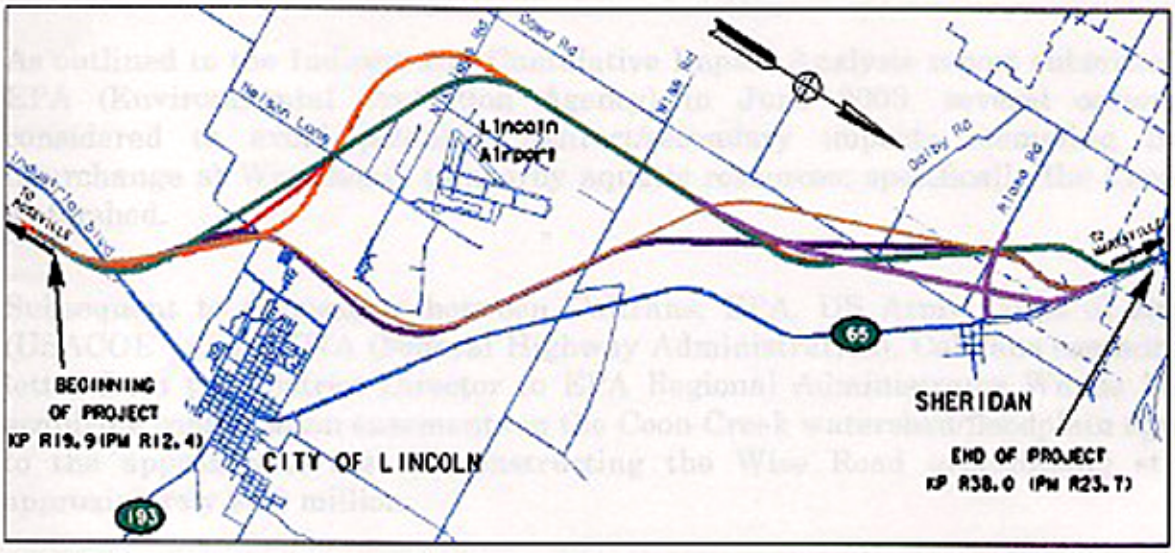
03 - PLA - 65, KP R19.9/R38.0

(PM R12.4/23.7)

03-264 - 333800

HE-14

PREFERRED ALTERNATIVE APPROVAL REPORT



IN PLACER COUNTY ON STATE ROUTE 65 NEAR THE CITY OF LINCOLN

FROM 0.70 KM (0.43 MILE) SOUTH OF INDUSTRIAL BOULEVARD TO 0.15 KM (0.09 MILE) SOUTH OF BEAR RIVER

APPROVAL RECOMMENDED:

Dapo Okupe

DAPO OKUPE, PROJECT MANAGER

APPROVED:

Jody E. Lonergan

JODY E. LONERGAN, DISTRICT DIRECTOR

8/13/03

DATE

Introduction

The purpose of this report is to request approval of the preferred alternative alignment for the Lincoln Bypass project. The Lincoln Bypass project will bypass the City of Lincoln, reduce traffic congestion and accident rates on the segment of the existing State Route 65 near the City of Lincoln, and provide a regional traffic solution that accommodates year 2025 projected traffic volumes.

The DEIR/EIS (Draft Environmental Impact Report/Environmental Impact Statement) was circulated for public review and comments from November 22, 2001 to January 15, 2002. The Draft Project Report was approved on November 5, 2002.

As outlined in the Indirect and Cumulative Impact Analysis report submitted to the EPA (Environmental Protection Agency) in June 2003, several options were considered to avoid potential indirect/secondary impacts stemming from an interchange at Wise Road, to nearby aquatic resources; specifically the Coon Creek watershed.

Subsequent to discussions between Caltrans, EPA, US Army Corps of Engineers (USACOE), and FHWA (Federal Highway Administration), Caltrans committed in a letter from the District Director to EPA Regional Administrator Wayne Nastri to acquiring conservation easements in the Coon Creek watershed/floodplain equivalent to the approximate cost of constructing the Wise Road overcrossing structure, approximately $3.9 million.

On July 9, 2003 and August 8, 2003 the EPA and US-ACOE respectively concurred that, under the National Environmental Policy Act/Clean Water Act Section 404 Integration Process Memorandum of Understanding (NEPA/404 MOU), the D 13 North Modified alternative with Conservation Easements is the Least Environmentally Damaging and Practicable Alternative (LEDPA) for the Lincoln Bypass project.

Six viable alternatives were considered including the "No Build" alternative. Although these alternatives traverse different corridors, they all cross Ingram Slough, Auburn Ravine, Markham Ravine, Coon Creek, Yankee Slough and Big Yankee Slough. All alternatives were developed to a comparative level of detail and their relative merits were evaluated. Based on engineering analysis and environmental studies (including Indirect and Cumulative Impact analysis), the D13 North Modified alternative with Conservation Easements is the Preferred Alternative.

The ultimate project scope for the D 13 North modified alternative includes a four-lane freeway with interchanges at Industrial Avenue, Nelson Lane, Wise Road and Riosa Road, overcrossing at Nicolaus Road, and undercrossings at Ferrari Ranch Road and Dowd Road. The features for the D 13 North Modified alternative are illustrated on Attachment 1.

Summary of engineering reasons for the preferred alternative

All the alternatives considered were designed to meet current Caltrans Highway Design Manual standards, so the preferred alternative was driven primarily by environmental and

right of way constraints. However, of the D13 alternatives, the D13 North Modified has the lowest construction capital cost.

Summary of the environmental reasons for the preferred alternative

The summary of impacts to key environmental resources for each of the alternatives is shown in Table 1.

Table 1: Impact to key resources

	AAC2 Alternative	A5C1 Alternative	D1 Alternative	D13 Alternative	D13 South Modification Alternative	D13 North Modification Alternative
Jurisdictional Waters [1]	6.23 ha (15.4 acres)	7.85 ha (19.4 acres)	5.30 ha (13.1 acres)	4.73 ha (11.7 acres)	5.91 ha (14.6 acres)	5.50 ha (13.6 acres)
Vernal Pools and Swales	3.80 ha (9.4 acres)	4.65 ha (11.5 acres)	2.43 ha (6.0 acres)	2.14 ha (5.3 acres)	3.28 ha (8.1 acres)	2.23 ha (5.5 acres)
Riparian and Oak Habitats	11.21 ha (27.7 acres)	8.17 ha (20.2 acres)	1.54 ha (3.8 acres)	4.45 ha (11.0 acres)	1.17 ha (2.9 acres)	4.45 ha (11.0 acres)
Socioeconomic	469 residences	461 residences	20 residences	10 residences	10 residences	18 residences

[1] Includes areas meeting Corps criteria as wetlands and non-wetland waters of the U.S.

Based on engineering and environmental analyses, the D 13 North Modified alignment is the preferred project alternative.

Evaluation of major comments related to project alternatives

Caltrans has conducted extensive public outreach throughout the project approval and environmental document (PA&ED) phase of the Lincoln Bypass project. Three newsletters were sent out to the residents of Lincoln in April 1990, March 1991 and March 1993. Listed in the table below are the public meetings that were held for the project.

When	Where	What
November 24, 1987	Caltrans District Office, Marysville	Informational meeting with the City, Caltrans, property owners, developers
November 16,1989	Lincoln City Hall	Lincoln City Council Meeting
May 1, 1990	McBean Park Pavilion, Lincoln	Public Drop in Workshop
April 18, 1991	McBean Park Pavilion, Lincoln	Public Drop in Workshop
September 22, 1999	McBean Park Pavilion, Lincoln	Public Drop in Workshop
January 12, 2000.	Sheridan	Sheridan Municipal Council Meeting
December 18, 2001	McBean Park Pavilion, Lincoln	Public Hearing/Open House

There is great public support for the D corridor alternatives. In 2002, the Placer County Transportation Planning Agency (PCTPA), Placer County, and the City of Lincoln adopted resolutions in support of the D 13 North Modified alternative.

Discussion on construction cost and right of way cost for the preferred alternative and comparison with the programmed cost.

A focussed management team with representatives from Caltrans, PCTPA, Placer County, and the City of Lincoln was established in January 2003 to address the projected shortfall in programmed funds. The team developed multiple strategies on project refinement and phasing and identified additional funding sources. The team ensured that refined scope meets the need and purpose of the project. The current total estimate for right of way and construction capital costs is $175.5 million. Provision of additional funds and in-kind contributions as required to fully fund the project have been agreed to by PCTPA, Placer County and the City of Lincoln.

As part of the LEDPA approval by EPA, $3.9 million of Conservation Easements are required for mitigating indirect and cumulative project impacts on the Coon Creek watershed. The team is developing strategies to fund this mitigation cost. The strategies will be finalized prior to project approval and Final Environmental Document completion (PA&ED).

Recommendation

The Project Development Team met to consider these findings and recommends that the D 13 North Modified alternative with Conservation Easements be approved as the preferred project alternative.

Attachments:

D 13 North Modified alternative.

Indirect and Cumulative Impact Analysis
Lincoln Bypass - State Route 65
Placer County, California

KP R19.6/R38.3
PM R12.2/R23.8

August 28, 2003



SR 65 Lincoln Bypass
Indirect and Cumulative Impact Analysis

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Attachment A: Placer County Land Use Conversion

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Figure 2 Farmland and Williamson Act Lands

Figure 3 Riparian and Non-Riparian Woodlands

Figure 4 Vernal Pools and Wetlands

Figure 5 Parcel Map

Figure 6 Option 2: Floodplain Easement

Figure 7 Option 4: Proposed Re-Alignment of Dowd Road

Figure 8 Option 5: EPA Proposed Conservation Easements

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Introduction

Caltrans is proposing to construct a freeway to bypass the City of Lincoln in Placer County, and has circulated a Draft Environmental Impact Statement /Draft Environmental Impact Report (Draft EIS/R) for public review and comment from November 21, 2001 to January 15, 2002. In response to the Draft EIS/R and during subsequent consultations as part of the NEPA/404 Integration Process, the U.S. Environmental Protection Agency (EPA) and the U.S. Army Corps of Engineers (ACOE) raised further concerns about the potential cumulative and indirect effects of the project. The following analysis examines the potential cumulative and indirect impacts associated with the Bypass. Consultation with the EPA for guidance on addressing cumulative and indirect impacts was helpful in developing this analysis.

Assessing indirect impacts of transportation projects in rapidly growing areas of California is difficult. Caltrans projects are designed to relieve existing congestion and respond to planned growth in accordance with local and regional plans and policies. Local governments determine the extent of growth they desire. These growth decisions are independent of any Caltrans position and are the legal responsibility of the local agencies. Due to limited resources and competing local, regional and statewide transportation needs, Caltrans must work with regional transportation planning agencies and local entities to identify funding priorities. Projects may be funded in whole or in part, by local, state, federal or developer funds. Many local projects do not have state or federal funding and may be constructed at the discretion of the local agency. Resources are distributed to projects that will improve mobility and the safety of the public. Often project construction is done in phases so that resources can be equitably distributed throughout the state.

Methodology/Limitations

A variety of quantitative and qualitative methods such as ArcView GIS files, City and County General Plans, conversations with city and county planners and review of planning websites and documents were used in this analysis. GIS coverage's were downloaded from resource agencies, or obtained from Placer County and the City of Lincoln.

In addition to the mapping and quantitative computations, qualitative information was obtained from City of Lincoln and Placer County General Plans, City and County personnel, Sacramento Area Council of Governments, Placer County Transportation Planning Agency, regulatory websites and personnel, resource websites and personnel, CEQA, NEPA and FHWA guidance papers and regulations, various project environmental documents, academic papers on the subject matter, State Route 65 specialists studies, and consultants who have provided analysis. A list of these resources is provided at the end of this document.

There are inherent difficulties in assessing indirect and cumulative impacts that need to be taken into consideration. Academic papers such as, "Road Expansion, Urban Growth, and Induced Travel: A Path Analysis" and "Do Highways Matter? Evidence And Policy

Implications of Highways' Influence on Metropolitan Development" discuss the complexities involved with transportation planning. References cited at the end of this analysis provided discussion on analysis but failed to provide exact definitions of terminology, instead they gave discretion to the transportation-planning agency and pointed to case law for examples.

The Council of Environmental Quality (CEQ) and the National Environmental Policy Act (NEPA) regulations identify uncertainties about evaluating indirect effects of a proposal and recognize that many methods of analysis have inherent weaknesses.

> *"…if there is total uncertainty about the identity of future land owners or the nature of future land uses, then of course, the agency is not required to engage in speculation or contemplation about their future plans. But, in the ordinary course of business, people do make judgments based upon reasonably foreseeable occurrences. It will often be possible to consider the likely purchasers and the development trends in that area or similar areas in recent years; or the likelihood that the land will be used for an energy project, shopping center, subdivision, farm or factory. The agency has the responsibility to make an informed judgment, and to estimate future impacts on that basis, especially if trends are ascertainable or potential purchasers have made themselves known. The agency cannot ignore these uncertain, but probable, effects of its decisions."*

Section 15355 of OPR's CEQA Guidelines provides the following context: Cumulative impacts refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. The cumulative impact from several projects is the change in the environment that results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time. Environmental cumulative effects accumulate when the environment does not have enough time to recover to its original condition before another outside action takes place to affect the environment.

This analysis provides information on the known landowners, growth pressures, and projects in the area and the known plans and policies of the local jurisdictions and what all this may mean to natural resources in the project area. The speculative future of land ownership and projections of land development scenarios are beyond the scope of this analysis. Caltrans has obtained information that will satisfy the requirements of CEQA, NEPA and Section 404 of the Clean Water Act, and to provide regulatory agencies with information regarding possible impacts associated with this project.

FHWA's "Interim Guidance: Questions and Answers Regarding Indirect and Cumulative Impact Considerations in the NEPA Process" describes the difficulty in analyzing these types of impacts. The guidance states, "A proposal for a new alignment project in an area where no transportation facility currently exists, or one that adds new access to an existing facility may indicate the potential for project related indirect impacts from other distinct but connected actions." It is up to the transportation agency to analyze and determine what 'may' occur given the conditions of other factors in the project area.

The guidance also directs the project proponent to include the effects of "reasonably foreseeable" actions. The focus is intended to differentiate what is likely to occur or probable, rather than what is possible. This distinction is an important point to keep in mind when reviewing the information contained in this analysis. The guidance further states, "…we find that reasonably foreseeable events, although still uncertain, must be probable."

The National Cooperative Highway Research Program desk reference indicates that under NEPA, an EIS should include all reasonably foreseeable impacts, not all conceivable impacts. The reference also concludes "…all potentially significant future impacts must be evaluated, but may be ignored if the impact is improbable although possible, or if the impact is too uncertain to make reasonable evaluation of it possible."

Although the bypass may change the pattern of growth in the area, much of the growth that would occur in the area can be determined from reviewing plans of the City and County, obtaining information on projected growth, recent development patterns, discussion with City and County personnel and the policies currently implemented in the project area. Planned growth is occurring in the project area and although the bypass may accelerate some of this growth, there are no specific developments that have been identified as dependent upon the freeway for its ultimate approval.

Several meetings and discussions with EPA regarding indirect and cumulative impacts provided direction on how to assess impacts within the project area. A four-mile circle around interchanges and intersections is being used to frame the discussion of impacts due to the proposed freeway. This concept of using a four-mile circle was published in Caltrans Standard Environmental Reference material as a guide for determining possible impacts. This four-mile circle may be too large given the growth that is projected and planned in the area and there is the potential to double count impacts due to the City's plans to develop regardless of the bypass. The four-mile circles also cross, or come very close to, the existing SR 65 alignment. These circles are therefore seen as worst-case potential influence areas from **both** the bypass and the development patterns that are occurring in the area. It cannot be determined which indirect impacts are attributed to the bypass and which can be attributed to the development in the area.

Many factors contribute to the changes in land use in the Lincoln area. The following analysis presents some of these factors for consideration. The project may have potential indirect impacts in areas around the interchanges and at-grade intersections, but determining the impacts of what is reasonably foreseeable versus what is possible is a very difficult task. Models used in any analysis must use assumptions that are agreed upon by all parties involved. If there is question as to the validity of a model's assumptions, other analysis can be conducted at the discretion of the lead agency. It is challenges of this sort that make it difficult to clearly identify the exact impacts, other than direct impacts, attributable to the bypass.

Information Gathering

Obtaining the information in this analysis posed tremendous challenges. The GIS files were often not in the correct technical map projection to be used with other GIS files. Many of the environmental documents of local projects, when available, did not provide quantitative information of potential indirect and cumulative impacts but merely discussed the natural resource impacts in a general sense. Very often, the environmental documents simply were not available.

Project Description

The Draft EIS/R for the SR 65 Lincoln Bypass Project covers the ultimate project, which includes a four-lane freeway with interchanges at Industrial Avenue, Nelson Lane, Wise Road and Riosa Road. There will be an overcrossing at Nicolaus Road and an undercrossing at Dowd Road, neither of which will have access to the freeway. A cul-de sac will be constructed at Moore Road, eliminating access to the freeway from Moore Road. Due to funding constraints and project priorities, the bypass will be built in phases. However, the purchase of right-of-way and the earthwork for the ultimate project will be done in the initial phase.

Revisions to the project may be necessary if funding changes. A minimum project will be constructed following the completion and approval of the Final EIR/S and permit approvals. Final engineering design, preparation of plans, specifications and estimates and right of way acquisition follow the environmental approval process before advertising and awarding of a construction contract occurs. Funding availability will dictate the progress of future construction for the ultimate project. Initially, four lanes will be constructed from the beginning of the project near Industrial Avenue up to Nelson Lane. From that point on to where the Bypass would re-join existing SR 65 near Sheridan, only two lanes will be constructed, with the earthwork for the entire four-lane footprint being laid down.

An overcrossing at Nicolaus Road and undercrossing at Dowd Road will be built during the initial construction. Due to the rising costs of Right of way, purchase for the ultimate four-lane freeway project will be acquired during the first phase.

Discussion of interchanges and intersections

Industrial Avenue

An interchange at Industrial Avenue is required due to the heavy volumes of traffic that are expected in that area. This interchange will be constructed in the initial phase and would serve the residents of the Twelve Bridges and Lincoln Crossing subdivisions, as well as those travelers coming from Sacramento and Roseville who are making inter-regional trips.

Nelson Lane

The first phase of the proposed project includes construction of an at-grade intersection at Nelson Lane. As the need arises and funding allows, an interchange would be constructed. This interchange would serve the industrial type traffic using the airport and industrial parks surrounding the airport. An intersection and later, an interchange, at Nelson allows for access

to the airport. The Lincoln Regional Airport serves an important transportation need for the planned industrial area adjacent to the airport. The Lincoln Airport Authority has proposed major improvements to the airport over the next 20 years. Local access to the airport is critical to the success of both the airport and the adjacent industrial type businesses.

Wise Road

The Draft EIS/R describes an at-grade intersection at Wise Road in the initial phase of the project and an interchange as the ultimate plan for Wise Road. Wise Road provides access for trucks that would otherwise haul aggregate and other material through the town of Lincoln. Conservation easements may be acquired in the Coon Creek watershed and floodplain area to address EPA's concerns regarding growth inducement due to the interchange at Wise Road.

Riosa Road

At the north end of the Bypass project, Riosa Road would have an at-grade intersection for the first phase of the project and later an interchange as traffic volumes warrant and funding becomes available. Access to the freeway at this point serves the community of Sheridan.

Factors influencing land use changes

Transportation investments result in major land use changes only in the presence of other factors, such as supportive land use policies, local development incentives, availability of developable land and a good investment climate. Factors influencing the likelihood and rate of development near rural interchanges include distances to major urban or regional centers, traffic volumes on intersecting roads, presence of frontage roads and availability of water and sewer and other infrastructure. Following is a discussion of land use policies, plans for infrastructure improvements, availability of land and the desirability of the area that would influence land use in the Lincoln area.

Land Use Policies

City of Lincoln land use policies

Figure 1 shows the City and County General Plan designations, including changes currently being considered for the Lincoln General Plan update. As stated in their General Plan, it is the City of Lincoln's policy to ensure that agriculture will continue to be a significant land use within the city's sphere of influence.

Within the project area, the primary zoning designations are residential through the new subdivisions Lincoln Crossing and Three D, and agriculture from Moore Road to the edge of the City of Lincolns' Sphere of Influence limits. There are a total of 89,139 acres within the City's current sphere of influence. Of the acreage within the sphere, there is approximately 5,114 acres of land designated and zoned as agricultural. The percentage of agricultural land that could be impacted by policies and plans within the city represent 5.74% of the total acreage within the sphere of the city.

The City is currently working on updating their General Plan and expects to have it completed late in 2005. Preliminary consideration has been given to annexing an area that

would include the airport and the bypass. (See Figure 1) This area would extend slightly west of the bypass. The area considered for annexation could be developed in coordination with Lincoln's plans to expand their airport. It is possible that land use in this area could be re-zoned for mixed-use development and industrial. However, CEQA reviews and approval of the General Plan annexation would be required in order for this to occur.

Placer County land use policies

The portions of the project study limits that are outside Lincoln's sphere of influence are under Placer County's jurisdiction. The area affected by the proposed project is zoned for Agriculture in Placer County's General Plan, most with an 80-acre minimum parcel size with some smaller areas having a 20-acre minimum parcel size. (See Figure 1) Placer County has a policy to designate adequate agricultural land and promote development of agricultural uses to support the continued viability of Placer County's agricultural economy.

Sacramento Area Council of Governments (SACOG) and the Placer County Transportation Planning Authority (PCTPA) projections for the area

Lincoln is included on SACOG's list of fastest growing communities that also includes Rancho Cordova, Vineyard, Cosumnes and West Sacramento. The City of Lincoln is projected to have a population of 62,414 in 2025, up from 16,154 in the year 2000 (SACOG Metropolitan Transportation Plan). The fastest growing housing markets in the Sacramento metro region are in the communities of Laguna, Rancho Cordova, Vineyard, Lincoln and Roseville. Per SACOG, there are currently 6,541 housing units in Lincoln with 24,964 projected for the year 2025. However, projections show that the fastest growing employment markets will be in Roseville, Downtown Sacramento, West Sacramento, Rancho Cordova and Laguna. It's anticipated that 40 percent of job growth between 2000 and 2025 will come from office and manufacturing jobs in these suburban areas. These suburban job centers will increase the demand upon transportation infrastructure and will place additional pressure on interregional travel options.

SACOG's projections are based upon the Metropolitan Transit Plan (MTP) for the region. The MTP includes transportation infrastructure improvements that are priorities in the region. The modeling includes these infrastructure improvements and other variables to determine what assumptions should be made regarding population, housing and job growth projections for the region.

Growth and traffic congestion are two areas of particular concern to SACOG. The economy in the region is undergoing a major change due to the influx of non-government jobs from surrounding areas that have a higher cost of living. In addition, the overall population in the region is expected to grow by almost a million people (approximately 50%) by 2025. Most development is occurring beyond the existing urban development, placing additional pressure on infrastructure.

SACOG has designated several regional projects as a priority in order to adequately serve the growth planned in the region. The Lincoln Bypass is listed as one of those priority

projects. Other priority projects include upgrades to the Capitol Corridor Intercity Rail and a new Regional Rail Service, other highway improvements, Light Rail extensions, the Placer Parkway and Regional Bicycle and Pedestrian Improvements.

SACOG is currently undertaking a transportation/land use study examining the growth that is expected to occur in the region up to the year 2050 and the impacts associated with that growth. SACOG is developing this study to provide information on land use decisions and what impacts those decisions will have on quality of life issues, mobility and the environment in the long term. SACOG hopes this study will bring the local jurisdictions together to incorporate changes in land use.

Effect of infrastructure such as sewer and water on land use changes

Current and future plans for infrastructure improvement in Placer County

There are no plans for infrastructure improvements in the area west of the bypass due to the current agricultural character of the area. The town of Sheridan is the only urban area in the unincorporated portion of the County and it is currently under a moratorium on growth until new sewer facilities are constructed. Currently, there are no plans for expansion of the sewer or water systems for Sheridan.

Current and future plans for infrastructure improvement in the City of Lincoln

The City plans to build a new wastewater treatment and reclamation facility located off of Moore and Fiddyment Road. The old wastewater treatment facility, currently located west of the city of Lincoln near Nicolaus Road and Nelson Lane, will be dismantled. The new facility will serve customers currently using the old wastewater treatment plant as well as the residents of the new subdivisions.

Some minor infrastructure improvements include well sites for back-up water and peak demand purposes.

Many of the local road improvements are being planned to accommodate the expected growth under the new general plan. Local officials have indicated that many local roads are currently being heavily used to bypass the congestion in the city. These transportation projects may or may not have a portion funded by State and Federal monies. Some of these projects may be funded in whole or part by Local agency or developer funds. In the City of Lincoln, the following local road improvements are planned and/or are in various stages of construction (See Figure 5):

- 2003 – Aviation Blvd.: Construct new two- to four-lane road from Nicolaus Rd. to Wise Rd.
- 2003 – Lincoln Parkway: Construct two-lane road including Union Pacific Railroad overcrossing, from SR 65 to Westlake Blvd.
- 2003 – Lincoln Parkway: Construct new four-lane road from Moore Rd. to Westlake Blvd.
- 2005 to 2010 – Lincoln Parkway: Various widening projects at different locations.
- 2005 – Gladding Parkway: Construct a new four-lane roadway from SR 65 to East Ave.

- 2005 – Joiner Parkway: Widen from two to four lanes, from First Street to Moore Rd. and construct new bridge.
- 2006 – Ingram Parkway: Construct a new four-lane parkway from Sun City Blvd. to Ferrari Ranch Rd.
- 2010 – Aviation Blvd.: Widen from two to four lane, from Venture to Airpark Drive.
- 2010 – Industrial Avenue: Widen from two to four lanes from Route 65 to Athens Blvd.
- 2010 – Lakeside Drive: Widen from two to four lanes, from Nicolaus Rd. to Airpark Drive.
- 2015 – G Street: Widen from two to four lanes with left-turn pockets, from Westlake Blvd. to Industrial Avenue

Availability of Developable Land

Currently much of the land in the project area and outside the city of Lincoln Sphere of Influence is zoned for agriculture. However, development companies own some land near the proposed intersections. Figure 5 shows the land ownership in the vicinity of the proposed project. Most of the investment properties are within the area that is projected for annexation into the City of Lincoln and as such would be more likely to develop if zoning was changed and the Williamson Act contracts were not renewed. Currently, much of this land is still under Williamson Act contracts (Figure 2).

The area under consideration for annexation to Lincoln is shown in Figure 1. Zoning west of the Bypass is expected to remain agricultural within the planning horizon of the Placer County General Plan (2004-2014). The presence of the proposed project may place development pressure on the areas surrounding the intersections and interchanges if zoning changes occur. The area between the city of Lincoln and the proposed bypass is expected to be developed within the general plan horizon and is zoned accordingly.

Housing and Employment Trends in the Lincoln Area

The City of Lincoln plans to increase its housing stock to accommodate the 13% anticipated average annual growth over the next 10 years (until 2012). Between 2010 and 2020 Lincoln's forecasted annual growth rate is expected to decline. However, rapid growth during the period of 1999-2002 increased Lincoln's population from approximately 8,700 residents to 17,700[1]. This rapid growth translates into a three-year average annual growth rate of 26%.

The rapid population growth in Lincoln has corresponded to the growth in housing. Lincoln's housing stock increased from 3,359 to 6,766 between 1999 and 2002. (City of Lincoln's General Plan Background Report, December 9, 2002). The Sun City Lincoln Hills Development was a significant contributor to this population and housing surge, adding approximately 2,800 homes with an additional 3,800 homes yet to be built.

[1] This number varies depending on the source: Dept. of Finance, June 2002 estimates 17,713 residents, SACOG 2002 estimates 16,154, Lincoln's General Plan Background Report, December 2002 estimates 17,700.

According to the City these growth projections are not based upon transportation improvements. The City analyzes the growth potential and then reviews the infrastructure needed to accommodate this growth.

The proposed project has been included in the traffic modeling assumptions for both the City of Lincoln and SACOG because it is included in the MTP. The MTP is developed to help establish priorities for the region and to direct infrastructure improvements to accommodate the growth.

Housing in Roseville is expected to increase from 33,568 in 2000 to 49,674 in 2025. Employment in Roseville area is expected to grow from 59,591 to 112,476 in 2000 and in Lincoln from 4,612 in 2000 to 17,463 in 2025 (SACOG Metropolitan Transportation Plan and Lincoln's General Plan Background Report, December 9, 2002). Since the 1990's, Lincoln's employment has grown by approximately 600 jobs, 300 of which were in the manufacturing sector. Much of this growth can be attributed to leased space at the business park located near the Lincoln Regional Airport. Retail employment is projected to increase during this period to serve the increased population expected in the area.

Desirability of the area

According to the SACOG's Metropolitan Transportation Plan, the high cost of housing in the Bay Area and job opportunities in west Placer County have made the Sacramento Valley a desirable area. Job centers are projected to grow in Roseville and Rocklin that will ultimately have an impact upon the City of Lincoln due to its proximity.

Increased accessibility

The proposed project would improve access to areas surrounding Nelson Lane. Eventually, as the need and funding allow, an interchange is proposed for Nelson Lane. Nelson Lane is currently a non-engineered low volume county road. It provides access to the airport and the industrial area adjacent to the airport. Nelson Lane would be upgraded when the proposed project is built. The area that Nelson Lane serves is already zoned Industrial, and its zoning is not likely to change when the road is improved.

Land availability and prices

Population growth and labor market growth in Sacramento, Rocklin and Roseville has increased housing and land prices throughout the region. With this growth, the demand for housing and land for development has escalated. Although the cost of land is increasing in the region, it is still relatively affordable and hence has development pressure due to its proximity to regional job centers.

The following table shows the average price of home sales for Lincoln and the surrounding areas (MetroLink, April 2003 & Sacramento Business Journal).

Table 1 Average Home Sales

Lincoln	Rocklin	Roseville	Sacramento	Bay Area	Auburn

$292,737	$314,534	$304,685	$361,945	$443,000	$385,125

Location attractiveness

Lincoln is attractive to potential homebuyers for a number of reasons. The proximity to job centers in Roseville, Rocklin, Auburn and Sacramento is certainly one reason people move to Lincoln. Many residents of Lincoln have indicated that they moved to the area for its rural qualities and small town feel.

Land availability and the lower home prices are another draw to this area, as new homebuyers get priced out of the surrounding cities.

Description of planned developments

Many of the Specific Plans for the subdivisions include "livable community" elements such as bike/pedestrian mobility. Other elements being incorporated are a mix of densities and types of residential units integrated with commercial, light industrial, business/professional, employment, recreation, habitat preserves, open spaces and public facilities such as schools, church sites, etc. Mixing up land uses can cut down or even eliminate the use of the automobile for everyday errands and commuting to work travel.

In addition, the City of Lincoln has prepared a Bikeway Master Plan, adopted in 2001. The plan proposes about 53 miles of bikeway facilities (8.67 miles of Class I bike paths, 39.60 miles of Class II bike lanes and 4.65 miles of Class III bike routes). The development of the proposed facilities will provide for bikeways throughout the Lincoln City limits, and includes regional connections to Rocklin, Roseville and Auburn.

Summary of Factors influencing land use changes

Information on land use, general plans, city and county policies on growth, current zoning and possible changes that can be reasonably foreseen to impact growth were used in assessing the growth inducement impacts for this project the analysis. Speculation on future land use was avoided.

Studies have shown that development will likely occur when new roads allow access to land previously inaccessible and the area is prime for development. However, whether highways facilitate such growth or whether they are merely serving the growth that would have otherwise occurred has never been agreed upon.

The City of Lincoln has been one of the fastest growing areas in the State and is accommodating this growth with their plans and policies. This growth has occurred in spite of the transportation infrastructure not keeping pace with the need. Factors that have contributed to the growth occurring in this area are lower housing prices, proximity to job centers, the rural quality of the town and a positive economic climate. Due to all these other factors being in place, it can be reasonably argued that growth occurring now and expected in the near future would take place regardless of the Lincoln Bypass.

Potential Indirect / Secondary Effects

Indirect effects are described in the CEQ regulations as those effects "which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems." (40 CFR §1508.8(b))

It is difficult to determine the potential indirect impacts attributable to this project. The highway project is in response to growth pressures caused by various factors such as the City of Lincolns dissemination of building permits and development agreements, the cost of land in nearby cities, the level of other infrastructure such as sewer systems, transportation systems, school systems and the many other reasons that people choose to live in Lincoln and not Roseville, Rocklin, or Sacramento. Given that the proposed project is necessary because of the increased development in the area, the proposed project is actually the indirect impact of the developments that have been approved in the area.

With that in mind, the indirect effects of the proposed project are limited to noise and air quality impacts caused by incrementally more cars operating and natural resource impacts in the immediate vicinity of the proposed project. The proposed project is not independently growth inducing, thus it is difficult to determine what indirect or secondary effects are due to the proposed project or to other factors, such as described above, that promote economic growth in an area.

In this analysis, the conditions surrounding the City of Lincoln's growth have been examined. The following potential indirect impact figures are presented to provide information on resources in the area that could be impacted from **both** the bypass and Lincoln's land use policies. The four-mile circle does not constitute the extent of indirect impacts from the bypass since we cannot precisely extract those indirect impacts directly linked to the development that is planned or already occurring from the potential indirect impacts from the bypass. There are no proven methodologies that provide measurements regarding indirect impacts associated with development patterns and those that are attributed to transportation infrastructure.

Given the limitations of the indirect analysis, it can be stated that growth is reasonably likely to occur along the new highway corridor, and particularly at the proposed new interchanges. However, those areas in question are currently zoned for agriculture and would require a change in zoning for growth to occur there. In addition, much of the area in question is being considered for annexation due to the projected growth in both the industrial area around the airport and entire city.

The purpose of this project is to relieve congestion in the City of Lincoln and provide for a regional traffic solution to accommodate projected traffic volumes through the year 2025. Additional growth, beyond what is already planned and accounted for in the City and County

General Plans, is not an expected consequence of this project. The Lincoln Bypass may increase the pace of growth and the location of growth, but not the likelihood for growth. The Lincoln Bypass is not funded by developer funds nor is it a requirement by the city for the development that has occurred heretofore.

There are three areas that could be subject to additional growth somewhat dependent upon the freeway, the beginning of the project at Industrial Avenue, the access at Nelson Lane, Wise Road and the end of the project at Riosa Road.

At Industrial Avenue, much of the area is zoned for residential development, so no further impacts to natural resources due to the freeway are expected at this location.

Nelson Lane is zoned for Industrial type land use to the north, and agricultural to the south. It can be expected that the agricultural area would be under increased pressure to develop when access is provided and Nelson Lane is improved. Currently, there are no investment type owners adjacent to the proposed interchange, however, Warm Springs Investment owns 997 acres to the west of this area; from Moore Road to Nicolaus Road. In addition, these parcels are within the proposed annexation area proposed by the City of Lincoln. It could be expected that these areas would be eventually rezoned Industrial.

Wise Road is located within close proximity to both the airport and Teichert Aggregate facility and is currently zoned as agricultural with a 10-80 acre minimum. The area surrounding this intersection will be under pressure to develop as the airport expands and if annexation occurs. However, there are current restoration and conservation activities in this area. Placer Legacy, in coordination with some land owners, have restored areas or have plans to restore areas within the Coon Creek watershed and floodplain area (see Figure 9).

In light of the potential growth inducement impacts associated with access at Wise Road Caltrans has worked in coordination with Placer Legacy and EPA to develop an avoidance strategy that will help conserve the Coon Creek corridor by including acquisition of conservation parcels. These parcels will attempt to keep the Coon Creek corridor intact and avoid potential indirect affects to aquatic resources.

Currently, Riosa Road is zoned rural residential to the east and agricultural to the west. It is within the Sphere of Influence of Sheridan. Sheridan currently has a moratorium on development until they update their General Plan. Although there are no immediate plans to develop this area, with a zoning change, development could take place here.

Resources within a four-mile circle around proposed intersections and interchanges

Agriculture

Figure 2 shows farmlands within a four-mile circle around the proposed interchanges and at-grade intersections. At this time, the area west of the bypass is zoned as agricultural. However, approximately 3,302 acres to the west of the airport, currently zoned as agriculture, are proposed for annexation under the new City of Lincoln General Plan.

Placer County provided information on farmland, using the California Department of Conservation Farmland Monitoring and Mapping Program to locate and designate farmland within Placer County and the City.

The following table summarizes farmlands within the four-mile circles broken down into the following categories: Urban or built-up land, Grazing land, Farmland of Local Importance, Prime Farmland, Farmland of Statewide Importance, Unique farmland and Other[2]. Also shown are those parcels within the radius under the Williamson Act contract and those that will not renew their contracts.

Table 2 Farmland in Study Area

Type of Farmland	Farmland within Four-mile Areas	% Of Total Four-mile Areas
Urban and Built-up Land	2,451 acres	9.2%
Grazing Land	3,356 acres	12.6%
Farmland of Local Importance	12,534 acres	46.9%
Prime farmland	3,398 acres	12.7%
Farmland of Statewide Importance	833 acres	3.1%
Unique Farmland	2,706 acres	10.1%
Other	1,441 acres	5.4%
Total Farmland and Other	26,719 acres	100.0%
Williamson Act Parcels	6,638 parcels	86.4%
Non-Renewed Williamson Act	1,042 parcels	13.6%
Total Parcels in Four-mile Areaa	7,680 parcels	100.0%

Locally important farmland represents the majority of farmland located within the project vicinity and is predominant in all four-mile circles around the interchanges and intersections. Prime farmlands occur predominately in the south end of the bypass between Nelson Lane and Nicolaus Road and also occur in the area proposed for annexation.

Williamson Act

The California Land Conservation Act of 1965, commonly referred to as the Williamson Act, enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use.

The Williamson Act provides for lowered property taxes for lands maintained in agricultural and certain open space uses. The landowner enters into a contract with the county or city to restrict land uses to those compatible with agriculture, wildlife habitat, scenic corridors, recreational use, or open space. In return, the local authorities calculate the property tax assessment based on the actual use of the land instead of its potential value assuming full commercial development. To be eligible, the land must be designated by a city or county as agricultural preserve, scenic highway corridor, or wildlife habitat area; or it must be actively

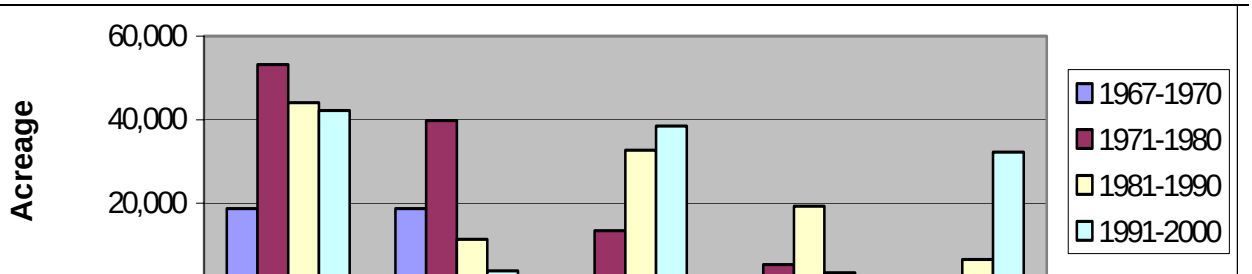
[2] Land that does not meet the criteria of any other category. Typical uses include low-density rural development, heavily forested land, and mined land or government land with restrictions on use.

used for the three years immediately preceding the beginning of the contract as a saltpond, managed wetland, or recreational or open space area.

Each year the contract is automatically renewed for a new ten-year period, unless the landowner notifies the local government of a desire not to renew. If the landowner does not renew, the land use restrictions remain in effect until the remaining nine years of the contract have passed. There are also provisions for canceling the contract if cancellation is consistent with the purposes of the Williamson Act or otherwise found to be in the public interest.

The Williamson Act Parcels are displayed in Figure 2. Due to the amount of development in the area, fewer landowners are renewing their contracts. The number of parcels that have not renewed has decreased in the ten-year period between 1990 and 2000 (Western Placer Agricultural Study, January 2002). Much of the non-renewed contracts are for pastureland or "native" vegetation. Efforts are underway with Placer Legacy, Placer Land Trust and other concerned citizens to ensure that land is preserved for agricultural uses.

Table 3 Williamson Act Trends



	Active	New	Existing	Non-Renewal	Expired
1967-1970	18,695	18,695	0	0	0
1971-1980	53,230	39,808	13,422	5,273	0
1981-1990	44,058	11,342	32,718	19,251	6,536
1991-2000	42,244	3,777	38,467	3,308	32,262

There are 1,042 Williamson Act parcels within the four-mile circle around the interchanges and intersections, which according to Placer County officials will not be renewed, most occurring around the Wise Road intersection. Development around these areas depends upon land ownership and the desire for landowners to remain under contract of the Williamson Act. The proposed flood easement would prevent a portion of the non-renewed parcels from being developed and the eventual grade separation at Wise Rd. with no access would also curtail some land speculation.

The owners of parcels located east of the existing SR 65 include Teichert and Coon Creek Cattle Company. In the City of Lincoln between the existing SR 65 and the proposed bypass JBL investment and Sutter Bypass Properties, Inc own some of the non-renewed parcels.

The parcels located within the proposed Lincoln annexation area include P & F Investment Company, located between Nicolaus and Wise Road. The parcels owned by P & F Investment Company are still under Williamson Act contracts but these contracts may be expired within 10 years. Some of the remaining parcel ownership within the four-mile circles includes John Hancock Mutual Life Ins. Co., Amaryllis Investments Inc., JBL Investments Inc., Sherwens Investments LLC, Warm Springs Investments LTD, the Canevari property under a Wetland Conservation Easement and Siller Bros. Inc. northwest of the bypass. Please refer to Figure 2 for more information on parcel ownership.

Investors adjacent to the bypass are more likely to develop lands if conditions within the City allow for such development. The majority of these investors are located within the City of Lincoln or are within the proposed future annexation of the City. The remaining investors are within close proximity to the bypass but are in areas currently zoned agricultural land and not within the City or the proposed annexation. Development could potentially occur as the City of Lincoln grows and if zoning is changed in the area.

Natural resources, aquatic resources

Riparian/Non-riparian habitat

Table 4 Riparian/Non-Riparian Woody Habitat

Type of woodland	Area within four-mile circles
Riparian Woody Habitat	188 acres
Non-Riparian Woody Habitat	389 acres
Total	577 acres

Most of the riparian woody habitat within the project area occurs in the four-mile circles surrounding Wise Road intersection and the Nelson Lane intersection (See Figure 3). The non-riparian wooded area occurs within the City of Lincoln and is already developed.

These computations were completed using GIS files provided by Placer County and based upon information obtained from the U.S. Environmental Protection Agency, California Department of Fish and Game and the United States Fish and Wildlife Service.

Vernal Pools

Table 5 Vernal Pools

Type of Vernal Pool	Area within Four-mile circles
Vernal pools/disked or disturbed	268 acres
Vernal pool-swale complex/disked or disturbed	3,044 acres
Vernal pools/unaltered landscape	39 acres
Vernal pool-swale complex/unaltered landscape	594 acres
Permanently flooded palustrine emergent	93 acres
Total	4,038 acres

The majority of vernal pool/vernal swale complexes that are disked or disturbed are located within the Wise Road area, west of the bypass along the area proposed for future annexation. The second largest portion of disked or disturbed vernal pools is located at the Nelson Lane intersection. The remaining vernal pool/vernal swale complexes that are disked or disturbed occur randomly throughout the remaining four-mile circles.

The categories of aquatic resources that lie within the four-mile circle at intersection and interchange locations are: 1,480 acres of vernal pools, 22 acres of open waters and 15 acres of permanently flooded palustrine emergents within the Wise Road intersection; 1,011 acres of vernal pools, 22 acres of open waters and 18 acres of permanently flooded palustrine emergents within the Industrial Boulevard interchange; 998 acres of vernal pools, 115 acres of open water, and 40 acres of permanently flooded palustrine emergents within the Nelson Lane interchange; 970 acres of vernal pools, 44 acres of open water, and 35 acres of permanently palustrine emergents within the Riosa Road interchange.

Although there are more acres of vernal pools within the Wise Road four-mile circle that could potentially be indirectly impacted by the bypass and growth of the City of Lincoln, the acquisition of conservation easements within the Coon Creek and Wise Road intersection area would prohibit the majority of potential indirect impacts from occurring. These easements would become part of the project description and acquisition would occur in coordination with Placer Legacy, EPA, ACOE, the City of Lincoln, and Placer County.

The area that has the largest intact disked or disturbed vernal pool/vernal swale habitat is located west of the proposed annexation area and will remain in the county and zoned for agriculture uses. A portion of that area is owned by P & F Investment Company.

The most common type of vernal pool habitat within the four-mile circles is vernal pool/vernal swales that are disked or disturbed. The second most common type of vernal pool within the four-mile circle study area is the vernal pool/vernal swale complex unaltered pools. This type of vernal pool is predominately located along the existing SR 65. Please refer to Figure 4 for exact locations.

Cumulative Impacts

The Council on Environmental Quality (CEQ) guidance defines cumulative effects as "the impact on the environment which results from the incremental impact of the action when added to other past, present and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions" (40 CFR § 1508.7). Environmental cumulative effects occur when the environment does not have enough time to recover to its original condition before another outside action takes place to affect the environment.

The resources that will be discussed for the cumulative impact analysis include agricultural land, wildlife habitat, and wetlands. The term ***Direct*** used in the tables represents the direct impacts associated with the bypass; the term ***Cumulative*** includes direct impacts and impacts associated with development in the project area where the information could be

obtained. This cumulative analysis does not include indirect impacts due to the inability to directly link indirect impacts to the bypass and to determine the amount of impact caused by the bypass alone.

When the proposed project is considered with other reasonably foreseeable projects, cumulative impacts to some resources will be more severe than impacts to those resources caused by the highway project alone. The EIR for the Placer County General Plan Update concluded that impacts in eight major areas; land use, traffic congestion, cultural resources, loss of farmland, loss of agricultural production, habitat conversion and habitat quality reduction, increase in air pollutant emissions and traffic noise, taken as a whole, would result in potentially significant adverse impacts to land conversion and habitat quality reduction, and cause an increase in air pollutant emissions and traffic noise. The following tables list transportation projects that are planned or are currently taking place.

Transportation Projects in Study Area

A number of highway improvement projects are proposed within the project area and address existing congestion and safety concerns while providing for inter-regional transportation needs. These improvements may facilitate planned development in some areas, but are not expected to accelerate conversion of agricultural and other open space lands to developed uses except where this conversion is already occurring and planned for (e.g., Lincoln). The proposed road improvements are needed to keep pace with local and regional development conditions and prevent further deterioration of service levels and safety.

Table 6 Transportation Projects in Area

	County	**Year Constructed**
SR 65 Improvement from Roseville to Industrial Ave.	Placer	1997
Blue Oaks Interchange	Placer	1998
SR 193 improvements	Placer	1999
Future Improvements to the State Highway System		**Year Proposed**
Wheatland Bypass	Sutter/Yuba	2006
SR 70, McGowen to Striplin widening	Sutter/Yuba	2005
SR 99 Improvements	Sutter	2003
Third River Crossing	Yuba	2004
Marysville Bypass	Yuba	2005
Placer Parkway *Not part of the State Highway System	Placer	Not determined

The table represents State and Local priority projects that address growth, congestion and safety in the region. Senate Bill (SB) 45 redistributed STIP monies so that the Regional Transportation Planning Agencies (RTPA) and Metropolitan Planning Organizations (MPO) get 75% for regional use and the Department gets 25% for inter-regional use. In addition, SB 45 dictates how the Department prioritizes its funds on the inter-regional transportation system by amending Section 167 of the Streets & Highways Code to read:

167. (a) Funds in the State Highway Account in the State Transportation Fund shall be programmed, budgeted subject to Section 163, and expended to maximize the use of Federal funds and shall be based on the following sequence of priorities:

- Operation, maintenance and rehabilitation of the state highway system.
- Safety improvements where physical changes, other than adding additional lanes, would reduce fatalities and the number and severity of injuries.
- Transportation capital improvements that expand capacity or reduce congestion, or do both.
- Environmental enhancement and mitigation programs.

As a result of SB 45, the authority over how the majority of transportation dollars are spent is in the control of the regional planning agencies. It is the Department's mission to respond to a clearly demonstrated need, safety and highway maintenance or congestion relief, in that order. This legislation has made it clear that the Department's responsibility is to the inter-regional transportation system and the locals will maintain responsibility for local transportation systems. It should be also noted that the responsibility of determining land use lies in local governments hands.

Development in project area

The following table shows specific plans in the study area. These Specific Plans were used because they encompass many development activities within them. For example, Twelve Bridges Specific Plan includes Del Webb, East Ridge and East Lake plans.

Table 7 Summary of Lincolns' Specific Plan

Specific Plan	Total Acres	Residential Units	Population	Commercial acres	Industrial/ Business Park acres	Institutional acres[1]	Open Space acres
Twelve Bridges	5,985 ac	11,231	20,215	130 ac	71 ac	110 ac	2,515 ac
Lincoln Crossing	1,069 ac	2,958	8,459	43.2 ac	--	--	2,331 ac
Three D	70 ac	332	949	--	--	13 ac	16 ac
Laehr Estates	10 ac	53	151	--	--	--	--
Joiner Ranch	303 ac	1,756	5,022	28.1 ac	44.0 ac	13.0 ac	13.0 ac
Foskett Ranch	291 ac	501	1,432	--	13.1 ac	58.3 ac	123 ac
Air Center	640 ac	1,809	5,173	9.2 ac	295 ac	91 ac	19 ac
Lincoln Gardens	16 ac	64	183	--	--	--	--
Sterling Point	76 ac	--	--	56 ac	--	--	14 ac
Total	**8,460 ac**	**18,704 units**	**41,584 people**	**266 ac**	**423 ac**	**272 ac**	**5,031 ac**

Note: Population was determined using a population per household multiplier of 1.8 for Del Webb and 2.86 for all other projects.
[1] Acreage that includes public or quasi-public facilities
Source: General Plan Background Report 12/9/02

Habitat Conversion in Placer County

The Placer County General Plan (Placer County, 1994) identifies the predictable effects of planned growth within the county. Development under the Land Use Element described in the General Plan could result in a population increase of 45,000 over the 1990 baseline population. Most of this increase takes place in southern Placer County. The following table illustrates the conversion of natural habitat to urban development for the entire county based on the predicted 2010 scenario.

Table 8 Habitat Conversions for Placer County (2010 Scenario)

	Approximate extent of intact vegetation		Habitat Conversion		Habitat conversion or reduced habitat value		Limited habitat impacts	
Vegetation Communities ▼	Vegetation communities in unincorporated areas (1991)		Planned urban development in unincorporated areas		Planned urban, suburban and rural residential development in unincorporated areas		Existing and planned recreational, agricultural and forestry land uses in unincorporated areas	
Urban/ agriculture/ rangeland	*152,960 ac*	100%	*7,200 ac*	4.7%	*42,360 ac*	27.7%	*103,400 ac*	67.6%
Grassland	*29,000 ac*	100%	*3000 ac*	10.3%	*2,000 ac*	6.9%	*24,000 ac*	82.8%
Oak woodland	*29,000 ac*	100%	0	0.0%	*4,000 ac*	13.8%	*25,000 ac*	86.2%
Conifer forest	*462,000 ac*	100%	0	0.0%	*47,000 ac*	10.2%	*415,000 ac*	89.8%
Hardwood forest	*10,300 ac*	100%	0	0.0%	*7,000 ac*	6.8%	*96,000 ac*	93.2%
Chaparral/shrub	*56,000 ac*	100%	0	0.0%	*3,000 ac*	5.4%	*53,000 ac*	94.6%

Lincoln Bypass Draft Environmental Impact Statement/Report, 2001.

Preservation as a condition of development

Subsequent to the preparation of the City of Lincoln General Plan in 1988, new development has occurred consistent with General Plan designations. These projects generally include open space dedications to preserve areas of vernal pools, riparian corridors or other high quality resources and compensatory mitigation measures to offset unavoidable impacts to wetlands. The Lincoln General Plan recognizes Auburn and Markham Ravines as important open space resources, and both corridors are designated for preservation.

Farmland Cumulative Impacts

Sacramento Valley has been experiencing substantial urban development that has resulted in loss of farmland. The State of California has experienced a 13.8 percent increase in population from 1990 to 2000 and the ten counties in the Sacramento Valley have grown by 18.4 percent. Between 1992 and 1998, the California Department of Conservation Trust estimates that the valley experienced a loss of over 41,000 acres of farmland.

Growth within the project area is expected to continue to be concentrated primarily around existing developed communities. However, the farming population is aging, and for economic reasons, farmland is increasingly sold to land developers or speculators rather than kept in agricultural production by younger generations.

Urban growth can increase the rate at which Placer County agricultural lands are converted to non-agricultural uses, especially in western Placer, where large parcel sizes and proximity to Sacramento has made the area a prime target for new residential development. Land speculation in this area drive up land values and may reduce the economic viability of agricultural production. (Placer Legacy Open Space and Agricultural Conservation Program, May 15, 2000)

Due to the growth pressures and development that has been occurring, preservation of agricultural lands is one of the primary planning goals of the County and to some extent, the City of Lincoln. It appears that, at least for the foreseeable future, agricultural uses will continue to dominate. However, loss of farmland continues as housing tracts replace small farms. Table A, attached to this document, shows Placer County's land use conversion from 1998 to 2000. Total Prime farmland converted to other uses is 696 acres and there have been 8,064 acres of total farmland of local importance converted to other uses.

The Placer County General Plan EIR identified the cumulative direct conversion of farmlands in Placer County as significant and unavoidable because the build out under the General Plan land use diagram would result in the direct conversion of 6,340 acres of farmland in Placer County, including 840 acres of prime farmland, by the year 2010.

Information on impacts to agricultural lands from major development projects in the study area was obtained from project environmental documents. Not all the environmental documents were available, and some did not describe the agricultural impacts, so the following information is an estimate. The total farmland affected by all the projects in the area total approximately 1,700 acres. Approximately 42.2 percent of the study area for the bypass is classified as agricultural land. The total acreage identified in the revised alternative analysis prepared by LSA for Caltrans determined that 234.1 acres within the study area devoted to agricultural uses.

The farmland area within the four-mile circles is 26,719 acres. This figure includes 3,398 acres of prime farmland acres, 833 acres of statewide importance, 2,706 acres of unique farmland, 12,534 acres of local importance and 1,441 acres of other land that includes low-density rural development (See Figure 2)

Table 9 Agriculture Total Estimated Impacts

Direct	234 acres
Impacts from other projects within area	1,700 acres
Cumulative	1,934 acres

Riparian Woody/Non-Riparian Woody Habitat Cumulative Impacts

According to estimates there is only five to six percent of historic riparian habitat intact in Placer County, much of it lost to urbanization and other factors. Information on riparian habitat impacts from major development projects in the study area was obtained from project environmental documents. Not all the environmental documents were available, and some did not describe the riparian habitat impacts, so the following information is an estimate.

According to the project environmental documents that were obtained, impacts to this resource are approximately 14.2 acres.

The direct impacts associated with the bypass amount to a total of 11 acres and the area within the four-mile circle that could potentially be impacted by both the bypass and other development activities include 188 acres of riparian woody and 389 acres of non-riparian acres. (See Figure 3)

Table 10 Riparian/Non-Riparian Woodlands Total Estimated Impacts

Direct	11.0 Acres
Impacts from other projects in area	14.2 Acres
Cumulative	25.2

Wetland/Vernal Pool Cumulative Impacts

Although there is agreement that vernal pool loss is occurring due to urbanization and other factors, the exact amount of this loss has been debated. Vernal pool habitat loss in the Central Valley was estimated in the 1970's to be around 67 to 88 percent (Holland 1978, and Robert Holland, consultant, in litt. 1992). According to the Federal Register (March 26, 1997) on EPA's website these figures have been disputed and the estimates changed to 50 percent (59 FR 48139; R. Holland, pers. comm. 1996).

A baseline measurement was never obtained and vernal pool inventory has been done on a project-by-project basis. Mapping obtained from the Department of Fish and Game and Placer County shows that most of the vernal pools in the project area have been disturbed in some fashion, due in part to agricultural uses in the project area.

Specific Plan environmental documents obtained from projects listed in Table 7 total the impacts to vernal pools to 19.61 acres, 7.91 acres of seasonal marsh and 1.76 acres of open water are also impacted. One of the environmental documents did not break down the acreages but did calculate a total wetlands impact area to 36.1 acres. These projects include projects that are planned, in construction or have recently been built.

The direct impacts from the bypass total 5.5 acres of vernal pools and swales, and 13.6 acres of jurisdictional waters. A total of 4,038 additional acres that represent all wetland types in the project area are within the four-mile circles that could potentially be impacted by future development. (Figure 4).

Table 11 Vernal Pools/Wetland Estimated Cumulative Impacts

	Vernal Pools	Seasonal Marsh/ Swales	Open Water/ Jurisdictional Waters	Combination[1]	Total Impact
Direct	5.5 ac	--	13.6 ac		**19.1 ac**
Impacts from projects within area	19.61 ac	7.91 ac	1.76 ac	36.1 ac	**65.4 ac**
Cumulative	25.1 ac	7.91 ac	15.36 ac	36.1 ac	**84.5 ac**

[1]Represents combination of vernal pools, seasonal marsh/swales and open water.

Conservation Planning

Placer Legacy Habitat Conservation Plan for Placer County

Description

The concern over development pressure that will be occurring over the next 20 years and the possibility of losing Placer County's natural resources prompted the creation of Placer Legacy. The Placer Legacy was established in 1998, using three working groups to provide input from a variety of stakeholders. These groups consisted of a Citizens Advisory Committee, an Interagency Working Group and a Scientific Working Group. Placer Legacy has identified county trends, resource conflicts and possible strategies to address growth pressures. Strategies currently being pursued are land acquisitions and easements, agency coordination, education and incentives. In November of 2002, Placer Legacy was actively negotiating purchases with property owners for approximately 1,300 acres of conservation easements west and north of the proposed Lincoln Bypass to limit growth-inducing impacts. That number has risen to 2,060 acres of land protected in the Sierra Nevada, Sierra Nevada foothills and Central Valley. In addition, the Placer Legacy is involved in the Miners Ravine Restoration project at the Miners Ravine Reserve site in Granite Bay, the Auburn Ravine/Coon Creek Ecosystem Restoration Plan and the American River Fuel Load Reduction Plan as well as engaging in ongoing coordination with the Agricultural Commissioner's Office on matters related to agricultural conservation.

Funding

Placer Legacy's funding comes from a variety of sources including grants, general funds, mitigation funds, donations, acquisition funds, resource agencies and other miscellaneous sources. Voters defeated a ¼ cent sales tax proposed to provide a secure source of funding for Placer Legacy. However, the County and Placer Legacy are initiating a public outreach program in order to promote the Placer Legacy in the community with the goal of re-introducing the measure to the voters.

Timeframe

Placer Legacy is working on Placer County's Habitat Conservation Plan (HCP) and a Natural Communities Conservation Plan (NCCP) was completed in 2004. This Plan will be implemented in phases. The first phase is to gather information on vernal pools/grasslands, valley riparian habitats and salmon habitat in the areas within Western Placer County. Phase two will be to collect that information for the Foothills and the East Side Sierra Nevada and the third phase will focus on the west and east Sierra Nevada. Once resources have been identified, the HCP/NCCP will be prepared with guidance from various stakeholders such as the scientific community, land development interests, the environmental community and agricultural interests. A scientific working group will continually provide advice and assistance to ensure that the program incorporates sound principles of conservation ecology. These plans will establish a conservation strategy to ensure that resources are protected from development. In addition, financial mechanisms will be analyzed to determine how to

implement these plans. The City of Lincoln is a member of Placer Legacy and will be participating in programs that will provide for conservation of prime agricultural lands in addition to conservation easements within their jurisdiction.

Placer Legacy's activities may minimize some of the potential growth inducement effects being attributed to this project and the growth that is occurring in Lincoln. Caltrans has worked in partnership with Placer Legacy to create Aitken's Ranch, which is being used as mitigation for the proposed project.

Other Preservation Measures

The Aitken Ranch Mitigation Site was established by a Wildlands Inc., a private habitat development company, to mitigate impacts to biological resources occurring as a result of land development in Placer County. The 317-acre property west of Lincoln, CA, features 21.16 acres of vernal pools/swales, 18 acres of riparian wetlands, 20 acres of valley oak woodlands, 177 acres of grasslands, 16.38 acres of emergent marshes/open water and 47.5 acres of riparian oak woodland. The mitigation site is bisected by the Auburn Ravine for more than a mile. Caltrans purchased these mitigation values to offset impacts which will occur as a result of the proposed project and thereby ensure that these resources are protected. This mitigation site is now functioning and will be self-sustaining before the project begins construction.

Other conservation/preservation efforts in the area include Auburn Ravine and Coon Creek restorations and other preservation activities. Since 1998, the County has been awarded almost $4.5 million in State, Federal and private-sector grants for land acquisition, habitat restoration and planning work. Much of this funding is directed at improvements to seven watersheds in western Placer County.

A private property owner just recently began working with California Conservation Fund to purchase and establish 330 acres of preserve outside of Lincoln located at North Dowd and Waltz roads in Sheridan, near Coon Creek and next to the 1,000 acre Lakeview Farms Hunting and Fishing Preserves. This project is a proposal to establish ponds and other habitat for wildlife creating a wetland project that would incorporate training of hunting dogs.

Options Considered to Address Potential Indirect and Cumulative Impacts

Option 1. Overcrossing at Wise Road with Initial Project Construction

Construction of an overcrossing at Wise Road in the initial project would preclude any local access at that point. However, this option would also remove access that Placer County and the City of Lincoln had anticipated to detour large numbers of trucks hauling aggregate and other materials around the city rather than through downtown Lincoln. Trucks using the Wise Road/Bypass routing rather than existing SR65 through Lincoln will measurably improve the quality of life for Lincoln residents long tired of the pedestrian and traffic safety issues, noise, dust and damage to streets caused by aggregate haulers rumbling through town. For this reason, the City, County and PCTPA are strongly opposed to this option.

Option 2. Establishment of a Large Floodplain Easement to the east of Wise Road (Figure 6)

This option examined a possible lowering of the Bypass roadway profile and reduction of the bridge structure length, using any attendant cost savings to purchase a large floodplain easement in one quadrant of the Wise Road intersection. The 100-year flood event was modeled at this location and it was determined that approximately 80 acres would be required for the floodplain easement. This proposed floodplain easement at Wise Road would likely prevent potential indirect impacts. However, since this would be primarily a detention basin caused by the filling of the Coon Creek floodplain, the basin itself would be considered a negative rather than a positive impact on the Coon Creek watershed.

Option 3. Purchase of Easements on the Four Quadrants of the Bypass/Wise Road Bypass Intersection

To address EPA's concerns about indirect affects attributable to the proposed access at Wise Road, Caltrans examined an option that appeared to directly focus on the intersection location. This option would acquire conservation easements in each of the four quadrants of the Wise Road/Bypass intersection, not to exceed a total cost of $500,000, thereby effectively preventing growth inducing developments from occurring in that immediate vicinity.

Option 4. Elimination of Proposed Undercrossing at Dowd Road and Road Modifications to Accommodate an Initial Overcrossing at Wise Road (Figure 7)

EPA suggested that Caltrans examine this option to see if enough cost savings could be generated by eliminating the proposed undercrossing structure at Dowd Road from the project design, and applying those savings to construction of an overcrossing at Wise Road. Elimination of the Dowd Road structure would necessitate either realignment of heavily used Dowd Road or construction of frontage roads. Because of those additional modifications, there would not be adequate cost savings from this option. The access issues discussed under Option 1 above would also be the same with this option, with the same strong level of local and regional opposition to loss of access at Wise Road.

The figure represents a preliminary design modification of Dowd Road that would require a ninety-degree alignment with the bypass. This 90-degree alignment with the overcrossing and an embankment is needed before a turn or curve is introduced. There are restrictions to introducing turns or curves into a design and this was taken into account for the preliminary design concept. Also, a minimum curve radius was created according to the speed of traffic required by the local agencies.

Option 5. Purchase of Conservation Easements within the Coon Creek Watershed Designated in the two-mile Radius of Wise Road (Figure 8)

In a May 29, 2003 meeting, Caltrans and EPA discussed the possibility of conservation easements for protecting Coon Creek in the vicinity of Wise Road. Caltrans asked EPA to provide suggestions on the dimensions of an area along Coon Creek that could be protected as

an alternative to constructing the overcrossing at Wise Road. EPA suggested that Caltrans map the Coon Creek watershed, including a five hundred foot buffer on either side of the watershed, within a two-mile radius of the Wise Road/Bypass intersection. The mapped watershed, including buffers on the north and south sides of the watershed, total 5,206 acres. At a cost of several thousands of dollars per acre to secure easements, this option would cost in the tens of millions of dollars, and is clearly not a viable option. Caltrans understands that EPA intended this option to be more of a means of gauging the extent of watershed and possible aquatic resources lying within a two-mile radius of Wise Road, rather than outright acquisition of easements on the entire 5,206 acres.

Option 6. Purchase of Conservation Easements along the Coon Creek Watershed Corridor (Figure 9)

Since Option 5 is cost prohibitive, Caltrans investigated a more realistic but still meaningful level of effort to acquire conservation easements in the Coon Creek watershed. Figure 6 illustrates the efforts currently underway by Placer Legacy in working with the private sector to establish other conservation easements within this watershed. An opportunity may be present to link these other easements with a linear pattern of conservation easements that would provide synergies and cumulative benefits to the entire watershed area in question. Caltrans will continue to work closely with Placer Legacy, EPA and the Corps to implement this option.

Further discussion between Caltrans, EPA and FHWA on June 6, 2003 of Options 1 and 6, determined that in lieu of constructing an initial overcrossing at Wise Road (Option 1), Caltrans would commit to acquiring conservation easements in the Coon Creek watershed/floodplain equivalent to the approximate cost of constructing the overcrossing structure. This cost is an estimate based upon preliminary design concepts for the project and is computed as follows:

- 1,800 square meters of bridge structure at $900 per square meter = $1.6million.
- 13,000 square meters of pavement structural section at $40 per square meter = $0.50million.
- 200,000 cubic meters of embankment material at $9 per cubic meter = $1.8million.

Total approximate cost is equal to $3.9 million

The conservation easements would demonstrate concern of potential indirect affects to aquatic resources that might otherwise be attributable to provision of access at the Wise Road intersection. An acquisition strategy will be included in the project description and outlined in the Final EIR/S.

These conservation easements are generally a type of land use restriction that limits the property owner's use of property burdened by the easement. Only uses that are consistent with

the terms and conditions of the easement are permitted. These instruments tend to be very detailed by their very nature and require careful crafting and legal review to ensure the intent of parties in creating the easement. Grantor and grantee rights would be described in substantial detail. The terms of the easement include identification of the property subject to the easement; the specific aspects of the property that is being preserved (examples include major habitat, aesthetic value, scenic value, agricultural uses, etc.); the land uses that would likely be compatible with the easement (together with uses that are not compatible). Additional terms might cover enforcement of terms and conditions, remedies for violation of the easement provisions, possibly provide for a specific management plan for the site, assignment and amendment terms and other considerations. A willing party to be the owner of the easement would also need to be identified (usually a public agency). All of these aspects would need to be specified in the grant of easement document.

Conclusion

The City of Lincoln has experienced rapid growth in the last few years and is planning to continue to grow at a similar pace. This growth is desired by the City and accounted for in their General Plan. When considering the many projects within the Study area, there may be an overall significant cumulative impact on farmland and natural resources. However, the cumulative and indirect impacts in the study area are not specifically attributable to the proposed project. It is also attributable to growth that is planned and projected for the city.

Programs such as Placer Legacy and the Habitat Conservation Plan development could minimize some impacts of this growth. In addition, each individual transportation and development project will provide for mitigation of their impacts to natural resources. Impacts to ACOE jurisdictional wetlands would require consultation, mitigation and ultimate approval from the ACOE. Wetlands, vernal pools and riparian habitat are generally mitigated to the ACOE's no-net-loss policy.

The planned and projected growth, the policies regarding land use, the potential preservation and conservation, housing prices and location attractiveness all contribute to the impacts associated with growth. This analysis discloses resource information and provides a summary of options that Caltrans has considered to avoid or minimize potential indirect and cumulative impacts that may occur due to the project. Finally, Caltrans has committed to the acquisition of conservation easements in the Coon Creek watershed/floodplain equivalent to the approximate cost of constructing an overcrossing structure at Wise Road. The conservations easements would demonstrate concern of potential indirect affects to aquatic resources that might otherwise be attributable to provision of access at the Wise Road intersection. This avoidance strategy of acquiring conservation easements will be incorporated in the project description in the Final EIR/S.

Resources

The following references were used as resources in developing the Indirect and Cumulative Impacts analysis:

- Q & A Regarding the Consideration of Indirect and Cumulative Impacts in the NEPA process. (FHWA, January 2003)
- Land use Impacts of Transportation, A Guidebook. NCHRP Report 423A.
- A Guidebook for Evaluating the Indirect Land Use and Growth Impacts of Highway Improvements. (Oregon Dept. of Transportation, April 2001)
- Considering Cumulative Effects. (Council on Environmental Quality, January 1997)
- NCHRP Report 466 Desk Reference for Estimating the Indirect Effects of Proposed Transportation Projects (Transportation Research Board 2002)
- City of Lincoln General Plan Updates, 2001
- Do Highways Matter? Evidence and Policy Implications of Highways' Influence on Metropolitan Development Prepared for The Brookings Institute, August 2000
- Road Expansion, Urban Growth, and Induced Travel: A Path Analysis: Robert Cervero Department of City and Regional Planning Institute of Urban and Regional Development, University of California, Berkeley, July 2001
- Interim Guidance: Questions and Answers Regarding Indirect and Cumulative Impact Considerations in the NEPA Process, FHWA, January 31, 2003
- Community Development: Local Growth Issues? Federal Opportunities and Challenges Appendix VII: The Influence of Federal Infrastructure Programs on Local Growth; Appendix X: Federal Policy Options; Appendix XII: Comments from the Environmental Protection Agency U.S. General Accounting Office, Report to General Requesters, September 2000
- A Guidebook For Evaluating The Indirect Land Use and Growth Impacts of Highway Improvements, Final Report, ECO Northwest and Portland State University for Oregon DOT and FHWA, April 2001
- Consideration of Cumulative Impacts in EPA Review of NEPA Documents, U.S. Environmental Protection Agency, Office of Federal Activities, May 1999

Contacts

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- Placer County Transportation Planning Agency
- City of Lincoln, Rod Campbell, Community Development Director
- Placer County Planning Department, Loren Clark and Kelly Berger

- Office of Planning and Research, Scott Morgan
- U.S. Environmental Protection Agency; Nancy Levin, Tim Vendlinski, Erin Foresman
- California Department of Fish and Game; Joe Carboni, GIS Analyst

Attachment A

PLACER COUNTY

1998-2000 Land Use Conversion

CALIFORNIA DEPARTMENT OF CONSERVATION
Division of Land Resource Protection

Farmland Mapping and Monit

PART I
County Summary and Change by Land Use Category

LAND USE CATEGORY	TOTAL ACREAGE INVENTORIED		1998-00 ACREAGE CHANGES			
	1998	2000	ACRES LOST (-)	ACRES GAINED (+)	TOTAL ACREAGE CHANGED	NET ACREAGE CHANGED
Prime Farmland	9,750	9,901	696	847	1,543	151
Farmland of Statewide Importance	5,195	5,312	769	886	1,655	117
Unique Farmland	22,727	23,616	1,679	2,568	4,247	889
Farmland of Local Importance	114,452	111,987	4,920	2,455	7,375	-2,465
IMPORTANT FARMLAND SUBTOTAL	152,124	150,816	8,064	6,756	14,820	-1,308
Grazing Land	31,695	29,656	3,996	1,957	5,953	-2,039
AGRICULTURAL LAND SUBTOTAL	183,819	180,472	12,060	8,713	20,773	-3,347
Urban and Built-Up Land	37,608	41,448	2,633	6,473	9,106	3,840
Other Land	185,057	184,585	3,163	2,691	5,854	-472
Water Area	5,047	5,026	69	48	117	-21
TOTAL AREA INVENTORIED	411,531	411,531	17,925	17,925	35,850	0

PART II
Land Committed to Nonagricultu

LAND USE CATEGORY
Prime Farmland
Farmland of Statewide Importance
Unique Farmland
Farmland of Local Importance
IMPORTANT FARMLAND SUBTOTAL
Grazing Land
AGRICULTURAL LAND SUBTOTAL
Urban and Built-Up Land
Other Land
Water Area
TOTAL ACREAGE REPORTED

PART III Land Use Conversion from 1998 to 2000

LAND USE CATEGORY		Prime Farmland	Farmland of Statewide Importance	Unique Farmland	Farmland of Local Importance	Subtotal Important Farmland	Grazing Land	Total Agricultural Land	Urban and Built-Up Land	Other Land	Water Area
Prime Farmland (1)	to:	--	28	130	447	605	0	605	52	39	0
Farmland of Statewide Importance (1)	to:	72	--	213	162	447	48	495	4	270	0
Unique Farmland (1) (2)	to:	99	259	--	1,100	1,458	2	1,460	12	207	0
Farmland of Local Importance (3)	to:	560	337	1,965	--	2,862	205	3,067	1,253	600	0
IMPORTANT FARMLAND SUBTOTAL		731	624	2,308	1,709	5,372	255	5,627	1,321	1,116	0
Grazing Land	to:	0	31	8	181	220	--	220	3,387	376	13
AGRICULTURAL LAND SUBTOTAL		731	655	2,316	1,890	5,592	255	5,847	4,708	1,492	13
Urban and Built-Up Land (4)	to:	4	10	23	122	159	1,281	1,440	--	1,193	0
Other Land	to:	112	221	229	443	1,005	358	1,363	1,765	--	35
Water Area (5)	to:	0	0	0	0	0	63	63	0	6	--
TOTAL ACREAGE CONVERTED	to:	847	886	2,568	2,455	6,756	1,957	8,713	6,473	2,691	48

Notes to the Reader:

(1) Conversions between Important Farmland categories primarily due to corrections made to soil unit identification throughout the county.
(2) Conversion to Farmland of Local Importance primarily due to land left idle for three update cycles and refinements to agricultural boundaries.
(3) Conversion to Unique Farmland primarily due to new irrigated agriculture and refinements to agricultural boundaries.
(4) Conversion from Urban and Built-Up Land primarily the result of refinements made to the urban boundary around Roseville, Rocklin and Lincoln.
(5) Conversion to Grazing Land primarily due to refinements made to North Fork Lake and Rock Creek Lake.

Final Environmental Impact Statement/Report

Lincoln Bypass
Placer County,
State Route 65

KP R19.3/R38.3
PM R12.0/R23.8

May 2006

May 2006

Report Number: FHWA-CA-EIS –01-05-F

SCH Number 199090020626
03-PLA 65, KP R19.3/R38.3
(PM R12.0/R23.8)
03-173-333800

Construct four lanes on new right of way
In Placer County,
South of Industrial Avenue to Riosa Rd.

Final Environmental Impact Statement

Final Environmental Impact Report

Submitted Pursuant to:

National Environmental Policy Act, 42 U.S.C. 4332(2)(c)
And the California Environmental Quality Act, Div. 13, Public Resources Code
By the
U.S. Department of Transportation, Federal Highway Administration
&
the State of California, Department of Transportation

Cooperating Agencies:
U.S. Army Corps of Engineers
U.S. Fish and Wildlife Service

Date	Jody Jones, Director, District 3 California Department of Transportation	Date	Gene K. Fong Division Administrator Federal Highway Administration

The NEPA review period for this document closes on {date}. The following persons may be contacted for additional information concerning this document.

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ABSTRACT: The FHWA and Caltrans propose to construct a four-lane freeway around the city of Lincoln, in Placer County, from south of Industrial Blvd to north of Riosa Rd. The purpose of the project is to alleviate congestion and improve safety within the city of Lincoln and provide for inter-regional movement of goods and services. Seven alternatives were evaluated, including the "No Build" alternative. The D 13 North Modified is the preferred alternative. The estimated cost of this project is between $210,000,000-240,000,000.

The D 13 North Modified alternative will affect vernal pool fairy shrimp and tadpole shrimp, Swainsons' hawk, valley elderberry longhorn beetle and numerous large oak trees, vernal pool habitat and agricultural land. The proposed preferred alternative will affect 8 residences and 234 acres of farmland and 13.6 acres of ACOE jurisdictional wetlands or waters of the U.S.

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S.1 Project Purpose & Need

The California Department of Transportation (Caltrans) and Federal Highway Administration (FHWA) propose to construct a four-lane freeway around the City of Lincoln, in Placer County (see Figure i, ii and iii). The project begins 0.3 km (0.5 mi) south of Industrial Avenue and ends near Riosa Road. A map showing the alternatives is presented in Chapter 2 (See Figure 2-1). Seven alternatives were evaluated in the Draft Environmental Impact Statement/Report (EIS/R); the AAC2, A5C1 (AC alternatives), D1 and D13, D13 South Modified, D13 North Modified (D alternatives) and the "No Build" alternative. The last two alternatives, D13 South Modified and D13 North Modified, were developed in response to information gathered at the Public Open House held on September 22, 1999.

A number of additional alternatives were also evaluated, but withdrawn from consideration for various reasons. These are discussed at the end of Chapter 2.

Approval of this Final EIS/R and the subsequent Record of Decision (ROD) issued by the FHWA and Notice of Determination (NOD) issued by Caltrans would allow for the acquisition of right-of-way for the ultimate four-lane freeway and provide for approval and construction of freeway and interchange locations.

During the public circulation of the Draft EIS/R, an open house was held on December 18, 2001. Over 300 people attended and there were 176 comments received on the Draft EIS/R. These comments and responses can be found in Appendix K.

The purpose of the project is to relieve congestion and improve safety on existing State Route (SR) 65 in the vicinity of the City of Lincoln and provide for a regional traffic solution to accommodate projected traffic volumes for the year 2025. Traffic studies were completed with the 2025 design year in mind.

Continuing planned growth in south Placer County and the Sacramento Valley has resulted in the need for a new and improved SR 65 corridor, which would alleviate congestion in the City of Lincoln while providing for improved inter-regional traffic flow. The existing facility through Lincoln is a "Main Street" highway, which will not serve the ultimate transportation needs of the region. Due primarily to congestion, the collision rate in downtown Lincoln is higher than the Statewide average rate for this type of facility. SR 65 south of Lincoln and within downtown Lincoln currently exceeds available capacity.

The proposed project is partially funded and is programmed in the SACOG Metropolitan Transportation Plan (MTP) 2027 which was found to conform by the SACOG Board on March 16, 2006, and FHWA and FTA adopted the air quality conformity finding on April 20, 2006. The project is also included in the SACOG's financially constrained 2004-2006 MTIP, which was found to conform by FHWA and FTA on April 20, 2006. This proposed project's preferred alternative design, concept and scope are consistent with the above-mentioned documents, the 2004 STIP, and the proposed 2006 STIP.

In order for the project to be included in the MTIP, it must be in conformance with air quality standards and must meet certain criteria. This project has been analyzed and will not significantly change the air quality in the City of Lincoln.

S.2 Brief Description of Project

The six build alternatives are of various lengths, ranging from 18.6 km to 20.6 km (11.6 to 12.8 miles). They are shown in Figure 2-1 and described in Chapter 2.

The project begins just south of Industrial Avenue (KP R19.3 [PM R12.0]) and ends near Riosa Road (KP R38.3 [PM 23.8]). All the "Build" alternatives begin at the same location and meet existing SR 65 at slightly different locations between Dowd Road and the Bear River near Riosa Road. All of the alternatives descriptions begin on the south end of the project and are described south to north.

Due to funding constraints, the proposed preferred alternative would be built in stages: The minimum project staging includes a four-lane expressway commencing just south of Industrial Avenue proceeding to the north to Nelson Lane. A partial interchange would be constructed at Industrial Avenue. North of Nelson Lane a two-lane facility would be constructed. At-grade intersections would be constructed at Nelson Lane, Wise Road and Riosa Roads for the first phase. As traffic congestion increases, additional lanes and interchanges would be constructed. The northbound roadbed will be constructed initially and operated as a two-lane conventional highway from Nelson Road to the tie in with existing SR 65, until future construction provides for the parallel roadbed. Right-of-way would be acquired for the entire project during the first phase.

Possible temporary construction activities that will occur include constructing a temporary detour road in the median of the existing freeway right of way at the beginning of the project near Industrial Avenue. The width of this road will vary from 0 m to 18 m (59 ft), with the average width being 11 m (36 ft), and will extend from PM 12.0 to PM 12.2 (near Industrial Avenue). The purpose of this temporary detour is to allow construction, while minimizing the impact on traffic. The temporary road construction

activities include excavation, placement of embankment, aggregate base, and asphalt concrete pavement. The detour road will be used for staging for a period of twelve to twenty four months. Temporary drainage features may be placed to accommodate detours. When the staging work is finished, this detour road will be removed.

S.2.1 Preferred Alternative D13 North Modified

Caltrans and FHWA determined, and the U.S. Environmental Protection Agency concurred on July 9, 2003 and the U.S. Army Corps of Engineers concurred on August 8, 2003, that the D13 North Modified alternative is the least environmentally damaging practicable alternative (LEDPA). The impacts to vernal pools and wetlands are comparable for all the alternatives. However, the A5C1 and AAC2 alternatives impact higher quality vernal pools than the D alternatives. In addition, the AC alternatives have a much greater community impact than the D alternatives. During the ten years between concurrence on the "range of alternatives" and the present, growth in Lincoln has continued. Several developments have been approved or are already built within the AC alignment. A recent count of residences affected by the project shows that the A5C1 alternative impacts 461 residents and the AAC2 alternative impacts 469 residents. See Table ii for a comparison of the alternatives.

All of the alternatives except the D13 North Modified require acquisition of property that is under a Wetlands Conservation Easement in the Wetlands Reserve Program (known as the USDA Wetland Conservation Easement throughout this document).

The cumulative and indirect impacts of the project are similar for all the alternatives. As indicated by both the City and County's general plans, it is apparent that the future land use of the study area has been established regardless of the location of the bypass. According to the comment letters received at the open house, the city planners and the residents of Lincoln are overwhelmingly in favor of the D13 alternatives and opposed to the AAC2 and A5C1 alternatives.

Project Description for the D13 North Modified Alternative

The Draft EIS/R for the SR 65 Lincoln Bypass Project evaluated the ultimate project, which includes a four-lane freeway with a partial interchange at Industrial Avenue and interchanges at Nelson Lane, Wise Road and Riosa Road. There will be an overcrossing at Nicolaus Road and a cul-de-sac at Moore Road and Dowd Road, neither of which will have access to the freeway.

Due to funding constraints, the ultimate project cannot be built immediately. Initially, four lanes will be constructed from the beginning of the project near Industrial Avenue to just north of the proposed North Ingram Slough Bridge. From that point on to where the Bypass would re-join existing SR 65 near Sheridan, only two lanes will be constructed and an over crossing at Nicolaus Road and a frontage road for Dowd Road. Right of way for the ultimate four-lane freeway will be purchased during the first phase due to the rising costs of right-of-way. The first phase of the proposed project also includes construction of an at-grade intersection at Nelson Lane, Wise Road, and Riosa Road.

Several options were considered to avoid potential indirect/secondary impacts stemming from the intersection, and later, interchange at Wise Road, to nearby aquatic resources; specifically the Coon Creek watershed. A conservation easement in the Coon Creek watershed, equivalent to the approximate cost of constructing an over crossing structure at Wise Road, is included in the project to address these concerns.

In addition, a 32.4 ha (80 ac) floodplain easement is proposed for the northeast quadrant of the Wise Road intersection to collect floodwater. The floodplain easement will allow the construction of a shorter bridge and a lowered roadway profile, saving the cost of additional fill. The floodplain easement will also prevent any development from occurring in that area.

S.3 Other Alternatives Considered

Fifteen distinct alternatives have been considered in addition to the "No Build" alternative. Of those 15, seven alternatives were evaluated in depth in the Draft EIS/R, including the "No Build," AAC2, A5C1, D1, D13 and D13 South Modified and the D 13 North Modified. In compliance with federal, state and local environmental regulations, existing wetland areas and environmental impacts associated with these seven alternatives were studied in detail. The D 13 North Modified appeared best meet the purpose and need. The remaining nine alternatives were previously eliminated from further study in the Draft EIS/R for a variety of reasons. These rejected alternatives and reasons for elimination are shown in Table i.

Table i Rejected Alternatives

ALTERNATIVE	REASON FOR ELIMINATION
AA	Would not alleviate traffic problems or accommodate future traffic demands. Would have greater impacts to existing and proposed dwellings.
A5	Would not alleviate traffic problems or accommodate future traffic demands. Would have greater impacts to existing and proposed dwellings.

ALTERNATIVE	REASON FOR ELIMINATION
A3	Would not alleviate traffic problems or accommodate future traffic demands. Alignment would close existing Lakeside Drive and disrupt existing subdivision.
A4	Would not alleviate traffic problems or accommodate future traffic demands.
D2	Would have greater impacts on dwellings, wetlands and vernal pools than the D1 alternative.
D13 Dowd Modified	Eliminated from further consideration due to the non-access controlled segment on Dowd Road, proximity to existing driveways and traffic safety and operations.
T	Would fail to meet regional traffic needs. Numerous cross-streets and driveways would remain and traffic congestion would increase.
E	This alignment would not meet the regional traffic demands and existing traffic patterns.
TSM (Transportation System Management)	The October 1995 Major Investment Study eliminated this alternative from further consideration.
AFD	Would require extensive frontage roads and right-of-way. The 1990 Stage II Project Work Program eliminated this alternative from further consideration.

S.3.1 No Build Alternative

The "No Build" alternative would be to not build the project. However, routine maintenance and operational improvements would continue. If the "No Build" alternative were chosen, congestion would continue in the City of Lincoln. The Level of Service would continue to be a LOS F within the city limits. The safety of the traveling public and the residents of the town would be compromised due to the continuing congestion.

S.4 Other Major Actions in the Project Vicinity

The transportation corridor between Sacramento and Yuba City is currently under scrutiny for improvement with a number of highway improvements being evaluated for the area. In the immediate vicinity, SR 65 is being improved with widening and interchanges from Roseville to Lincoln. The parallel routes of SR 99 and SR 70 also have improvements such as widening and the addition of interchanges proposed. The goal of Caltrans, SACOG and other agencies is to connect the Marysville/Yuba City area to the California freeway and expressway system. More information on this is offered in Chapter 1.

Other major non-transportation projects in the area include several residential developments such as Del Webb's Sun City Lincoln Hills, Lincoln Crossing, Foskett Ranch, Aitken Ranch, Three D, Sterling Pointe, and the Regional Wastewater Treatment Plant in Lincoln and Teichert Mining operation near Coon Creek. Tables 1-11 and 1-12 in Chapter 1 further describe these projects. Development of these and other areas at build-out could result in nearly 80,000 new residential units and associated commercial

development. Please see tables 1-11 and 1-12 in Chapter 1 for more information on development proposals in the Lincoln area.

S.4.1 Summary of Major Environmental Impacts

Table ii summarizes the potential environmental impacts of this project, including socioeconomic, cultural and natural resource impacts and funding. This table quantifies the impacts in each of these areas and puts these figures in table form for comparison.

Preliminary design information was used in Table ii to compare the impacts to natural resources. The same level of design was used for all the alternatives in order to provide an equal basis for comparing the alternatives. After receiving the Least Environmentally Damaging Practicable Alternative (LEDPA) concurrence from EPA and USACE, a higher level of design has been completed for just the preferred alternative. The increase in impacts is due to revised design information that was applied to the LEDPA and the application of FWS guidelines and recommendations regarding direct and indirect impacts. All of the other alternatives, if chosen as the LEDPA, would have increased impacts to resources with these revisions. The difference in resource impacts is displayed in Table iii. Only those impacts that have changed are listed in Table iii.

In addition to permanent impacts, there are temporary impacts that will occur during construction. These temporary impacts are as follows:

- Vernal and freshwater marsh habitats: 0.04 ha (0.09 ac)
- Other non-wetland waters: 0.15 ha (0.36 ac)
- Mixed riparian forest habitats: 1.52 ha (3.76 ac)

The project costs that are displayed in Table ii were based upon preliminary design data for the comparison of alternatives. The costs associated with the preferred alternative have been revised and are estimated to range from approximately $210 to $240 million. If any of the other alternatives had been preferred, detailed design and right-of-way data would have been applied and the associated costs would have increased accordingly.

Table ii Summary of Impacts

	A5C1 Alternative	AAC2 Alternative	D1 Alternative	D13 Alternative	D13 South Modified Alternative	D13 North Modified Alternative
Wetlands/ Non-wetland Waters	7.85 ha (19.4 ac) wetlands/waters 4.65 ha (11.5 ac) vernal pool/swale 2.59 ha (6.4 ac) of marsh Two high value vernal pool complexes	6.23 ha (15.4 ac) wetlands/waters 3.80 ha (9.4 ac) vernal pool/swales 1.83 ha (4.5 ac) of marsh Two high value vernal pool complexes	5.30 ha (13.1 ac) wetlands/waters 2.43 ha (6.0 ac) vernal pool/swales 2.38 ha (5.9 ac) of marsh One high value marsh	4.73 ha (11.7 ac) wetlands/waters 2.14 ha (5.3 ac) vernal pools/swales 2.22 ha (5.5) ac of marsh One high value marsh	5.91ha (14.6 ac) wetlands/waters 3.28 ha (8.1 ac) vernal pool/swales 2.22 ha (5.5 ac) marsh	5.50 ha (13.6 ac) wetlands/waters 2.23 ha (5.5 ac) vernal pools/swales 2.95 ha (7.3 ac) of marsh
Special Status Species	Vernal pool fairy shrimp, vernal pool tadpole shrimp, valley elderberry longhorn beetle, Swainson's hawk	Vernal pool fairy shrimp, vernal pool tadpole shrimp, valley elderberry longhorn beetle, Swainson's hawk	Vernal pool fairy shrimp, vernal pool tadpole shrimp, valley elderberry longhorn beetle, Swainson's hawk	Vernal pool fairy shrimp, vernal pool tadpole shrimp, valley elderberry longhorn beetle, Swainson's hawk	Vernal pool fairy shrimp, vernal pool tadpole shrimp, valley elderberry longhorn beetle, Swainson's hawk	Vernal pool fairy shrimp, vernal pool tadpole shrimp, valley elderberry longhorn beetle, Swainson's hawk
Natural Communities Wildlife, Fisheries	93.68 ha (231.5 ac) grasslands containing vernal pools 2.06 ha (5.1 ac) riparian forest 6.11 ha (15.1 ac) oak woodland	88.18 ha (217.9 ac) grasslands containing vernal pools 1.05 ha (2.6 ac) riparian forest 10.16 ha (25.1 ac) oak woodland	76.01 ha (187.8ac) grasslands containing vernal pools 1.13 ha (2.8 ac) riparian forest 0.4 ha (1.0 acre) oak woodland	70.05 ha (173.1 ac) grasslands containing vernal pools 1.21 ha (3.0 ac) riparian forest 3.28 ha (8.1 ac) oak woodland	76.65 ha (189.4 ac) grassland/ vernal pool 1.05 ha (2.6 ac) riparian forest 0.08 ha (0.2 ac) oak woodland	80.98 ha (200.1 ac) grassland/ vernal pool 1.213 ha (3.0 ac) riparian forest 3.28 ha (8.6 ac) oak woodland
Water Quality	202.92 ha (501.4 ac) footprint with 11 stream crossings	196.20 ha (484.8 ac) footprint with 11 stream crossings	195.79 ha (483.8 ac) footprint with 9 stream crossings	213.88 ha (528.5 ac) footprint with 9 stream crossings	210.28 ha (519.6 ac) footprint with 9 stream crossings	214.69 ha (530.5 ac) footprint with 9 stream crossings
Cultural Resources	Requires small amount of right-of-way from property eligible for National Register.	Requires small amount of right-of-way from property eligible for National Register. Impacts to recorded archeological site	Requires small amount of right-of-way from property eligible for National Register.	Requires small amount of right-of-way from property eligible for National Register.	Requires small amount of right-of-way from property eligible for National Register.	Requires small amount of right-of-way from property eligible for National Register.
Section 4(f) Use	Yes, *de minimis*	If the archaeological site is determined to require preservation in place, then this alternative would affect a Section 4(f) property.	Yes, *de minimis*	Yes, *de minimis*	Yes, *de minimis*	Yes, *de minimis*

	A5C1 Alternative	AAC2 Alternative	D1 Alternative	D13 Alternative	D13 South Modified Alternative	D13 North Modified Alternative
Agricultural Land	52.17 ha 128.9 ac	51.1 ha 126.3 ac	84.4 ha 208.5 ac	102.11 ha 252.2 ac	92.84 ha 229.4 ac	94.74 ha 234.1 ac
Hazardous Waste	Potential	Potential	Potential	Potential	Potential	Potential
Land Use/ Socio-economics	Residences: 461 Businesses: 5	Residences: 469 Businesses: 2	Residences: 20 Businesses: 6	Residences: 10 Businesses: 3	Residences: 10 Businesses: 1	Residences: 8 Businesses: 3
Cost	$159 million (min) $200 million (max)	$163 million (min) $195million (max)	$174 million (min) $205 million (max)	$165 million (min) $196 million (max)	$164 million (min) $195 million (max)	$184 million (min) $220 million (max)

Table iii Preferred Alternative Revised Impacts

D13 North Modified	Wetlands/ Non-wetland Waters	Natural Communities Wildlife, Fisheries	Water Quality	Agricultural Land
Direct Impacts	0.11 ha (0.26 ac) non - wetlands/waters 10.9 ha (26.9 ac) vernal pools/swales 6.54 ha (16.15 ac) of vernal and freshwater marsh	0.01 ha (0.02 ac) willow scrub 17.13 ha (42.33 ac) nonnative grassland 113.49 ha (280.43 ac) grassland northern hardpan vernal pool complex 1.65 ha (4.07 ac) grassland/northern volcanic mudflow vernal pool complex 0.69 ha (1.70 ac) mixed riparian forest 5.35 ha (13.22 ac) mixed oak woodland 9.55 ha (23.59 ac) vernal pool fairy shrimp critical habitat	333.1 ha (823 ac) footprint with 9 stream crossings	157.19 ha (388.40 ac)
Indirect Impacts [1]	8.5 ha (21.0 ac) vernal pools/swales	6.93 ha (17.12 ac) vernal pool fairy shrimp critical habitat	377.2 ha (932 ac) footprint	

[1] Indirect impacts were determined based upon USFWS guidelines and in cooperation during Section 7 consultation.

S.5 Issues and Areas of Controversy

S.5.1 Farmland Loss

The proposed project would require approximately 21 to 22 ha (52-55 ac) of prime farmland. There are approximately 5961 ha (14,903 ac) of prime farmland in Placer County. Thus, the maximum amount potentially removed from production represents approximately 0.004 percent of the total.

S.5.2 USDA Wetland Conservation Easement

One property within the proposed right of way for the Lincoln Bypass is in a conservation easement called the Wetlands Reserve Program administered by the U.S. Dept. of Agriculture (USDA Wetlands Conservation Easement). The Wetlands Reserve Program is a voluntary program offering landowners the opportunity to protect, preserve and enhance wetlands on their property. The program is targeted at marginal farmland that was previously wetlands. The D13 North Modified was developed to avoid this property and is presented in more detail in Chapter 2.

S.5.3 Growth Inducement

Policy makers in Placer County and the City of Lincoln feel that growth is inevitable, and have developed strategies to manage it so this area retains the qualities of life the citizens' desire. The city has laid the groundwork to become the next large growth area in western Placer County. Lincoln was the state's second fastest growing community in 2004, growing at a rate of 16.8%. The City gained 1,966 housing units in 2004, bringing the population to 27,356 in January 2005.

In 1988, the City of Lincoln updated its General Plan to designate areas where development should occur. The City determined that the adoption of the proposed Land Use Element would cause significant growth inducing impacts, resulting in levels of population and urban development in excess of that which would otherwise occur within the existing city limits under the former General Plan. According to the City of Lincoln's General Plan Environmental Impact Report, Lincoln's adoption of the land use policies specified in the General Plan would commit lands for mixed urban uses that are currently used for agriculture and livestock grazing. The distribution and concentration of population would also be increased by adoption of the Land Use Element. These impacts were found to be both significant and un-mitigatible. The Bypass is a critical component

of the circulation plan. Lincoln is currently updating its 1988 General Plan with additional information on land use policies and impacts of its recent growth.

An Indirect and Cumulative Impact Analysis was prepared for the Lincoln Bypass, which includes information on growth inducing impacts. Updated information on these impacts is included in this document in Appendix I.

S.5.4 Sensitive Habitat Impacts

Wetlands are distributed throughout the project area; thus any project alternative involving new construction would impact wetlands. Vernal pools are considered among the more biologically sensitive wetland types due to their relative scarcity and the difficulty in mitigating impacts to this type of wetlands. Vernal pools also provide habitat for several sensitive plant and animal species found in the area. Table iv and Table v compare the total wetland loss and oak habitat loss for all the alignments.

Table iv Wetland Habitat Loss

	AAC2	A5C1	D1	D13	D13 South Modified	D13 North Modified
USACE Jurisdictional Waters in hectares (ac)	6.23 ha (15.4 ac)	7.85 ha (19.4 ac)	5.30 ha (13.1 ac)	4.73 ha (11.7 ac)	5.91 ha (14.6 ac)	5.1 ha (13.8 ac)
Vernal Pools and swales in hectares (ac)	3.80 ha (9.4 ac)	4.65 ha (11.5 ac)	2.43 ha (6.0 ac)	2.14 ha (5.3 ac)	3.28 ha (8.1ac)	2.0 ha (5.0 ac)

Table v Oak Habitat Loss

	AAC2	A5C1	D1	D13	D13 South Modified	D13 North Modified
Oak habitat in hectares (acres)	10.16 ha (25.1 ac)	6.11 ha (15.1 ac)	0.4 ha (1.0 ac)	3.28 ha (8.1 ac)	0.08 ha (0.2 ac)	3.28 ha (8.1 ac)

The previous tables were used in the initial comparison of the alternatives and based upon preliminary design information. The preferred alternative (D13 North Modified) was chosen based upon these preliminary numbers. The D13 North Modified alternative was then further designed, and the USFWS threatened and endangered species impact methodology was applied. In addition, wetlands were created by beavers at Yankee Slough, which contributed several hectares to the previously identified impacts. The revised impact numbers are as follows:

Table vi Preferred Alternative Revised Habitat Loss

Habitat	D13 North Modified
USACE Jurisdictional Wetlands/Waters in hectares (ac)	6.64 ha (16.43 ac)
Vernal Pools and swales in hectares (ac)	19.38 ha (47.90 ac)
Oak habitat in hectares (acres)	5.35 ha (13.22 ac)

S.5.5 Endangered Species Habitat

Chapters 3 and 4 describe all the special status species that could be affected by the project. The plants and animals listed in Table vii are protected by either the Federal Endangered Species Act, or the California Endangered Species Act.

Table vii Federal and State Threatened and Endangered Species Potentially Occurring in the Project Area

Common Name	Latin Name	Status
Swainson's hawk	*Buteo swainsoni*	State Threatened
American peregrine falcon	*Falco peregrinus anatum*	State Endangered
Aleutian Canada goose	*Branta canadensis leucopareia*	Federally Threatened
California red-legged frog	*Rana aurora draytonii*	Federally Threatened
Vernal pool fairy shrimp	*Branchinecta lynchi*	Federally Threatened
Vernal pool tadpole shrimp	*Lepidurus packardi*	Federally Endangered
Valley elderberry longhorn beetle	*Desmocerus californicus dimorphus*	Federally Threatened
Slender Orcutt grass	*Orcuttia tenuis*	Federally Threatened, State Endangered
Sacramento Orcutt grass	*Orcuttia viscida*	Federally Endangered State Endangered
Bogg's Lake hedge-hyssop	*Gratiola heterosepala*	State Endangered

S.6 Other Federal Actions Required For This Project

S.6.1 NEPA/404 MOU / Concurrence process

A Section 404 Individual Permit would be required from the U.S. Army Corps of Engineers (USACE) for impacts on wetlands and waters of the U.S. The USACE issues the permit; however, the U.S. Environmental Protection Agency has oversight and override authority of this permit.

Concurrence has been obtained on the project's purpose and need, range of alternatives and criteria for choosing an alternative by the signatories of the NEPA/404 MOU: the U.S. Army Corps of Engineers (USACE), U.S. Environmental Protection Agency (EPA), National Marine Fisheries Service (NMFS), the U.S. Fish and Wildlife Service (FWS), Federal Highway Administration (FHWA) and Caltrans.

An Alternatives Analysis prepared in accordance with the Clean Water Act, Section 404(b)(1) Guidelines and following the NEPA/404 Integration Process has been completed. The Alternatives Analysis identified the "Least Environmentally Damaging Practicable Alternative" (LEDPA). Written agreement that the preferred alternative is the

LEDPA is required from USACE and EPA. The LEDPA concurrence has been obtained from both the EPA (7/9/03) and USACE (8/8/03). The preferred alternative, D13 North Modified is the LEDPA based upon information contained in this EIS/R. Preliminary concurrence has been given by the EPA and USACE on the Draft Conceptual Mitigation and Monitoring Plan in December 2004. Once this final concurrence is obtained and the Final EIS/R is updated, the Conceptual Mitigation Plan will be finalized. This information will be used in obtaining the Individual Permit from the USACE.

A wetland verification was completed for the project impacts, however, that verification expired in 1991. Caltrans met with the USACE and requested that the expired verification be adequate for use in comparing impacts until a preferred alternative is chosen. At that time, a new wetland delineation and verification would be performed. The USACE agreed to this approach. (Meeting with USACE on March 11, 1999). A new Wetland Delineation was submitted to the USACE in February 2004 and is awaiting final approval, pending final design.

After circulation of the Draft EIS/R and identification of the LEDPA, a preliminary agreement with FWS on the project mitigation is required. A "Non-Jeopardy" Biological Opinion pursuant to the Federal Endangered Species Act was received from the FWS on February 2, 2005 and a preliminary agreement on mitigation has been received. A request to modify the BO was sent in January 2006 and granted on March 21, 2006.

S.6.2 FHWA Re-evaluation

According to FHWA's regulations implementing the National Environmental Policy Act (NEPA), 23 CFR § 771.129(a):

[a] written evaluation of the draft EIS shall be prepared by the applicant in cooperation with the Administration if an acceptable final EIS is not submitted to the Administration within 3 years from the date of the draft EIS circulation. The purpose of this evaluation is to determine whether or not a supplement to the draft EIS or a new draft EIS is needed.

A re-evaluation was submitted to FHWA on April 12, 2006. The re-evaluation summarized the project and changes in the natural and social environment that have occurred since the Draft was circulated. FHWA concurred on April 17, 2006.

Figure i Project Location

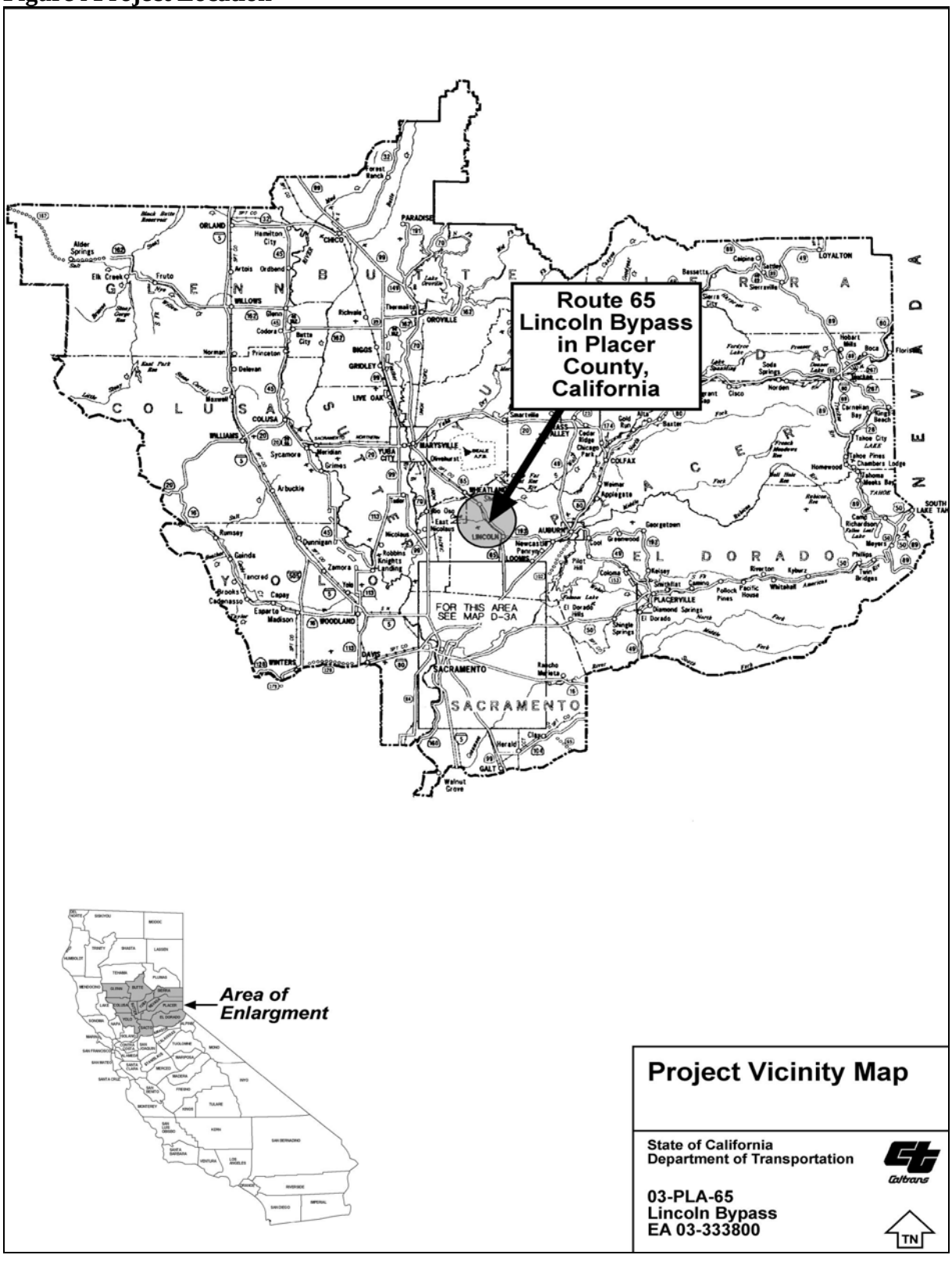


Figure ii Vicinity

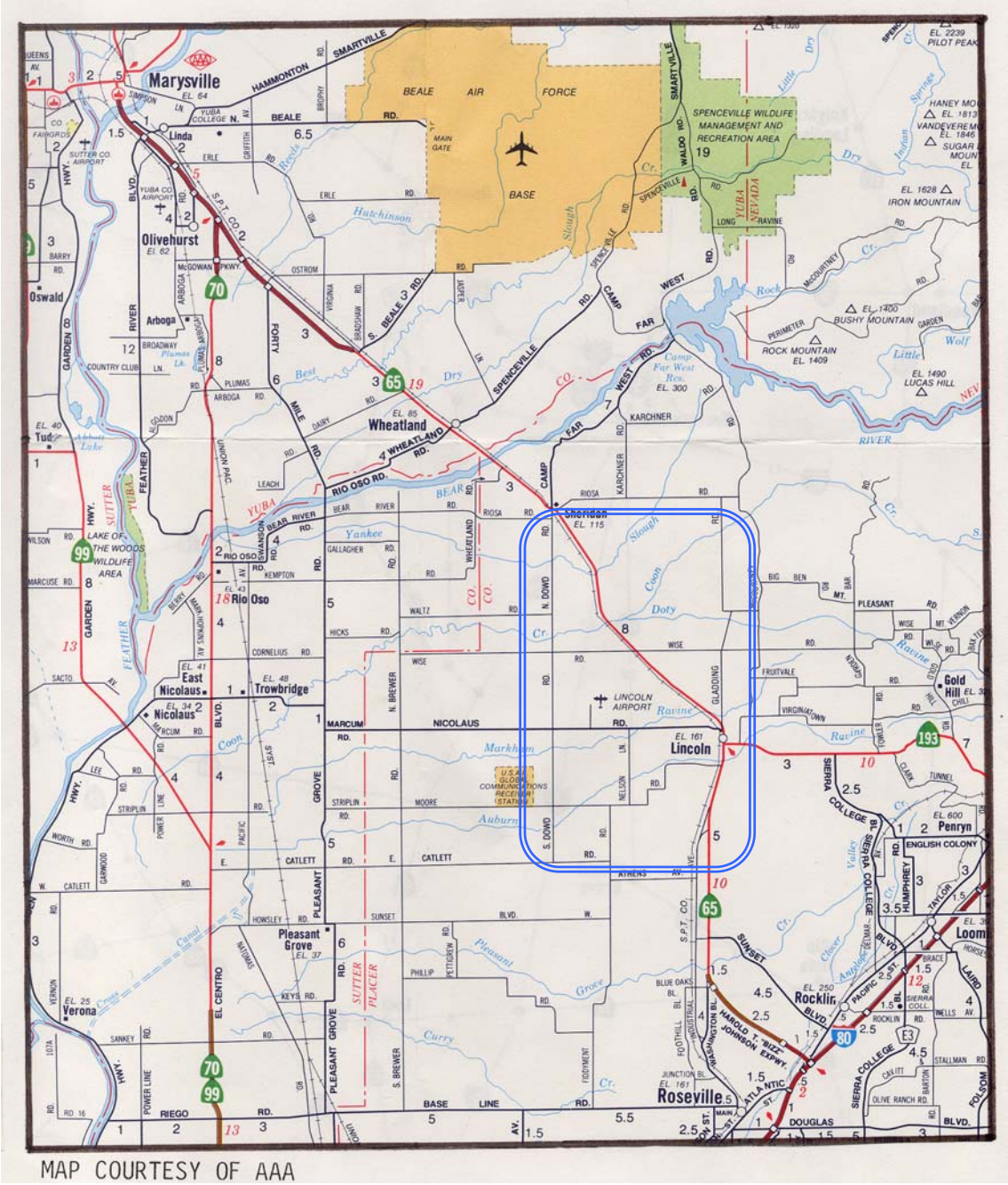
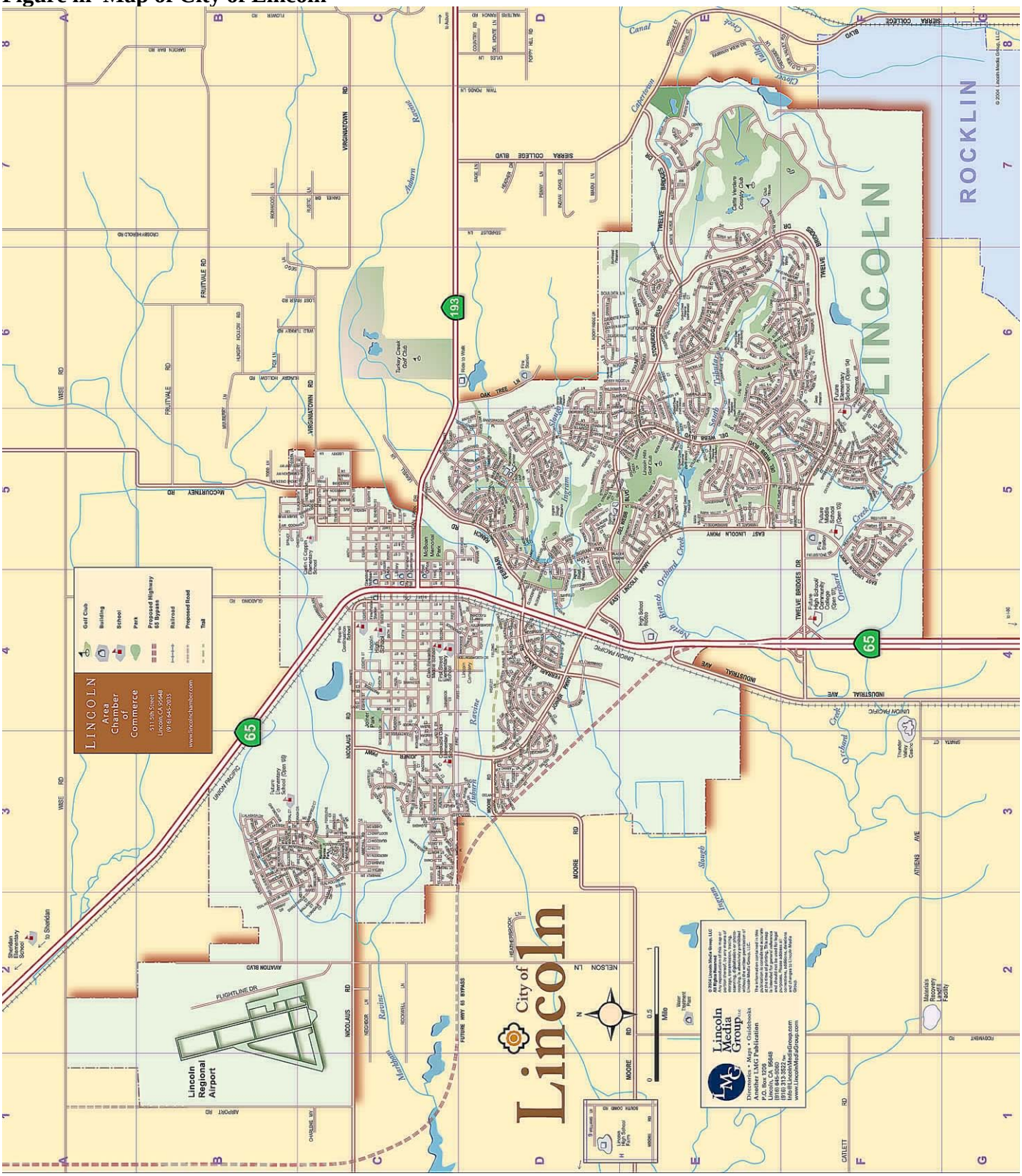


Figure iii Map of City of Lincoln



1 PURPOSE & NEED

1.1 INTRODUCTION

The California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA) propose to modify the adopted route for State Route 65 (SR 65) in Placer County in the vicinity of the City of Lincoln from Kilometer Post (KP) 19.3 to 38.3 (Postmile [PM] 12.0/R23.8). This will allow for the identification and preservation of a new corridor for the eventual staged construction of a four-lane freeway with interchanges at selected locations, and the ultimate relinquishment of a portion of the existing SR 65 to the City of Lincoln and Placer County. The project begins near the junction of Industrial Avenue and SR 65 just south of the City of Lincoln and extends to the Bear River, just north of the town of Sheridan. (Please see Figure i, ii and iii following the Summary.) For a complete description of this project, please see Chapter 2, Proposed Alternatives and Figure 2-1.

This document has been prepared in conformance with the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA) requirements to address potential environmental effects of the proposed adoption of a corridor and construction of a highway. Its purpose is to help decision makers and citizens make an informed evaluation of this project based on an understanding of its environmental consequences, and to recommend actions to protect, restore and enhance the affected environment by avoiding sensitive areas, minimizing impacts and mitigating for unavoidable impacts.

The Draft EIS/EIR was circulated for a period of 55 days from November 15, 2001 to January 15, 2002. During the draft EIS/R circulation period, public hearings were held to provide an opportunity for public comments and concerns. Comments and the response to comments from the Draft EIS/R circulation period and public hearing can be found in Appendix K.

No sooner than thirty days after the Final EIS is made available to the public and those who commented on the Draft EIS, a Record of Decision (NEPA) is published in the Federal Register. The Record of Decision explains which alternative has been selected and the rationale for why it was selected, summarizes mitigation and monitoring and summarizes efforts made to minimize the environmental impacts. It should be noted that at a future date FHWA or another Federal agency may publish a notice in the Federal Register, pursuant to 23 USC §139(l), indicating that a final action has been taken on this project by FHWA or another Federal agency. If such notice is published, a lawsuit or other legal claim will be barred unless it is filed within 180 days after the date of

publication of the notice (or within such shorter time period as is specified in the Federal laws pursuant to which judicial review of the Federal agency action is allowed). If no notice is published, then the lawsuit or claim can be filed as long as the periods of time provided by other Federal laws that govern claims are met.

The proposed project is partially funded and is programmed in the SACOG Metropolitan Transportation Plan (MTP) 2027 which was found to conform by the SACOG Board on March 16, 2006, and FHWA and FTA adopted the air quality conformity finding on April 20, 2006. The project is also included in the SACOG's financially constrained 2004-2006 MTIP, which was found to conform by FHWA and FTA on April 20, 2006. This proposed project's preferred alternative design, concept and scope are consistent with the above-mentioned documents, the 2004 STIP, and the proposed 2006 STIP. A local air quality analysis (Carbon Monoxide) has been performed.

In order for the project to be included in the MTIP, it must be in conformance with air quality standards and must meet certain criteria. This project has been analyzed and will not significantly change the air quality in the City of Lincoln.

1.1.1 Project History

SR 65 runs between the Placer County line to just north of Wise Power House Road and was adopted as a freeway by the California Highway Commission, (now known as the California Transportation Commission (CTC)) on May 20, 1964. Since that time there have been considerable changes in land uses along the existing alignment from Roseville through Lincoln. Once primarily agricultural in nature, the past thirty years has seen a shift to industrial, residential and commercial land uses within the corridor. In the 1980s, the city of Lincoln, recognizing the need to preserve a corridor for another route due to growth in the area, requested the CTC to consider a modification to the Route for the portion between Industrial Avenue to just north of the city of Lincoln (Resolution No. 87-23). This project is one of several transportation projects responding to the growth in the area. These are listed in Section 1.3.11 later in this chapter.

Caltrans prepared a Project Study Report for a new Route Adoption for the Lincoln Bypass in July 1987. In November of that same year, a public informational meeting was held. (A summary of public involvement can be found in Chapter 7, Comments and Coordination.)

The CTC included the proposed route adoption in its 1988 State Transportation Improvement Program (STIP) Special Studies list of projects.

A Major Investment Study (MIS) was completed in October 1995 that evaluated different transportation solutions to the increasing congestion along this corridor. The

MIS concluded that a highway facility is the most efficient and cost effective solution to the congestion along this route. The MIS is summarized in Section 1.3.9.

A Notice of Initiation of Studies was circulated to State, Federal and local agencies and organizations in July of 1989 and the Stage II Work Program, which discussed most of the alternatives now being evaluated, was prepared by Caltrans in March, 1990.

A Notice of Preparation was sent to the State Clearinghouse on June 18, 1990 and a Notice of Intent was published in the Federal Register on June 28, 1990. These Notices described the project that is now being proposed. Copies of these documents can be found in the Appendix B.

Two more public informational meetings were held; on May 1, 1990 and April 18, 1991 and three newsletters were sent out between April 1990 and March 1993. The information obtained from these workshops and responses to the notices were used to refine the projects alternatives, and studies evaluating the environmental impacts were initiated.

An additional informational meeting was held on September 22, 1999. At that meeting, it was suggested by a number of attendees to combine alternative D1 and D13, thereby moving the alignment further from homes in the Brookview subdivision. This alternative was considered and is described in Chapter 2.

At that meeting, it also came to light that some property on the northern end of the project was slated for a Wetland Conservation Easement. Due to these impacts, two more alternatives, D13 North Modified and D13 Dowd, were proposed that avoided that property. The D13 Dowd alternative was withdrawn from consideration due to operational conflicts. Both are discussed in Chapter 2.

A public open house was held on December 18, 2001 during the circulation of the draft environmental document. Approximately 300 people signed in and 176 submitted comments. The comments ranged in nature from supportive of the project to concern over the loss of farmland and the rural feel of the area. The resource agencies concerns were focused on loss of habitat for vernal pools and their denizens, the Swainson's hawk and growth inducement. Copies of the comments and responses to comments can be found in Appendix K.

1.2 PURPOSE OF PROJECT

The purpose statement for this project was developed with the cooperation and concurrence of the U.S. Fish and Wildlife Service, the U.S. National Marine Fisheries Service, the U.S. Environmental Protection Agency and the U.S. Army Corps of Engineers under the terms of the NEPA/404 Memorandum of Understanding (MOU). The project purpose is to relieve congestion and improve safety on existing SR 65

through the City of Lincoln and provide for a regional traffic solution to accommodate projected traffic volumes through the year 2025.

1.3 NEED FOR PROJECT

Continued growth in South Placer County and the Sacramento Valley has resulted in the need for a new and improved SR 65 corridor, which would alleviate congestion in the City of Lincoln while providing for improved inter-regional traffic flow. The existing facility through Lincoln is a "Main Street" highway, which will not serve the ultimate transportation needs of the region. Due primarily to congestion, the accident rate in downtown Lincoln is higher than the Statewide average rate for this type of facility. As traffic volumes continue to increase, SR 65 within downtown and south of Lincoln has exceeded available capacity.

1.3.1 Existing Roadway

SR 65 serves as a major north-south highway along the east side of the Sacramento Valley. It was included as part of the State Highway System under authorization of the State Highway Act of 1909, and was made part of the California Freeway and Expressway system in 1959. The original construction from Roseville to Lincoln, designated as SR 3, took place between 1912 and 1914 and was adopted as a freeway by the California Highway Commission (now known as the California Transportation Commission [CTC]) on May 20, 1964. SR 65 connects the urbanized areas of Sacramento and Roseville with the cities of Lincoln, Wheatland, Marysville and Yuba City. SR 65 begins in Roseville at I-80, extending to the junction of SR 70 in Yuba County. Legislation was passed in 1985 extending the legislative description of the route to SR 99 in Yuba City.

The SR 65 Roseville Bypass was completed from I-80 to Pleasant Grove Creek Bridge (KP 7.7 to 14.2 [PM R4.8 to R8.8]) in the late 1980's. The Harding Boulevard (later renamed Galleria / Stanford Ranch Road) interchange, a locally funded project at KP 9.5 (PM R5.9), was completed in 1992. Interchanges were later added at Pleasant Grove Boulevard (PM 7.2) and Blue Oaks Boulevard / Washington Boulevard (PM 8.1). SR 65 then becomes a four-lane expressway with an intersection at Sunset Boulevard (PM 9.6). A freeway interchange was added at Twelve Bridges Drive (PM 11.9), and the section from Industrial Boulevard north to Ferrari Ranch Road was recently upgraded to a four-lane conventional highway with turn lanes.

The downtown business section begins just north of Auburn Ravine at KP 19.7 (PM 12.24) and continues to Gladding Road. Beginning at First Street, one through-lane in each direction is provided with a continuous two-way left turn lane. On-street parking and sidewalks are also provided. Traffic signals are located at Ferrari Ranch Road, First

Street, Third Street, SR 193 (also known as Fourth St.), and Fifth and Seventh Street. The left turn lane ends near Gladding Road, at the edge of town.

The existing road between Lincoln and Sheridan is a two-lane conventional highway. It is parallel to and east of the railroad tracks. Right of way in this vicinity is typically 30.5 to 33.5 m (100-110 ft) wide. Between Lincoln and Sheridan, there are two passing opportunity locations; each approximately 2.4 km (1.5 mi) long. Curves and left-turn channelization along this section of highway limit passing opportunities.

From Sheridan north, the route continues as a two-lane conventional highway, passing through the town of Wheatland, slowing down traffic to 35 mph. Three miles north of Wheatland, the highway becomes a four-lane freeway and terminates at the SR 99 in Yuba City.

1.3.2 Traffic Summary

The Lincoln Bypass will provide a substantial benefit in accommodating regional traffic and helping to reduce congestion in and south of Lincoln. Without the Bypass future traffic congestion will create gridlock conditions within and surrounding Lincoln.

As a result of the gridlock in Lincoln, traffic diverts to local streets and causes congestion. This delays emergency vehicles and may prevent them from responding in a timely manner. Commute, local, recreation and regional trip travel times increase dramatically and overall quality of life suffers.

The Lincoln Bypass will reduce overall delay within the project Study Area by over 300% and will increase overall speeds in the Study Area by over 250% in 2025 compared to the "No Build" Alternative. See Table 1-4 and Table 1-5 for more detailed information. The ultimate project, which will not be built until additional funding becomes available, will provide speeds of 105 kph (65 mph) compared to speeds of less than 40 kph (25 mph) on the existing route between Industrial Avenue and the Bear River, which, coincidentally, also marks the Placer/Yuba county line.

Traffic Study Methodology

Two types of traffic models were used to complete the traffic study for the Lincoln Bypass: a regional demand model and micro-simulation model. A regional demand model is comprised of many zones, which include land use elements such as the number of houses, amount of employment and future housing and employment changes in and around the City of Lincoln. This demand model provides the future traffic volumes and determines the amount of traffic that will use the Bypass, interchanges and local roads.

The Regional Demand Model used for this project consists of two traffic models, the Yuba/Sutter Travel Demand Model (YSTDM) and the Butte County Transportation Model. The Sacramento Area Council of Government (SACOG) is responsible for the YSTDM and

the Butte County Association of Government (BCAG) is responsible for the Butte County Model. The two transportation models were combined into one model in order to analyze traffic demand using roadway corridors throughout the various counties. Included in the combined model are Butte, Sutter and Yuba Counties, and parts of Placer, Sacramento and Yolo Counties.

Land-use for years 1998, 2015 and 2025 and the model files were obtained from SACOG and BCAG covering their respective areas. Recent traffic count data and future road network information were obtained from all local agencies and used where needed. The Statewide Travel Survey (Caltrans) and the Household Travel Survey Report #1 (SACOG) were used for the number of trips, average trip length and other pertinent information.

The CORSIM Model

If a traffic system is simulated on a computer, it is possible to predict the effects of a proposed project on the traffic system's operational performance. Outputs from a simulation model also provide the basis for optimizing this performance.

Starting in the mid 1970's, the FHWA recognized this need and ultimately TRAF was developed. TRAF, abbreviated from TRAFFIC, consists of an integrated set of simulation models, which includes CORSIM. CORSIM stands for corridor simulation and consists of a freeway network named FRESIM and a surface street network named NETSIM.

CORSIM is a micro-simulation model, which means each vehicle using a specified car-following logic is a distinct object that is moved every second and its behavior interacts with the surrounding environment. This may include other vehicles, control devices (such as traffic signals) and roadway characteristics. In addition, vehicle types can be specified with different operating performance characteristics and driver behavior characteristics (passive or aggressive) can be assigned to each vehicle. Many other model elements can be modified or customized. CORSIM is a stochastic model, which allows vehicles to be simulated in a more realistic manner by using randomness in the analysis.

A micro-simulation model has the ability to evaluate the proposed improvements in detail and provide a myriad of outputs. CORSIM also has the ability to show vehicle animation, which is useful to show the traffic study results to the project development team, to the public and to project management or elected officials.

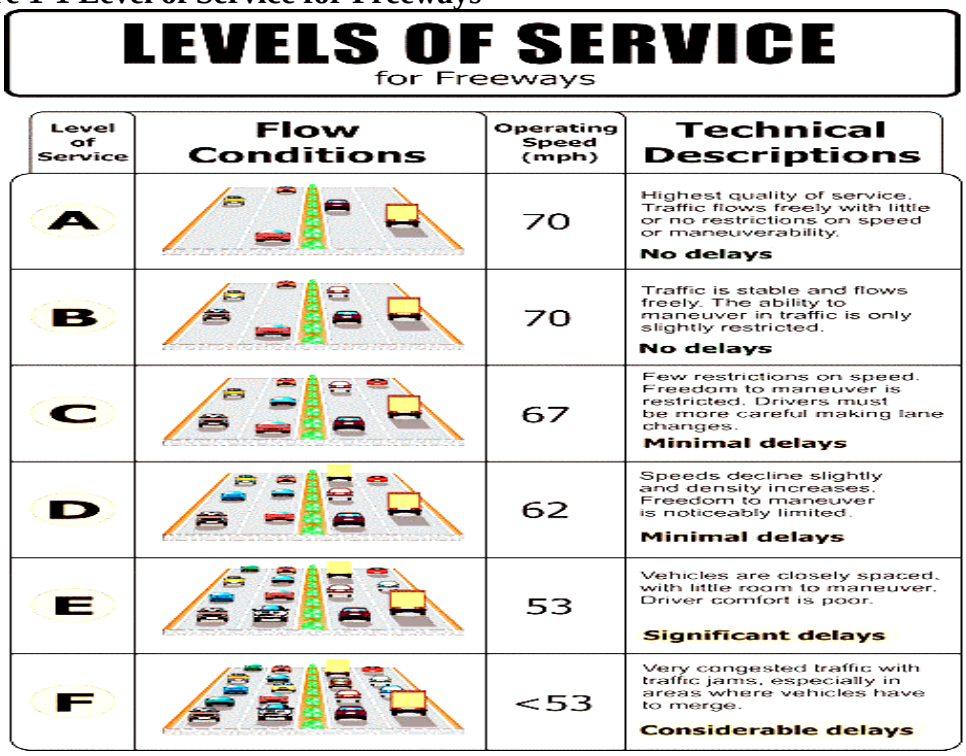
The CORSIM micro-simulation traffic model used for this project compares different alternatives over different time periods. These include the 1998 Base Year, 2015 and 2025 No Build, and the D13-D1, A5C1-AAC2 alternatives for years 2015 and 2025. The model outputs include such items as the amount of traffic diverted from the existing SR 65 to the new Bypass and average speeds on the Bypass and on the old SR 65 for each of the alternatives. It is important to note the traffic model is more accurate in comparing the

relative difference between alternatives than in predicting the future results as absolute values.

1.3.3 Level of Service

Segments of highway or roadway are evaluated for present and/or future traffic handling capacity through use of standardized Level of Service (LOS) grading systems. LOS is a qualitative measure describing operational conditions within a traffic stream or at an intersection, generally described in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience and safety. LOS are designated A through F, from best to worst, and they cover the entire range of traffic operations that may occur. Figure 1-1 illustrates what LOS means with regard to a freeway segment with a free flow speed of 105 kph (65 mph). Different criteria are used to determine the Levels of Service at intersections, illustrated in Table 1-1. The Lincoln Bypass will be designed for a Level of Service C to E.

Figure 1-1 Level of Service for Freeways



LOS at intersections is defined in terms of delay, which is a measure of driver discomfort and frustration, fuel consumption and lost travel time. LOS A represents no delay and LOS F represents very heavy traffic congestion and considerable delay. Longer delays may result from some combination of unfavorable traffic lights progression, long cycle lengths or a high volume to capacity ratio. LOS D is considered

by many agencies to be the limit of acceptable delay. LOS F results in delays over one minute long, considered by many drivers to be unacceptable. This level often occurs with over-saturation, i.e. when arrival flow rates exceed the capacity of the intersection.

Table 1-1 LOS at Intersections

LOS at intersections	**LOS A**	**LOS B**	**LOS C**	**LOS D**	**LOS E**	**LOS F**
Delay (in seconds)	<5-10	10-20	15-25	35-55	55-80	> 60-80

1.3.4 Traffic Volumes and Level of Service

Predicted traffic volumes for the bypass were determined by using a combination of the Department 1998 Tri-County Travel Demand Model (CTCTDM), various consultant prepared traffic studies for local development, a 1998 travel survey and the City of Lincoln General Plan. Traffic volumes on the Bypass can be broken into two components; local traffic and through traffic (regional and interregional). An estimated 40% of the 2025 northbound traffic on the Bypass will access local developments and the existing industrial complex near the airport. The remaining 60% will be "through" traffic continuing towards Marysville and Roseville.

Table 1-2 shows the existing 1998 traffic volumes as well as future traffic projections for the "No Build" and "Build" scenario for the year 2015 and 2025. The worst case was used to illustrate congestion. Thus, the northbound evening peak hour volumes are used to illustrate the general congestion of the roadway since northbound is more congested than southbound in the evening and evening peak hours are generally worse than morning peak hours due to the combination of commuter trips and other trips (shopping, errands, school, etc).

The LOS for each segment is based on more factors than just the volumes shown in the table below. The additional factors include the percentage of truck traffic, the type of driver (commuter or recreational) and roadway characteristics such as shoulder width, lane width and number of driveways. The LOS at intersections is illustrated in Table 1-3.

Table 1-2 NB/PM Peak Hour Traffic Volumes, Existing and Predicted

Existing Route								
	Industrial to First[1]		First to Seventh[1]		Seventh to Wise[1]		Wise to Co. Line[1]	
Year	VOL	LOS[1]	VOL	LOS	VOL	LOS	VOL	LOS
1998	1230	E	1050	D	620	D	700	D
2015	2000	F	1200	F	1100	E	1000	E
2025	2300	F	1200	F[2]	1100	F	1000	E
Existing Route With Bypass								
2015	1400	E	1000	D	750	D	500	D
2025	1400	E	1100	F[3]	850	D	600	D
On Bypass Alternative D								
	Industrial to Nelson[1] (Four lanes)		Nelson to Jct. of old SR 65[1]					
2015[4]	2200	C	1350	E				
2025[5]	2300	C	1500	C				
On Bypass Alternative AC								
2015[4]	2300	C	1350	E				
2025[5]	2300	C	1500	C				

Footnotes

[1] Traffic volumes for each segment are at select locations.
[2] LOS for four hours
[3] LOS for one hour.
[4] First Phase of project (4 lanes up to Nelson or Nicolaus then to 2 lanes)
[5] Ultimate project (4 lanes throughout)

Table 1-3 Intersection Level of Service on Existing SR 65

Intersections with SR 65	**1999 LOS**	**2015 LOS NO BUILD**	**2015 LOS BUILD**	**2025 LOS NO BUILD**	**2025 LOS BUILD**
Sterling	Not Applicable	F	D	F	D
Ferrari Ranch	C	F	D	F	E
Wise	C	E	D	E	D
Riosa	D	F	D	F	D

Continuing growth in residential, commercial and industrial development in and around the City of Lincoln has resulted in congestion on existing SR 65 through the Study Area. In 1998, SR 65 operated at an LOS D through the project area. Currently, significant queuing is observed at peak times, on a daily basis on SR 65, northbound and southbound prior to entering the City of Lincoln. This means that the signal system is operating at LOS F at peak times. Approved proposed development in and around the City of Lincoln will add to the congestion. Northbound traffic demand south of Industrial Avenue is expected to increase approximately 300% over the next 25 years. Cross traffic resulting from numerous driveways, signalized intersections and proposed future connections will further contribute to the deterioration of the level of service in the downtown area.

Regional trips originating and terminating in Lincoln are expected to increase as the City's economy grows. As of 1998, there were 19,000 vehicles per day on SR 65 in the City of Lincoln. Traffic north of Lincoln is projected to increase from 11,000 per day to approximately 32,000 vehicles per day by the year 2025. South of Lincoln, traffic

volumes on SR 65 are expected to increase from 20,000 vehicles per day to approximately 70,000 vehicles per day by the year 2025.

Table 1-4 illustrates the congestion experienced on SR 65 by comparing the overall speed and total delay for the existing road, "no build" and "build" scenarios. The Study Area includes the greater City of Lincoln area and north past Sheridan to approximately the Placer/Yuba county line.

The project was broken up into several phases due to funding constraints. A more detailed explanation of project phasing is available in Chapter 2. Briefly, the first phase of the preferred alternative is to construct a four-lane expressway to Nelson Lane (D alternatives) or Nicolaus Road (AC alternatives) with an interchange at Industrial Boulevard. The Lincoln Crossing development will construct an interchange at Ferrari Ranch Road independently from this project. A two-lane facility will be constructed for the remainder of the project, with at-grade intersections at Nelson, Wise and Riosa Roads. Ultimately, the project will be a four-lane freeway the entire length of the project with interchanges at Nelson, Wise and Riosa Roads.

Table 1-4 Overall Speeds And Delays Within The Entire Study Area

Alternative	**Overall Speed** **During the PM peak hour (mph)**		**Overall total delay (vehicle hours)**	
1998 Base	70 kph (44 mph)		70	
2015 No Build	24 kph (15 mph)		1850	
2025 No Build	21 kph (13 mph)		2850	
2015 First phase				
D Alternatives	56 kph (35 mph)		500	
AC Alternatives	56 kph (35 mph)		500	
2025 Ultimate (4 lane freeway)				
	Local roads	Freeway	Local roads	Freeway
D Alternatives	35 kph (22 mph)	89 kph (55 mph)	750	80
AC Alternatives	35 kph (22 mph)	89 kph (55 mph)	750	95

Overall speeds represent the average speed of all roads in the Study Area including SR 65, SR 193 and most local roads. Overall speeds include the impacts of traffic signals, stops signs, traffic volumes and the railroad crossing on SR 65 at Sheridan. Overall delays represent the difference between free flow speed and the predicted speed.

The results show that if the Bypass is not constructed, overall speed will decrease and overall delay will increase. Speeds increase and delays decrease between the scenarios as traffic signals on the Bypass (with the first phase of the project) replaced with interchanges and overcrossings for the ultimate freeway project.

Table 1-5 shows the average speeds on SR 65 without the project, with the new SR 65 bypass and on the "old" SR 65 from Industrial Ave to the Placer/Yuba county line. The results of the table below show an increase in speed with the Bypass. Average speed

will also increase on "old" SR 65 once the Bypass is built, compared to the "no build" because traffic will be diverted to the Bypass.

Table 1-5 Average Speeds- Industrial Ave. to Yuba County Line (PM peak hour)

Alternative	Northbound	Southbound
Existing SR 65		
1998 Base	82 kph *(51 mph)*	84 kph *(52 mph)*
2015 No Build	26 kph *(16 mph)*	55 kph *(34 mph)*
2025 No Build	23 kph *(14 mph)*	34 kph *(21 mph)*
Existing Route with 2015 First Phase		
D Alternatives	56 kph *(35 mph)*	56 kph *(35 mph)*
AC Alternatives	56 kph *(35 mph)*	56 kph *(35 mph)*
On Bypass with 2015 First Phase		
D Alternatives	72 kph *(45 mph)*	80 kph *(50 mph)*
AC Alternatives	72 kph (*45 mph)*	80 kph *(50 mph)*
Existing Route with 2025 Ultimate Project		
D Alternatives	56 kph *(35 mph)*	40 kph *(25 mph)*
AC Alternatives	56 kph *(35 mph)*	40 kph *(25 mph)*
On Bypass with 2025 Ultimate Project		
D Alternatives	105 kph *(65 mph)*	105 kph *(65 mph)*
AC Alternatives	105 kph *(65 mph)*	105 kph *(65 mph)*

1.3.5 Safety

Collision rates on existing SR 65 within the city of Lincoln are consistently higher than the Statewide average rate for this type of highway. The proposed project will relieve congestion and thus reduce collision potential in downtown Lincoln by providing a four-lane freeway to carry regional "through" traffic around the city to the west. Table 1-6 shows average collision rates for highways similar to this one, compared to the actual collision rates at different sections along SR 65 from the beginning of the year 2001 to the end of the year 2003.

Table 1-6 Collision Rates (per million vehicle miles)

NUMBER OF COLLISIONS				COLLISION RATE ACCS (MVM-)					
				ACTUAL			AVERAGE		
TOT	FAT	INJ	F+I	FAT	F+I	TOT	FAT	F+I	TOT
423	6	131	137	0.021	1.49	1.51	0.032	0.54	1.17
065 PLA R12.41-PLA R023.70							07/01/02-6/30/05		

The AAC2, A5C1, D1, D 13, D 13 North Modified and D 13 South Modified alternatives would continue the bypass to the north of Sheridan superseding the existing at-grade railroad crossing which would also reduce the collision potential in Sheridan at the railroad crossing.

1.3.6 Bicycle / Pedestrian Facilities

At this time, bicycle use in Lincoln is limited to existing streets without bike lane demarcation. Lincoln's bike plan is shown in Figure 1-2. The city has adopted a bike route plan, which is incorporated into the Placer County Bikeway Master Plan (see Figure 1-3). The proposed project does not accommodate bicycles, however after the Lincoln Bypass is built, the existing SR 65 will be available for bicycle use, with reduced auto traffic, providing for a safer and more enjoyable bike ride.

Pedestrian use on SR 65 is limited to in-town use. The freeway on either side of the town is not suitable for pedestrians.

The proposed project will have crosswalks and push buttons at all signalized intersections and all pedestrian crossings will be ADA compliant. The Ferrari Ranch Undercrossing and the future interchange will provide a full pedestrian facility. On some portions of Industrial Avenue, sidewalks and ADA compliant ramps are included.

As with the bicycles, SR 65 through town will be a much more pleasant walk after the traffic has been diverted to the proposed project.

1.3.7 Airports

The Lincoln Municipal Airport is an important transportation link, serving recreational and corporate needs. The Lincoln Airport Authority, a public entity of the City of Lincoln, operates the airport. Due to its proximity to major industrial and population centers in the South Placer region, the Lincoln Airport has become an attractive alternative to the Sacramento International Airport, especially for executives of major industries in Rocklin and Roseville. In the year 2000 there were 210 aircraft based at this airport, with a total of 72,000 flights in and out that year. The existing capacity of the airport is approximately 200,000 operations per year, depending on the type of aircraft. The airport is designed to accommodate an additional runway, which would double its capacity. The D alternatives include improvements to Nelson Lane, which will provide for convenient access to the airport from the proposed highway.

The City of Lincoln is currently in the process of expanding industrial development in and around the Lincoln Regional Airport. New hangars are being constructed and funding mechanisms are being pursued to provide new taxiways and upgrades to current facilities.

Figure 1-2 Lincoln Bike Route Plan

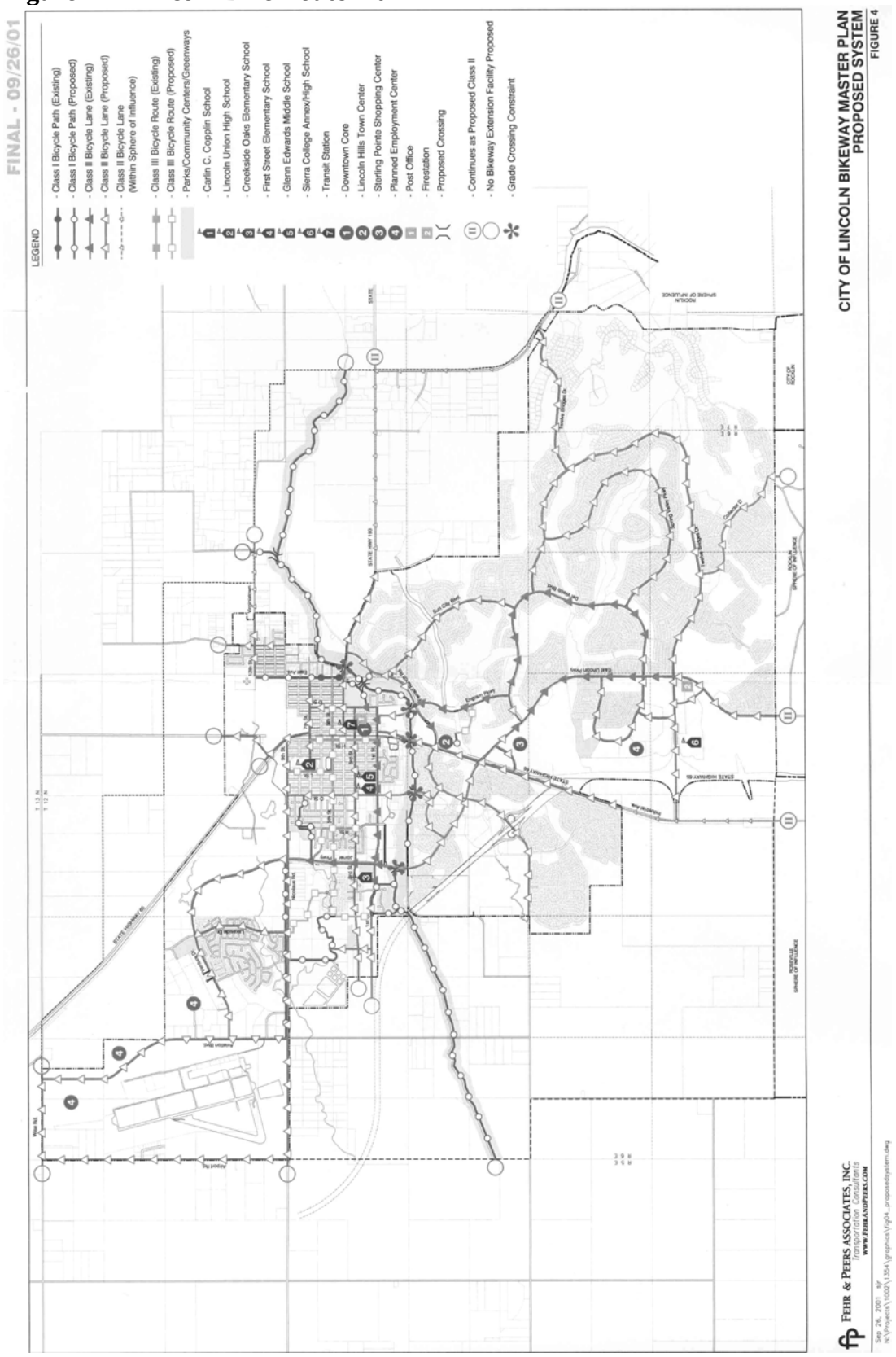
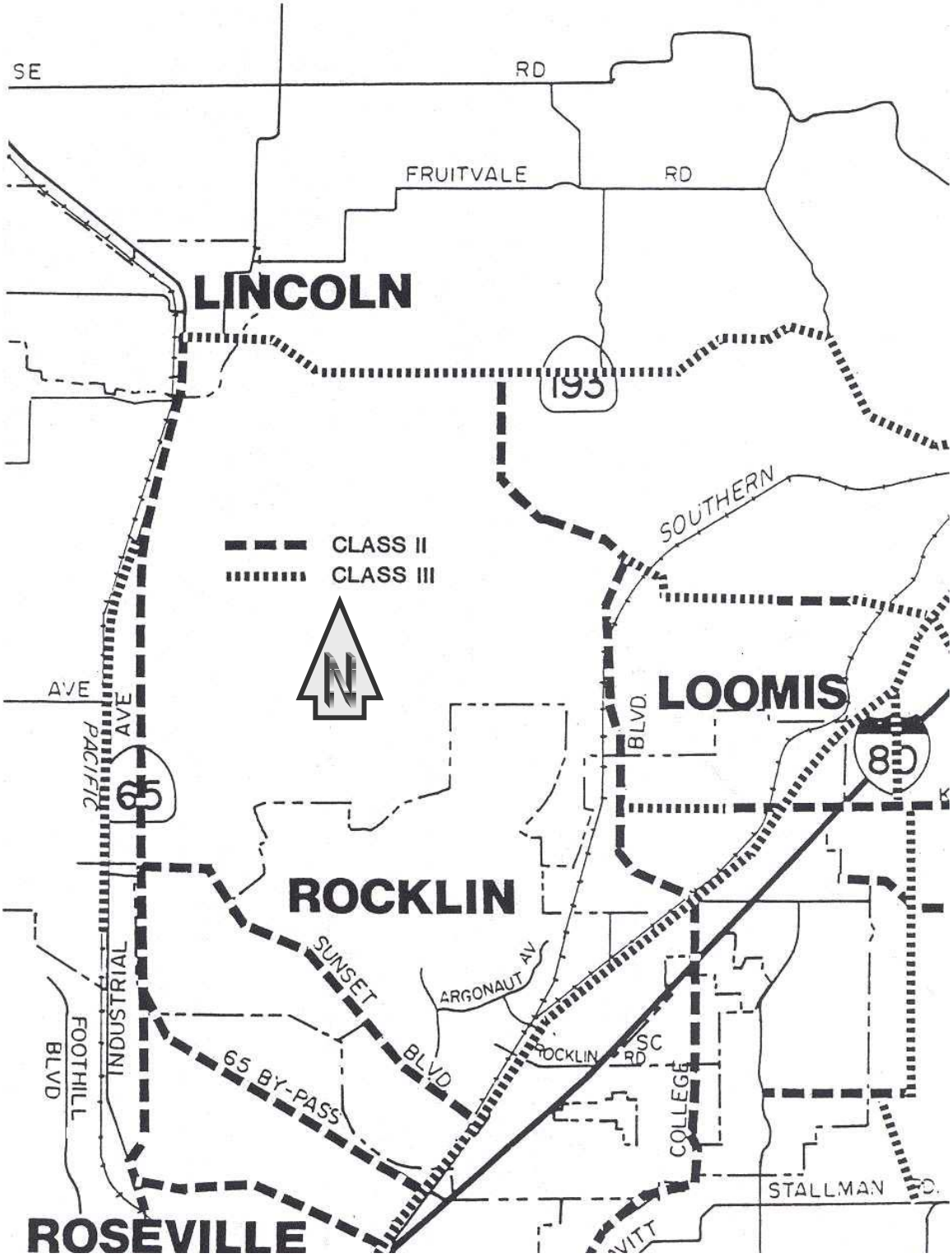


Figure 1-3 Placer County Bikeways



1.3.8 Existing Transit Services

Buses

Placer County Transit provides hourly bus service between Lincoln and Sierra College, including stops at key destinations along the way, such as the Roseville Galleria Mall. The Lincoln Transit Service operates three fixed routes within the city.

Park and Rides

There is one Park and Ride lot within the Roseville/Lincoln/Marysville corridor. It is located on Sierra College Boulevard and SR 193 east of Lincoln. It has 14 parking spaces and no bike lockers and is approximately 21 percent occupied. In addition, a Park and Ride potentially serving SR 65 is located off Interstate 80 at the junction of SR 193. That Park and Ride has 37 spaces and is generally about one third occupied.

An informal Park and Ride is located in McBean Park, next to the Pavilions. This is not a Caltrans facility, and no statistics are available on its use.

The cities of Roseville, Rocklin, Lincoln and Placer County have jointly set up ride sharing ordinances for South Placer County. The ordinances are designed to ensure that employers will share in the responsibility of mitigating some of the traffic and air quality impacts resulting from the increase in employment and auto traffic along this corridor. Larger employers are required to take certain actions to promote ride sharing among their employees; including designating a transportation coordinator to provide employees ride share and commute options information, establishing preferential parking for car/van pools and preparing a transportation plan which would achieve a 30% reduction in vehicle trips. The project proposes to secure the right of way for a Park and Ride lot facility, located adjacent to Industrial Avenue and SR 65 intersection for construction at a later date. (See Figure 2-4)

Rail

The 1997 Roseville-Lincoln-Marysville Passenger Feasibility Study defined a plan for rail service between Marysville and Sacramento. The Study concluded that the service was technically feasible either as commuter rail, which would need to be funded locally, or as intercity rail, funded as an extension of the Capital Corridor or San Joaquin service. Amtrak terminals are located in Sacramento and Marysville and the line goes through the City of Lincoln, however, the Amtrak Starlight is not anticipated to stop in Lincoln within the next 20 years. Under the management of the Capital Corridor Intercity Joint Powers Authority, Amtrak operates the Capital Corridor rail service between Sacramento and San Jose, with four trips per day to and from Colfax, stopping in Roseville and Auburn. This service is expected to generate a ridership of 8,700 passengers a day by the year 2010.

Southern Pacific Railroad operates a mainline through the center of Lincoln along the west side of SR 65. This line is used only for freight service. The railroad tracks cross seven streets at-grade in the downtown area, and the gate controlled track crossings can cause delays to side street traffic.

1.3.9 Major Investment Study (MIS)

An MIS was completed October 25, 1995, focusing on SR 65 from Industrial Avenue to the Bear River. This study was written to meet metropolitan planning regulations set forth by the Inter-modal Surface Transportation Efficiency Act (ISTEA) of 1991. The MIS evaluated the efficiency and cost effectiveness of a full range of modes of transportation to be considered as solutions to transportation problems on SR 65.

Although written by the Department, the MIS was developed with the cooperation of the Sacramento Area Council of Governments (SACOG), the Placer County Transportation Planning Agency (PCTPA), the City of Lincoln, Placer County Department of Public Works, local and regional transit operators, the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA). Through a collaborative process with these agencies, the MIS evaluated a full range of alternatives including:

Four-lane freeway bypass of Lincoln on new alignment

The four-lane freeway bypass consists of an access controlled freeway from Industrial Avenue to the Bear River, including a partial interchange at Industrial Avenue and full interchanges at Nelson Lane, Wise Road and Riosa Road with an overcrossing at Nicolaus Road. Total cost was estimated in 1994 at $71 million.

Phase 1 Bypass alternative on a new alignment

This alternative consists of a four-lane expressway from Industrial Avenue to Ferrari Ranch Road. The remainder of the project would be an access-controlled two-lane expressway ending at the Bear River. This alternative includes a partial interchange at Industrial Avenue and at-grade intersections at Nelson Lane, Wise and Riosa Roads with an undercrossing at Dowd Road. Total cost was estimated in 1994 at $39.8 million.

Two-lane bypass of Lincoln on new alignment

This alternative includes the construction of a two-lane bypass of Lincoln from Industrial Boulevard to just south of Nicolaus Road. This alternative includes a partial interchange at Industrial Avenue and a full interchange at Nelson Lane, which would serve the Lincoln Airport. At-grade intersections would be provided at Nicolaus Road, Wise Road and Riosa Road. Total cost was estimated in 1994 at $54 million.

Intercity Transit bus service

This alternative examines the possibility of expanding existing intercity bus service, a commute oriented rubber-tire transit service connecting the areas of Roseville, Rocklin, Lincoln and Marysville. The estimated cost is not available.

Transportation System Management/Travel Demand Management (TSM/TDM)

This alternative covers a range of improvements and strategies that aim to reduce the demand on and increase the efficiency of the existing transportation system, including measures such as the expansion of park and ride facilities with connections to intercity transit bus service, ride matching, car/vanpooling and teleconferencing. The estimated cost is not available.

Widening existing SR 65 to four lanes

The existing alignment would be upgraded to four lanes and from Moore Road through Gladding Road a continuous left turn lane would be constructed. The proposed upgrades through downtown Lincoln could generally be accomplished by eliminating on street parking and narrowing the sidewalks from 3.6 m to 1.5 m (12 to 5 ft). Total cost was estimated in 1994 at $10 million.

Commuter rail

Commuter rail connecting Roseville to Marysville is addressed in the Corridor level study prepared by the PCTPA in 1997. A breakdown of costs associated with this alternative are $13 million to bypass the Roseville Rail yard, $16 million to operate and maintain a commuter rail over a 20 year period, $15 million capital costs for rolling stock and an undetermined amount for track rights, possibly as much as $20 million, for a total of $64 million.

No Build - Leaving SR 65 through Lincoln as is

The no-build alternative refers to leaving the SR 65 as it is today, with no congestion relief projects.

These alternatives were evaluated and scored, and are listed above in the order they ranked. It was determined that the four-lane freeway bypass offered the best long-term solution to the congestion problem on SR 65 by improving safety and reducing travel through the City of Lincoln. All cooperating agencies approved the recommendations and signed the final MIS.

The MIS is available for review at the Caltrans District 3 office at 2389 Gateway Oaks Dr., Suite 100, Sacramento, CA 95833. Qualitative and quantitative criteria were established to accurately measure each of the alternatives effectively and ensure that they meet the purpose and need of the project. A summary table of the Alternatives Evaluation is presented in Table 1-7. The numbers in the table indicate the score each criterion was given. A score of three was high and a score of zero indicated no benefit. These criteria are:

- Delay, based upon through trips.
- Cost effectiveness.
- Environmental impacts.
- Safety.
- Fiscal constraints.
- Effects on agricultural lands.
- Indirect costs.
- Funding priorities for the county.

Using these criteria, the alternative investment strategies: rail transportation, light rail transportation and HOV lanes, although important when considered in a corridor analysis context, were eliminated from consideration in the MIS.

Table 1-7 Summary of MIS

Criteria						Project Costs		
Alternatives	User Benefits[1]	Safety Benefits[2]	Envir.[3] Benefits	Local, County, Region perspective[4]	TotalScore	Const. RW Maintenance ($ millions)	Capital Operating & Maintenance ($ millions)	Total Cost ($millions)
No-Build	0	0	2	0	2	$0.0/$0.0/$1.4	~	$1.4
4-Lane on existing alignment	0	1	2	1	4	$5.8/$4.2/$1.9	~	$11.9
2 lane first phase bypass	2	2	1	3	8	$30.2/$9.6/$1.5	~	$41.3
4-lane freeway bypass	3	3	1	2	9	$61.0/$9.6/$1.3	~	$56.1
Commuter Rail	1	0	3	2	6	~	$38.0 $20 for track rights $16.0	$74.0
Intercity Transit Bus Service	1	0	3	2	6	~	$0.3 $6.0	$6.3
TSM/TDM	1	0	3	1	5	~	not available	not available

[1]User Benefits: A measure of Delay savings.
[2]Safety Benefits: Based on amount of savings due to reduced accidents.
[3]Environmental Benefits: Based on the alternatives potential to impact environmental resources.
[4]Local, County and Regional Perspective: Cooperative scoring of alternatives by City of Lincoln, Placer County Public Works and Placer County Transportation Planning Agency.

1.3.10 SR 65 Transportation Concept Report

The Transportation Concept Report (TCR) is a Caltrans long-term planning document that evaluates the conditions of a given state transportation corridor, and establishes a twenty year planning concept. In addition to the twenty-year concept, the TCR also looks at the ultimate transportation concept that examines the corridor needs beyond the twenty-year planning period. Forecasting beyond the twenty-year period is difficult for several reasons such as changes in future land use zoning beyond the scope of the twenty-year general plan build-out and unknown funding constraints. Therefore, any concept identified for the "Ultimate" facility must be considered speculative.

As part of route concept development, the TCR documents the planning strategies of the long-range plans identified by the Regional Transportation Planning Agencies

(RTPA) and Metropolitan Planning Organizations (MPO) within a given state highway route corridor. Since state highway routes often pass through several regional planning agency jurisdictions, the TCR assimilates the regional strategies and consolidates these strategies into one comprehensive corridor-specific document.

A TCR was completed for SR 65 in July 2001. Caltrans is currently revising the TCR and expects to have it completed by 2006. The following is a summary of the July 2001 TCR.

There are three primary sections with unique characteristics along the SR 65 corridor. Different land use classifications and growth potentials govern each segment's level of service (LOS) and classification. The segmentation presented in the TCR, further defines the roadway conditions within these route sections.

The TCR breaks the route into segments based on physical characteristics of the roadway such as number of lanes, whether the road is a freeway or a conventional highway, whether the road is in an urban or a rural setting, or some other tangible change in the roadway from one location to the next. Segments always break on county boundaries. These segments allow the characteristics of the route to be viewed and analyzed in manageable portions based on like characteristics. See figure ii in the summary for locations of streets. SR 65 is divided into six distinct segments, which are:

Segment 1 begins at the interchange of I-80 and SR 65 (PM 4.9) and continues to the Blue Oaks Interchange (PM 8.3). This segment is a limited-access freeway with commercial and retail development on both sides, either currently in use, or planned for the near term. This development includes a regional shopping mall that contributes a significant amount of traffic to the route. Because of the proximity to 1-80 there will be increased stress on the interchange and mainline as traffic both enters and exits SR 65 at this location.

Segment 2 starts at the Blue Oaks interchange and continues to the intersection of SR 65 and Industrial Avenue (PM 11.9). This segment is currently operating as a four-lane expressway with high traffic due to significant industrial development to the west and commercial and residential development to the east. Three major interchanges are planned for this segment to accommodate the rapid growth of traffic volume. The interchanges are all to be financed through local impact fees.

Segment 3 begins at Industrial Avenue and includes the proposed Lincoln Bypass. This new alignment will run generally parallel and to the west of the current route and bypass the City of Lincoln. This will allow a more efficient movement of through traffic than the present route, which travels through the downtown of Lincoln as a "Main Street" with traffic signals and cross traffic. The bypass proposal under consideration will rejoin the current alignment of SR 65 at approximately the county line (PM 24.3). The segment is approximately 12 miles long and is currently operating at a LOS D. The existing

"Main Street" segment is characterized by several unique features, and can reasonably be broken down further into three subsections:

The first subsection includes the portion of the route between the Industrial Avenue intersection and the city limits (PM 13.172). This area is characterized by several large, mixed-use developments. Each of these developments will add significant traffic to the already stressed capacity of SR 65. While the proposed projects contain varying amounts of land devoted to local employment opportunities, it can reasonably be assumed that there will be significant travel to and from other local and regional employment destinations.

The second subsection of this segment begins at Auburn Ravine Bridge and includes the conventional highway that runs through the City of Lincoln. There are signalized intersections and a 25-MPH speed limit through the city. In this segment there is local traffic added to the highway. Due to the turning movements of local traffic along this subsection, congestion is significant. LOS F is observed during PM peak hour within the city limits with several cycles being needed to perform some turning maneuvers. The area is characterized by on- street parking and limited roadway width. Existing sidewalks and businesses make the prospect of acquiring additional ROW in the area beyond Third Street prohibitively expensive. The crossing of Markham Ravine (PM 14.8) marks the end of this subsection. Further study needs to evaluate a new connection between SR 193 and SR 65 once the alignment for the Lincoln Bypass is determined.

The third subsection runs from the northern city limits of Lincoln (approximately at the Markham Ravine Bridge) to the Placer/Yuba county line located on the Bear River and delineated by the Bear River Bridge (PM 24.3). The highway in this segment runs in a northwesterly direction and is a conventional two-lane rural highway that is currently operating at a LOS D. The Bear River Bridge width is non-standard, and widening should be considered as part of the overall route improvement and realignment plan. Depending on the final adoption of an alignment for the Lincoln Bypass, the northern end of the bypass should intersect the existing route within this subsection.

Segment 4 begins at the Bear River, the County line, and continues through the City of Wheatland to the beginning of the freeway at approximately South Beale Road (PM4.7). Although the traffic along this segment is relatively light, congestion exists within the City of Wheatland resulting in delays and contributing to a generally poor level of service. A bypass of Wheatland will generally better facilitate the efficient movement of goods and people along this corridor. A Project Report has been completed for the Wheatland Bypass, however, it is not funded at this time.

Segment 5 begins at south Beale Road (PM 4.7) and goes to the end of SR 65 at the junction with SR 70 (PM 9.3). Traffic along this segment is relatively free flowing and should not need any significant modification to the facility other than routine

maintenance, during the concept period. Local fees are providing the funding for operational improvements to the interchange at this location to help accommodate the expected traffic at peak periods before and after events at the facility.

Segment 6 is the proposed Third Crossing of the Feather River Bridge.

SR 65 serves as a key interregional connector between the rapidly growing south Placer County area and the Marysville Yuba City urban area and, by way of the proposed Third Crossing of the Feather River Bridge, the SR 99/70 corridor. The south Placer County region is one of the fastest growing areas in the State both in terms of housing and economic development. Due to the high growth potential of the areas adjacent to SR 65 (particularly the segments within Placer County) and present and potential future constraints to the physical expansion of the facility, allowances should be made at every opportunity for traffic management options that do not necessitate the physical expansion of the facility. These options may include a greater emphasis on mass transit and congestion management systems such as, but not limited to, ramp metering and HOV lanes.

City, County and State Transportation Plans

City of Lincoln General Plan (1988, 1994 and 1998)

The Lincoln General Plan describes the expected long-term expansion needs of the transportation system to accommodate the growth and development of the city. The General Plan Circulation element designates a route for the SR 65 bypass. The Public Facilities Element of the General Plan, amended in 1994 and again in 1998, serves as a guide for future development and expansion of public facilities. It is also the goal of the city to see a thirty-five percent reduction in trips generated by new employment. Policies that support that goal include Rideshare, public transit funding and improved service and encouraging new development to be pedestrian friendly.

The General Plan stresses the importance of public transit. As Lincoln grows, the routes covered by the Lincoln Transit Service will be expanded to serve newly developed areas. The City will continue requiring private developers to provide for appropriate public transit amenities such as bus turnouts, bus shelters and park and ride lots. If feasible, the City will link up with the Placer County Transit System to provide inter-city transportation for Lincoln residents.

Bicycle traffic is also addressed in the General Plan. Bicycle facilities within the existing City area will be developed as part of individual projects in accordance with Lincoln's adopted bike plan. The City will work with developers to ensure that bicyclists are accommodated as new development occurs.

The Lincoln Airport continues to be an important part of the transportation system in Lincoln, especially as the municipal airports, such as the Phoenix Airport, in north

Sacramento County are closing. Other general aviation airports in Sacramento County are crowded, and Lincoln Airport is the only Placer County airport, which has a large growth capacity. The Lincoln Airport Authority has proposed major improvements to the airport over the next twenty years. These improvements are detailed in the Lincoln Municipal Airport Layout Plan (March 1999).

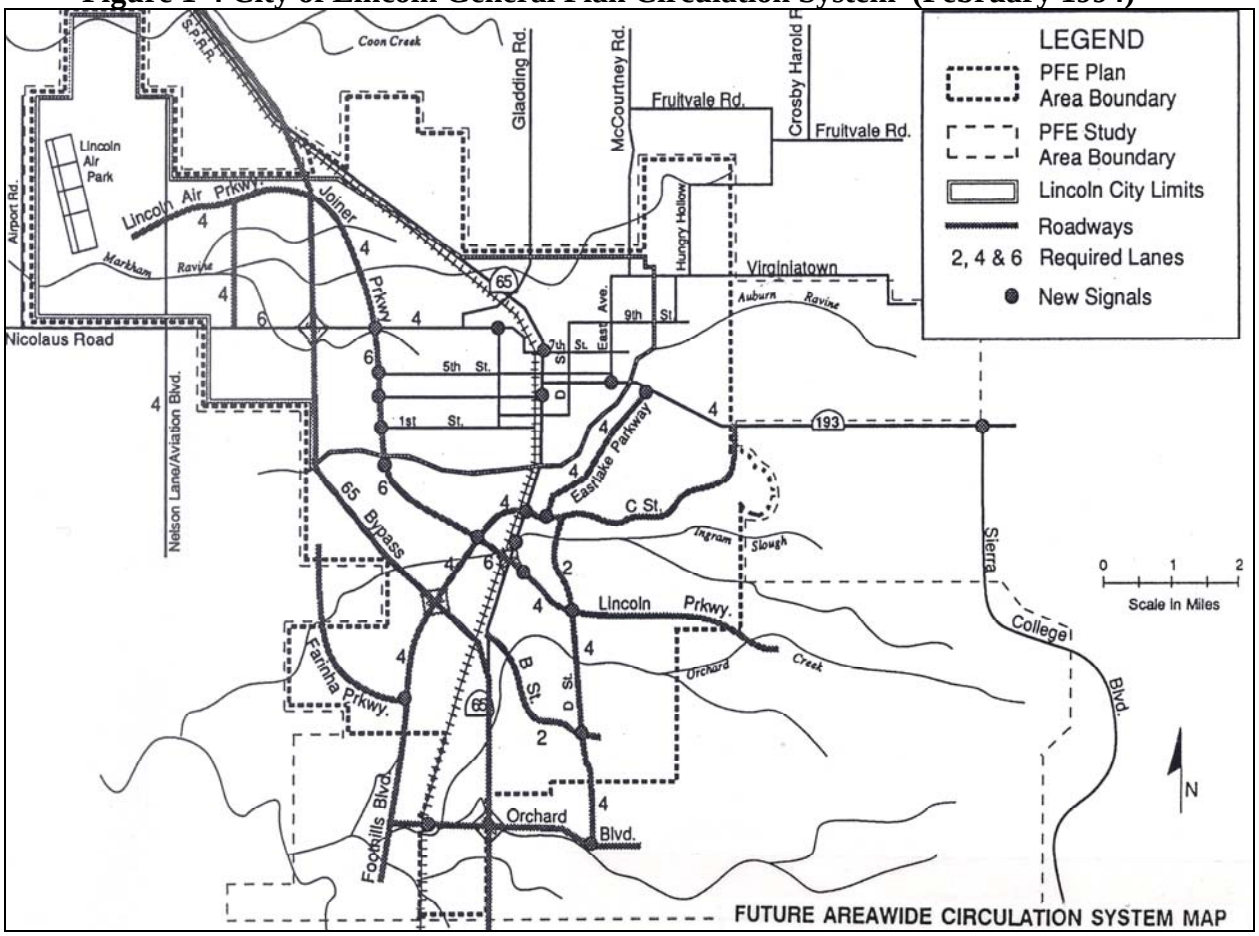
Figure 1-4 shows the future area wide circulation system. In the amended Public Facilities Element, support is affirmed for construction of the SR 65 bypass with interchanges at Ferrari Ranch Road and Nelson Lane (Policy 5.6). In their 1998 update of their Public Facilities Element Policy, the City contends that it "…will continue to place a very high priority on the construction of the Highway 65 Bypass and to aggressively pursue its funding and construction with Caltrans, Placer County Transportation Planning Agency and other appropriate agencies and private sources." It is also the goal of the city to see a thirty-five percent reduction in trips generated by new employment. Policies that support that goal include Rideshare, public transit funding and improved service and encouraging new development to be pedestrian friendly.

Placer County General Plan

SR 65 from Roseville to Lincoln has been designated a *transit corridor* in the Placer County General Plan. The *transit corridor* designation is intended to encourage the development of land use and design standards that promote the viability of high-capacity transit in those corridors where there is a significant amount of undeveloped or re-developable land. As population and employment in southern Placer County increase, there will be greater opportunities for transit use. These opportunities can be maximized with planning aimed at concentrating higher intensity development and ensuring good transit accessibility.

It is the goal of the Transportation and Circulation Element of the Placer County General Plan to provide for the long-range planning and development of the county's roadway system to ensure the safe and efficient movement of people and goods.

Figure 1-4 City of Lincoln General Plan Circulation System (February 1994)



Policy 3.A.15 states that Placer County shall participate with other jurisdictions and Caltrans in the planning and programming of improvements to the State highway system, in accordance with state and federal transportation planning and programming procedures, so as to maintain acceptable levels of service for Placer County residents on all State Highways in the county. Placer County shall participate with the Caltrans and others to maintain adopted LOS standards in proportion to traffic impacts from locally generated traffic.

Placer County Transportation Planning Agency Regional Transportation Plan

Passed by California voters in 1990, Proposition 111 added nine cents per gallon to the state fuel tax to fund local, regional and state transportation projects and services. It also required counties with a population over 50,000 to designate a congestion management agency (CMA). The purpose of the CMA is "to recognize and address the interrelationship between land use, air quality and transportation and to maintain transportation mobility by establishing standards that encourage a balance of

transportation modes." The Placer County Transportation Planning Agency (PCTPA) was designated the CMA for Placer County in 1991. The PCTPA's Congestion Management Program is an alternative transportation outreach effort designed to improve air quality and make maximum use of existing transportation systems. This is discussed in the transportation Systems Management section of the PCTPA's draft 2027 Regional Transportation Plan (RTP).

The RTP is designed to be a blueprint for the development of a balanced, comprehensive, multi-modal transportation system and becomes the Placer County portion of the Sacramento Area Council of Governments (SACOG) Metropolitan Transportation Plan. The RTP includes a policy element that describes the short and long-range goals of the Plan, an action element that describes the programs and actions necessary to implement the Plan and assigns responsibilities and finally, a financial element that summarizes the cost of implementation.

The Action Element identifies short and long-term projects required to meet the goals of the Plan. PCTPA's draft 2027 RTP describes the proposed Lincoln Bypass as a "westerly bypass along SR 65 around the City of Lincoln. The project consists of roughly 12-mile mixed two and four lane facility extending from Industrial Avenue in Lincoln to just north of Sheridan." In short, this proposed projects' preferred alternative design, concept and scope are consistent with the PCTPA's adopted 2022 RTP and draft 2027 RTP. In order to fulfill the goals of the Plan, funding must be secured and the project must be programmed in the Regional Transportation Improvement Program (RTIP).

State Transportation Improvement Program (STIP), Regional Transportation Improvement Program (RTIP) and Interregional Transportation Improvement Program (ITIP)

The State Transportation Improvement Program (STIP) is one of three documents used to allocate funds for individual projects by the California Transportation Commission. Senate Bill 45 (Kopp, 1997), the landmark STIP reform legislation, changed the STIP from nine programs to essentially two; the Regional Improvement Program (RIP) directed by regional transportation planning agencies (RTPA's) and the Interregional Transportation Improvement Program (ITIP) managed by Caltrans. The Regional Transportation Improvement Program (RTIP) and Inter-regional Transportation Improvement Program (ITIP) are the documents containing projects nominated to be adopted into the STIP. The adopted STIP identifies the transportation improvement funding commitments for that cycle.

The proposed project is partially funded and is programmed in the SACOG Metropolitan Transportation Plan (MTP) 2027 which was found to conform by the SACOG Board on March 16, 2006, and FHWA and FTA adopted the air quality

conformity finding on April 20, 2006. The project is also included in the SACOG's financially constrained 2004-2006 MTIP, which was found to conform by FHWA and FTA on April 20, 2006. This proposed project's preferred alternative design, concept and scope are consistent with the above-mentioned documents, the 2004 STIP, and the proposed 2006 STIP.

1.3.11 Other Transportation Projects in the Vicinity

SR 65, Industrial to Auburn Ravine

Two connecting public roads, Sterling Parkway and Ferrari Ranch Road, have been built between Industrial Avenue and Auburn Ravine. Joiner Parkway has been extended and crosses over the railroad tracks and existing SR65 with an overhead/overcrossing. The connection between the existing SR65 and the proposed Ferrari Ranch Road has been constructed. The original connection between Moore Road and SR65 was realigned using the Ferrari Ranch Road intersection.

SR 65, Blue Oaks Boulevard to Industrial Avenue

This project extends from Blue Oaks Blvd. to Industrial Avenue, KP 13.0/21.0 (PM 8.3/12.8). SR 65 was widened from a two lane to a four-lane expressway and an interchange constructed at Twelve Bridges Drive. The interchange, completed in 2003, was a separate project funded jointly by the SR 65 Joint Powers Authority and the city of Rocklin.

Sunset Boulevard Interchange

The project proposes to replace the existing at-grade signalized SR 65/Sunset Boulevard intersection with a grade-separated interchange. The proposed interchange is a modified L-9 partial cloverleaf configuration. The total estimated construction and right of way cost for the improvements varies from $15.6 to $16.5 million. These estimates exclude project development costs. The Project Study Report was approved in July 2000.

Lincoln Parkway

This is a City project that will extend Lincoln Parkway from its current end to Sterling Parkway (i.e. east of SR 65), northwest to Joiner Parkway (west of SR 65). This project will cross SR 65 and the Union Pacific Railroad Tracks with an overhead bridge structure. The structure has been designed to accommodate both the existing SR 65 widening and planned commercial frontage road improvements. The first phase of this project was completed in the fall of 2004.

Wheatland Bypass

Caltrans long-range plans are to construct a bypass around the town of Wheatland, just north of Lincoln and Sheridan. A Project Study Report (a scoping document) has

been prepared. The proposed project extends from the Lincoln Bypass, across the Bear River to KP R39.0 (PM R24.0) on SR 65 in Yuba County, about five miles past Wheatland. The CTC has not programmed this project for even preliminary engineering or environmental studies at this time.

Placer Parkway

The proposed Placer Parkway is a high priority regional transportation project proposed to connect rapidly growing areas of western Placer County to planned development in the Sacramento/Sutter Counties. It is included in the SACOG's 2025 Metropolitan Transportation Plan (MTP) and the 2022 Placer County RTP.

State Routes 70 and 99 Transportation Corridor Study

SR 65 ties into the transportation corridor which encompasses State Routes 70, 99 and 65, connecting Sacramento to the growing cities of Roseville, Rocklin, Lincoln, Marysville/Yuba City and on up through Oroville to Chico.

The SR70/99 Corridor Study (SACOG & BCAG, July 1990) was requested by the California Transportation Commission (CTC) responding to a need to provide the Marysville/Oroville/Chico area with freeway access. The Corridor Study is to be used as the basis for future transportation investments in the area. It evaluated 24 possible freeway alignments between Chico and Sacramento, using either SR 70 or 99 as the principle alignment. A Technical Advisory Committee (TAC) and a Political Advisory Committee (PAC) compared the efficiency, environmental and social impacts and economy of each alternative and recommended further study. Table 1-8 shows transportation projects proposed for the SR 99/70 corridor.

Table 1-8 Proposed Highway Improvement Projects within SR 65, 70/99 Corridor

E.A.*	Co/Route KP (PM)	Description	Estimated Cost ($ in millions, 1990 costs)	Construction Year
40180	Yuba 65 0.8/2.4 (0.5/1.5)	Install Signal and Lights & Perform Roadwork	$0.7 Operations Project	2005
29730	Pla/Yub 65 14.9/2.9 (23.8/4.7)	Wheatland Expressway (gap closure from Lincoln Bypass to existing freeway)	$180	Dependent on Funding
38641	Sutter 70 0.3/8.6 (0.2/5.5)	Construct four-lane expressway, near East Nicolaus from SR 99 to Cornelius Road	$44.5	Dependent on Funding
38642	Sutter 70 8.0/13.3 (5.0/8.3)	Construct 4-lane expressway near Rio Oso from Cornelius Ave. to the Bear River Br.	$51.8 (More programmed)	Dependent on Funding
37610	Yuba 70 1.0/11.2 (0.6/7.0)	Construct 2-lane expressway to 4-lanes, near Marysville, Bear River Bridge to 0.3 mi. south of McGowan Road	$40.0	Completed 2004
2A272	Yuba 70 4.8/6.1 (3.0/3.8)	Construct new Interchange south of existing Algodon Road at Motorplex Parkway	$9.0 Programmed $1.7 to 13.5 Planned	Dependent on Phasing
29730	Yuba 65	Construct two lane expressway and bridge near Yuba	$33.2	Dependent on

E.A.*	Co/Route KP (PM)	Description	Estimated Cost ($ in millions, 1990 costs)	Construction Year
	0.97/11.3 (0.6/7.0)	City, SR 99 to SR 70.	Programmed $118 Planned	Funding
38222 3822U	Butte 149, 70, 99 0.0/7.4 (0.0/4.6)	Construct 4-Lane Expressway and 2 Freeway-to-Freeway Interchanges	$92.4	2006
37230	Yuba 70 13.6/41.5 (8.3/25.8)	Construct Marysville-Oroville expressway on new alignment-Phases 2 and 3	$300	Dependent on Funding
37230	Butte 70 0.00/	Construct Marysville-Oroville expressway on new alignment-Phase 1; includes all PS&E	$17	Dependent on Funding
43490	Sutter 99 20.8/27.7 (12.9/17.2)	Add passing lane and widen near Yuba City from Sacramento Ave. to Central Ave.	$10.2	Completed 2000
1A461	Sutter 99 34.4/41.2 (21.4/25.6)	Sutter 99 Segment 4. Tudor Bypass. Widen to four lanes near Yuba City from Central Ave. to O'Banion	$48.8	Dependent on Funding
1A462	Sutter 99 36.2/45.8 (22.6/28.6)	Widen to four lanes near Yuba City from O'Banion Road to near Lincoln Rd.	$19.6	Completed 2005
1A4320	Sutter 99 18.8/20.8 (11.7/12.9)	Widen to four lanes adding Bridge Capacity (Third Crossing)	$47.7	Dependent on Funding
1A431	Sutter 99 14.0/18.8 (8.7/11.7)	Widen to four lanes from SR 70 to south of the Feather River (Includes PS&E for all phases).	$11.0	2007
1A432	Sutter 99 17.1/23.0 (11.0/14.3)	Segment 2, Feather River Bridge. From 0.3 km north Power Line Rd to 1.0 km north Sacramento Ave	$34.4	Dependent on Funding

* E.A.-Expenditure Authorization, this number identifies the project in the Department's system.

1.3.12 Social Demand/Economic Development

Growth Forecasts

Lincoln was the state's second fastest growing community in 2004, growing at a rate of 16.8%. The City gained 1,966 housing units in 2004, bringing the population to 27,356 in January 2005. The Metropolitan Transportation Plan update, prepared by SACOG in 2002, notes that jobs are spreading out around the region and most new housing is in areas beyond existing urban development. The region is predicted to have three major job centers in 2025: downtown Sacramento/West Sacramento, Rancho Cordova/Folsom, and Roseville/Rocklin and the urban edge will expand to include Lincoln. Currently several major computer technology companies are relocating to the Sacramento Valley, primarily in Roseville and Rocklin. The need to provide congestion relief on SR 65 is related to this pattern of growth.

As land closer to Sacramento becomes built out, areas within commuting distance of the State Capital and other job centers will come under increased pressure to grow, primarily to provide housing. Population growth forecasts for Sacramento County and the SACOG region are reported in Table 1-9.

Employment opportunities are growing in the project area as well. Several major computer technology companies are relocating to the Sacramento Valley, primarily in Roseville and Rocklin. Employment projections for Placer County are shown in Table 1-10.

Table 1-9 Population Growth in SACOG Region (12/16/04)

	2005 *	2010	2015	2020	2025
El Dorado County	**147,045**	**159,422**	**171,212**	**184,496**	**197,875**
Placer County	**301,560**	**330,381**	**358,488**	**390,240**	**422,741**
Unincorporated Placer County	98,158	115,223	133,147	153,557	175,445
Auburn	12,683	13,872	15,027	16,331	17,663
Colfax	1,772	2,019	2,273	2,562	2,867
Lincoln	26,661	28,364	29,883	31,582	33,211
Rocklin	52,035	56,765	61,338	66,498	71,749
Roseville	104,136	107,038	108,692	110,412	111,258
Loomis	6,115	7,101	8,129	9,298	10,548
Sacramento County	**1,361,637**	**1,454,596**	**1,539,049**	**1,633,676**	**1,725,710**
Sutter County	**87,342**	**98,668**	**110,210**	**123,311**	**137,108**
Unincorporated Sutter County	27,743	34,631	42,056	50,532	59,758
Live Oak	6,624	7,387	8,153	9,021	9,927
Yuba City	52,976	56,650	60,001	63,758	67,423
Yolo County	**187,942**	**207,450**	**226,733**	**248,548**	**271,078**
Yuba County	**65,952**	**75,792**	**85,979**	**97,561**	**109,875**
Unincorporated Yuba County	49,338	57,631	66,317	76,203	86,787
Marysville	12,916	13,314	13,563	13,826	13,988
Wheatland	3,698	4,847	6,100	7,531	9,100
Regional Total	**2,151,479**	**2,326,308**	**2,491,671**	**2,677,831**	**2,864,387**

Source: http://www.sacog.org/demographics/projections/files/split/Sacog%20Projections%20Adopted%2012.16.04%20for%20Jurisdictions%202005%20-%202025.xls

*Note that the base year population numbers are estimates made by the State Department of Finance's Demographic Research Unit

Table 1-10 Employment Projections in the SACOG Planning Area (12/16/04)

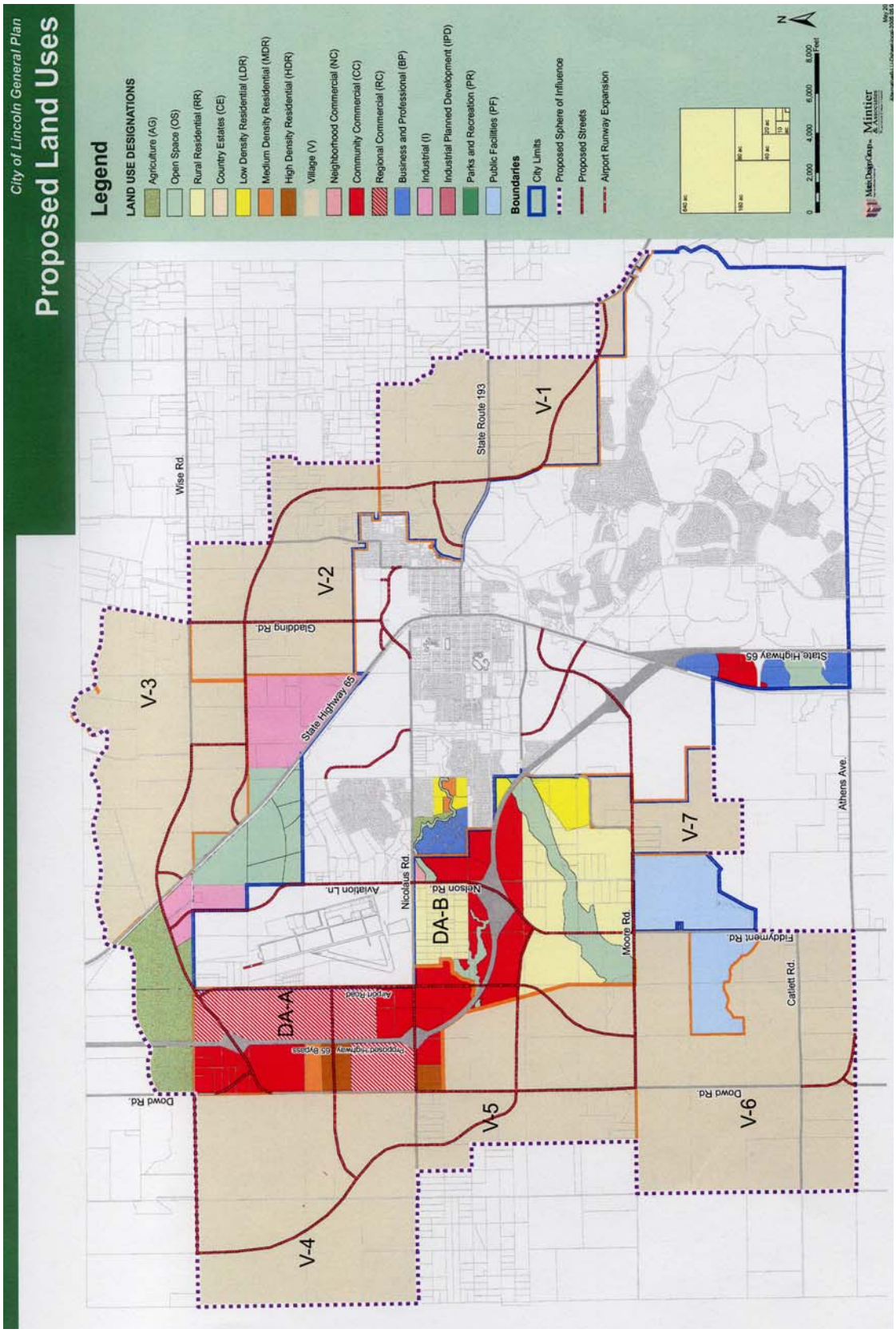
	2005 *	2010	2015	2020	2025
El Dorado County	**51,644**	**58,267**	**60,681**	**63,783**	**66,554**
Placer County	**156,237**	**180,607**	**200,734**	**220,365**	**239,978**
Unincorporated Placer County	50,221	54,127	54,817	55,329	55,279
Auburn	13,417	14,661	15,035	15,405	15,647
Colfax	767	1,054	1,314	1,606	1,918
Lincoln	6,158	8,354	10,499	12,818	15,285
Rocklin	15,003	17,349	19,541	21,585	23,642
Roseville	66,250	80,211	94,649	108,668	123,224

	2005 *	**2010**	**2015**	**2020**	**2025**
Loomis	4,423	4,851	4,879	4,954	4,983
Sacramento County	**657,100**	**734,253**	**777,433**	**820,087**	**858,840**
Sutter County	**33,506**	**38,474**	**41,341**	**44,531**	**47,619**
Unincorporated Sutter County	9,075	10,399	10,881	11,557	12,187
Live Oak	831	1,199	1,564	1,965	2,393
Yuba City	23,600	26,877	28,896	31,009	33,038
Yolo County	**136,347**	**154,707**	**162,775**	**172,497**	**181,493**
Yuba County	**22,988**	**28,751**	**32,236**	**36,738**	**41,391**
Unincorporated Yuba County	13,641	17,833	20,405	23,839	27,435
Marysville	8,982	10,235	10,811	11,504	12,154
Wheatland	365	683	1,020	1,395	1,802
Regional Total	**1,057,823**	**1,195,059**	**1,275,200**	**1,358,000**	**1,435,875**

Source: http://www.sacog.org/demographics/projections/files/split/Sacog%20Projections%20Adopted%2012.16.04%20for%20Jurisdictions%202005%20-%202025.xls

*Note that the base year population numbers are estimates made by the State Department of Finance's Demographic Research Unit

Figure 1-5 Proposed Land Uses Lincoln General Plan (May 2005)



Lincoln General Plan Land Use Element

The City of Lincoln General Plan, prepared in 1988, addresses future growth within the City boundaries and in adjoining areas within the City's sphere of influence. The Planning Area includes approximately 7,776 ha (19,500 acres or 30 square miles) and is generally bordered by Athens Avenue on the south, Sierra College on the east, Fiddyment Road, the Lincoln Airport on the west and Virginia town Road/SR 65/West Wise Road on the north. The City's current General Plan was adopted in September of 1988. The Public Facilities Element was amended in October 1998 and the Housing Element was amended in 1996. The City is currently undertaking a comprehensive General Plan update. Figure 1-5 shows the proposed changes in the land use.

Table 1-11and Table 1-12 summarize the amount of new development that is currently being proposed within the Lincoln Planning Area. Development of these areas at build-out could result in approximately 18,704 new residential units and associated commercial development. Table 1-13 quantifies the land use designations in the Lincoln General Plan.

Table 1-11 City of Lincoln Current Projects List (2005)

Residential Projects
JOINER VILLAGE Planned Development 96 Single-Family Residential Units. Project has received approval of a Tentative Parcel Map, Specific Development Plan and Development Permit, for the development of 9.47 acres located at the northeast comer of Fifth Street and Joiner Parkway.
SYCAMORE VENTURES 13 Single Family Infill Lots. Homes are under construction on Virginiatown Road and Red Leaf Way.
TWELVE BRIDGES AREA C 100 Unit Planned Development with 2 church sites on 50 acres. Project has certification of an E.I.R., a Specific Plan, General Development Plan, approval of Large and Small Lot Tentative Maps, and a Development Agreement with the City.
TWELVE BRIDGES AREA A 4,335 Unit Planned Development on 2,989 acres. Project has certification of an E.I.R., a Specific Plan, General Development Plan, approval of Large and Small Lot Tentative Maps, and a Development Agreement with the City. Several homebuilders have received Design Review approval and have begun construction.
SUN CITY LINCOLN HILLS (Twelve Bridges Area B) 6,800 Unit Planned Development on 2,945 acres. Homes are under construction. Project has certification of an E.I.R., a Specific Plan, General Development Plan, approval of Large and Small Lot Tentative Maps, and a Development Agreement with the City. To date, 6,334 homes have been completed. Project is approved as "age-restricted."
LINCOLN CROSSING 2,958 Unit Planned Development on 1,070 acres. Project has received approval of a Development Agreement, General Development Plan, Specific Development Plan/Development Permit, Large Lot Tentative Subdivision Map and Small Lot Tentative Subdivision Map. Several homebuilders have received Design Review approval and are under construction:

FOSKETT RANCH Planned Development of 323 Units on 290 acres. The project has certification of an Environmental Impact Report (EIR), and approval of the following: a General Plan amendment, a General Development Plan and Development Standards, a Vesting Small and Large Lot Tentative Subdivision Map, Specific Development Plan and Develop Permit for the project. In addition to 102 acres of low- and high-density residential land uses, the project includes 119 acres of Open Space and 58 acres of public/ quasi-public facilities. Two single-family homebuilders have received Design Review approval, and are under construction; the high-density (multi-family) parcel has received Specific Development Plan and Development Permit approval.
LINCOLN HIGHLANDS Annexation Application for 48 acres, 196 Residential Units. The City has approved an application for annexation of a parcel of land at the northeast corner of the City, Certification of a Mitigated Negative Declaration, pre-zoning of the land to R-1 single family residential, and Tentative Subdivision mapping. The City has approved these entitlements, however they are all contingent upon being successfully annexed into the City. Their annexation application is currently submitted to the Local Agency Formation Commission (L.A.F.C.O.) and awaiting a schedule for hearing.
CYPRESS MEADOWS Annexation Application for 20 acres, 84 Residential Units. The City has approved an application for annexation of a parcel of land at the northeast corner of the City, Certification of a Mitigated Negative Declaration, pre-zoning of the land to R-1 single family residential, and Tentative Subdivision mapping. The City has approved these entitlements, however they are all contingent upon being successfully annexed into the City. Their annexation application is currently submitted to the Local Agency Formation Commission (L.A.F.C.O.) and awaiting a schedule for hearing.
WESTERN PLACER EDUCATION FOUNDATION 71-lot single-family homes. The City has approved an amendment to the General Plan, Twelve Bridges Specific Plan and General Development Plan for the Rezone of approximately 26 acres within the southeastern portion of the Twelve Bridges Specific Plan Area A and approvals of a Specific Development Plan/Development Permit and Vesting Tentative Subdivision Map for 71 residential lots.
THREE D SOUTH 185 1ot subdivision on 69.9 acres. The City has approved a General Plan Amendment, Specific Plan Amendment, General Development Plan Amendment, Tentative Subdivision Map, and Specific Development Plan and Development Permit, as well as Design Review approval for the construction of homes on 69.9 acres located along Moore Road, adjacent to and west of the future SR 65 Bypass.
AITKEN RANCH Planned Development of 472 Units on 156 Acres. The City has approved an application for various entitlements including certification of a Final EIR, General Plan Amendment, Rezoning, Adoption of a General Development Plan, Adoptions of a Large- and Small-lot Tentative Subdivision Map, and Specific Development Plan/Development Permit The project is bordered by the Lincoln Crossing Development to the north, south and east with Moore Road to the west. The homebuilder Signature Properties has received Design Review approval for Sorrento, Village I.
LAKESIDE 6 Planned Development of 706 Residential Units on 105 acres. The City has approved an application for various entitlements including certification of a Mitigated Negative Declaration, General Plan Amendment, General Development Plan Amendment, re-zoning of the land from Limited Light Industrial (LLI) to Residential (RD-5 and RD-20), and Tentative Subdivision mapping are all part of the entitlement process.

Commercial & Industrial Projects
BUTTERFIELD BUILDING RENOVATIONS Historic Building Renovations. Project has Design Review approval and building permits for various phases and tenant improvements for the building located on the west side of " G" Street, between Fourth and Fifth Streets. The buildings will be enhanced for retail/ commercial uses and will include multiple tenant spaces and an indoor parking area.
LINCOLN VILLAGE SHOPPING CENTER New Shopping Center. Project has approval of a Specific Development Plan and Development Permit for an approximately 86,760 sq.ft. shopping center. The project is located on 10.1 acres south of Twelve Bridges Drive between East Lincoln Parkway and Fieldstone Drive. Construction is currently underway.
CHEVRON STATION, TWELVE BRIDGES New Gasoline Station, Convenience Store, and Carwash. Project has received approval of a Specific Development Plan and Development Permit as well as a Conditional Use Permit for the 2,945 sq.ft. gas station, mini-mart, and carwash. The project is located on the southwest comer of Twelve Bridges Drive and East Lincoln Parkway within the proposed Lincoln Village Shopping Center and is currently under construction.
STERLING POINTE SHOPPING CENTER New Shopping Center with Supermarket Anchor. Project has approval for a Conditional Use Permit, Specific Development Plan and Development Permit, and Design Review of a 144,000 sq.ft. shopping center with supermarket, outbuildings, restaurants a gas station and associated improvements. The project is located on the northeast comer of SR 65 and Sterling Parkway. Construction is currently underway.
PARKWAY POINTE SHOPPING CENTER New Shopping Center. Project has approval for Specific Development Plan, Development Permit and Tentative Parcel Map for a 179,800 sq.ft. Shopping Center And Associated Improvements. The project is located on the south comer of Sterling Parkway and East Lincoln Parkway.
LINCOLN GATEWAY 18.14 acres of Mixed-Use Property. The proposed project involves a variety of retail, commercial, office, and housing land uses at the comer of SR 65 and First Street. A new post office will be constructed on the Business/Professional portion of the project. The residential portion of the project has been approved for 51 single-family homes.
NICOLAUS RETAIL CENTER Commercial Retail Center. The project has approval of a Specific Plan and Development Permit for two retail buildings and one pad building (the pad building requires Design Review) which totals 20,400 sq.ft. of commercial/ retail building on 2.3 acres adjacent to the previously approved Tower Market on the comer of Nicolaus Road and Lakeside Drive. Construction is underway.
LINCOLN COMMERCIAL CENTER New Shopping Center. Project has approval of a Specific Development Plan and Development Permit for an approximately 118, 763 sq.ft. shopping center with in-line shops, drive-thru restaurant, gas station and several satellite buildings. The project is located on 13.3 acres northwest corner of Twelve Bridges Drive and East Lincoln Parkway.
LINCOLN PRODUCE New 10,700 ft 2 Market and Office Area. Project has Design Review approval for the construction of 10,700 sq.ft. retail building with office space and associated parking lot and landscaping. The building is currently under construction m the northwest comer of East Avenue and McBean Park Drive.
ZISK OFFICE BUILDING Residential conversion to Office space. Project has Design Review approval for the conversion, addition and alteration of an existing tri-plex located at 304 "F" Street into an office building. The project is under construction.
FARRINGTON OFFICE BUILDING New Office Building. Project has Design Review approval for the demolition of an existing residence and construction of a new 8,050 sq.ft. two-story office building at 191"F" Street The building is currently under construction.

CATTA VERDERA COUNTRY CLUB New Private Country Club. The project has approval of a Specific Plan and Development Permit for a 27,000 sq.ft. country club to be located at the easterly terminus of Catta Verdera with access off of Twelve Bridges Drive. (Formerly known as the Twelve Bridges Golf Course.) Construction is underway.
LINCOLN 270 Annexation Application for 278 acres. The City is processing a Draft Environmental Impact Report EIR for the annexation of 278 acres of land located between SR 65 to the east and Industrial Boulevard to the west, bisected by Twelve Bridges Drive. The project is still in the early stages of development.
HOME DEPOT New 106,507 sq.ft. Commercial Building with a 34,646 sq.ft. Outdoor Garden Center. Project has approval of a Specific Development Plan and Development Permit of a 106,507 sq. ft. Home Depot which includes 102,083 sq.ft. of retail area, 2,156 sq.ft. of Professional Will-call area and 2,268 sq.ft. of building material storage area, with a 34,646 sq.ft. outdoor garden center to be located just north of the crossroads of the future SR 65 Bypass and existing SR 65 within Lincoln Crossing. The project is currently under construction.
VOLEN COMMERCIAL BUILDINGS Two new 2-Story 5,032 sq.ft. Commercial Buildings. Project has Design Review approval for the construction of two 1-story 5,032 sq.ft. buildings with office and commercial uses. The proposed buildings are to be located on the east side of "G" Street approximately 100 feet south of Second Street on three vacant lots.
LAVALLEE OFFICE BUILDING New 1,404 sq.ft. Office/Retail Building. Project has Design Review approval for the construction of a 1,404 sq.ft. single-story building located mid-block on the east side of "F" Street between Fifth and Sixth Streets.
Other
ST. JOSEPH'S CATHOLIC CHURCH New 20,851 sq.ft. church. Project has approval of a Specific Development Plan and Development Permit for a 20,851 sq.ft. church building, 4,795 sq.ft. administration building and the subsequent phased additions of associated building and school facilities, in addition to a Conditional Use Permit to allow the steeple to exceed the 50 ft height limit located south of SR 193 along and to the west of Oak Tree Lane.
KAISER PERMANENTE New 75,138 sq.ft. Medical Office Building. Project has approval of a Specific Development Plan and Development Permit for a 2-story 75,138 sq.ft. "community oriented" Medical and Office Building and associated improvements on approximately 10-acres of Employment District (EC-l) land located north of Twelve Bridges Drive and east of SR 65 within the Twelve Bridges Main Village Area. The building has approximately 3,291 sq.ft. set aside for optical sales and approximately 4,171 sq.ft. for an outpatient pharmacy.

Table 1-12 Planned Developments Summary

Twelve Bridges/Sun Citv Lincoln Hills		***Lincoln Crossing***	
Total Acreage:	5,985 ± acres	Total Acreage:	1,069 ± acres
Residential:	2,861 ± acres	Residential:	622 ± acres
	11,235 units		2,958 units
Commercial:	130 ± acres	Commercial:	43 ± acres
Employment Center:	71 ± acres	Open Space/Recreational:	316 ± acres
Open Space/Recreational	2,648 ± acres	Infrastructure:	88 ± acres
Three D		***Sterling Pointe***	
Total Acreage:	104 acres	Total Acreage:	76 ± acres
Residential:	70 acres	Commercial:	54± acres
Open Space/Recreational:	20 ± acres	Natural Preserve:	16± acres
SR 65 Bypass:	13 ± acres	Infrastructure:	6 ± acres

Foskett Ranch		***Aitken Ranch***	
Total Acreage:	291 acres	Total Acreage:	156 ± acres
Residential:	96 ± acres	Residential	
	501units	Low Density:	125 ± acres
Open Space Preserve:	123.2 ± acres		472 units
Light Industrial/Commercial	15.1 acres	High Density:	6 ± acres
School:	3.1 acres	Open Space/recreational:	25 ± acres
Public Lands:	43.2 acres		

Updated 6/22/05, Community Development Department.
Source: http://www.ci.lincoln.ca.us/pagedownloads/Current%20Projects%205-3-05.pdf

The Lincoln General Plan anticipates an increase in the population of Lincoln to anywhere between 19,000 to 39,000 by the year 2010. In 1988, about six square miles (20 percent) of the planning area were developed with residential, industrial, commercial or other developed uses. To accommodate the anticipated growth, the current General Plan designates approximately 35.4 km^2 (22 mi^2) (73 percent) of the Planning Area under these uses (including 12.2 km^2 [7.6 mi^2] designated as urban reserve). The remaining eight square miles (approximately) are designated to remain in agricultural uses including crop production and rangeland. This area is predominantly in the southwest portion of the planning area.

Table 1-13 Lincoln General Plan Land Use Summary

	Southwest			**Southeast**			**West Lincoln City Core**			**Northeast**			**North**		
	DU	**AC**	**DEN**	**DU**	**AC**	**DEN**	**DU**	**AC**	**DEN**	**DU**	**AC**	**DEN**	**DU**	**AC**	**DEN**
Low Density	2072	448.14	4.62	8,266	2554.7	3.24	2,456	574.0	4.28	1,775	510	3.48	~	~	~
Med. Density	744	101.37	7.34	1,585	250.8	6.32	1,226	163	7.52	~	~	~	~	~	~
High Density	464	23.20	20	1,200	87.2	13.76	768	40.0	19.20	~	~	~	~	~	~
Total Res.	3,280	572.71	5.73	11,051	2892.7	3.82	4,450	777.00	5.73	1,775	510	3.48	~	~	~
Industrial	~	268		~	101.6		~	1121		~	~	~	343	~	~
N. C.	~	~	~	~	46.9	~	~	17.7		~	~	~	~	~	~
Gen. Comm.	~	27.7	~	~	120.9	~	~	64.3	~	~	~	~	~	~	~
B/ P	~	14.47	~	~	2.00	~	~	12.0	~	~	~	~	~	~	~
Open Space	~	301.1	~	~	1745.3	~	~	118.1	~	~	65	~	~	~	~
School	~	34.2	~	~	95.1	~	~	90.1	~	~	14	~	~	~	~
Other Public	~	13.4	~	~	16.7	~	~	310.5	~	~	~	~	~	~	~
Parks	~	44.1	~	~	154.8	~	~	65.9	~	~	24	~	~	~	~
Golf Course	~	161.78	~	~	645.7	~	~	~	~	~	~	~	~	~	~
Total	1,437.46			5,821.68			2,576.60			613			343		

DU: Dwelling Units AC: Acres DEN: Density (dwelling units per acre)
NC: Neighborhood Commercial BP: Business/Professional Gen. Comm.: General Commercial
(Lincoln, April 1994)

Placer County General Plan Land Use Element

The SR 65 Lincoln Bypass Study Area lies partially within the City of Lincoln and partially within unincorporated Placer County. Current land use in this portion of Placer County is predominantly agriculture. According to the 1994 County General Plan land use map (updated in 1997), planned land use in the Lincoln area will remain predominantly agricultural for the 10- to 20-year General Plan planning horizon. However, due to the rapid growth in the Lincoln area, land speculation outside the Lincoln sphere of influence has occurred.

Placer County has implemented the Placer Legacy Project. The Placer Legacy Project is intended to develop specific, economically viable implementation programs that focus on the preservation of open spaces in order to maintain the abundance of the existing diverse natural habitats while supporting the economic viability of the County and enhancing property values. The Citizens Advisory Committee, the Interagency Working Group and the Scientific Working Group all work under the umbrella of the Placer Legacy to develop programs where no programs currently exist and strengthen existing programs.

Sutter County General Plan Land Use Element

The total county area in Sutter County is 389,489 acres. This acreage includes farmland and grazing land (agricultural), urban and built land, and other land and water areas. As with many of the counties in the central valley, the pace of urbanization in Sutter County from 1998-2000 increased compared to 1996-98, and a significant amount of farmland was reclassified as being non-cultivated according to California Department of Conservation.

In 1998, 355,920 acres were classified as agricultural and accounted for 91% of the total acreage in Sutter County. In 2000, the amount of land reclassified from agricultural land was 3,733 in 2000. The remaining balance of 352,187 in agricultural acreage represents 90%. According to the California Department of Food and Agriculture, the gross value of Sutter County's agricultural production was nearly $343.5 million in 2000, ranking it 21st among the state's 58 counties.

Sutter County is still predominantly agricultural and County policies, reflected in the General Plan, include preservation of agricultural uses and concentration of development around existing communities. Residential development for the area closest to Lincoln will likely be limited to the rural communities of Rio Oso and East Nicolaus/Trowbridge in the foreseeable future. Table 1-14 summarizes recent land use decisions in Sutter County.

Table 1-14 Sutter County Land Use

Sector	Location	Project	Stage of Development
Commercial	3275 Colusa Hwy	69,860 sf Self Storage	Planned
Commercial	6788 Colusa Hwy	3,360 sf Warehouse	Planned
Commercial	Eager Road	12,059 sf Church Multipurpose Bldg	Planned
Commercial	1268 Stewart Road	96,000 sf Mini-Storage	Under Construction
Commercial	1265 Hunn Road	7,000sf Car Wash	Completed
Commercial	1258 O'Banion Road	7,200 sf Trucking Business	Completed
Commercial	3079 Riviera Road	3,400 sf Veterinary Clinic	Completed
Office	3593 Pennington Road	3,312 sf Office Building	Planned
Office	Live Oak Blvd.	64,866 sf Government Office Bldg	Planned
Industrial	Seymour & Knights Road	27,200 sf Warehouse/Greenhouse	Planned
Education	El Margarita Road	New High School	Under Construction

Source: Economic Development Corporation @ http://www.ysedc.org/

The General Plan designates up to 1417.5 ha (3,500 ac) of the southern portion of the County, adjacent to Sacramento County, for future industrial/commercial development. This area is so designated because of its proximity to transportation corridors (SR 70 and 99) and the Sacramento Airport.

Unincorporated Yuba County

The Yuba County General Plan, adopted in 1996, addresses a 20-year planning horizon. The 1995 population was estimated at 64,096. This population is expected to grow to 95,000 by 2015. Yuba County includes the incorporated city of Wheatland and the unincorporated communities of Olivehurst and Linda. Table 1-15 describes land use decisions made by Yuba County. Most future growth is expected to occur within these established communities.

Table 1-15 Developments in Yuba County

Sector	Location	Project	Stage of Development
Commercial	Linda	Wal-Mart 150,000 sf retail center	Completed
Industrial	Yuba County Airport	Siller Brothers 10,000 sf hangar	Planned
Industrial	Yuba County Airport	PFI /Bolin 4-acre Storage Yard	Planned

Sector	Location	Project	Stage of Development
Industrial	Yuba County Airport	Century Cedar Log Homes, 10,000 sf manufacturing facility	Planned
Industrial	Yuba County Airport	Schmidt Construction 20,000+ sf jet service facility	Planned
Industrial	Yuba County Airport	Protégé Builders 10,000 sf manufacturing facility	Planned
Industrial	Yuba County Airport	Concrete Inc. 10,000 sf facility	Planned
Industrial	Yuba County Airport	Patterson Construction 10,000 sf manufacturing facility	Planned
Industrial	Yuba County Airport	8-7,000 sf warehouse/light industrial bldgs.	Under Construction
Industrial	Yuba County Airport	D & D Cabinets 70,000 sf manufacturing facility	Under Construction
Industrial	Yuba County Airport	20,000 sf corporate hangar for 6 aircraft	Completed
Industrial	Feather River Blvd.	Shoei Foods 30,000 sf warehouse expansion	Completed
Industrial	Yuba County Airport	Hanson Truss 30,000 sf manufacturing facility	Completed
Residential	North Arboga	Crossroads 148 units	Planned
Residential	East Linda	Spring View Estates 470 units	Planned
Residential	Linda	East Linda Estates 23 units	Planned
Residential	North Arboga	Housing Project 383 units	Planned
Residential	Olivehurst	Housing Project 8 units	Planned
Residential	Plumas Lake	Housing Project 234 units	Planned
Residential	Plumas Lake	Draper Ranch South 238 units	Planned
Residential	North Arboga	Draper Ranch North 590 units	Planned
Residential	Loma Rica/Browns Valley	Housing Project 31 units	Planned
Residential	North Arboga	Thoroughbred Acres 492 units	Planned
Residential	East Linda	Butler Estates 204 units	Planned
Residential	Linda	College Park 66 units	Planned
Residential	Plumas Lake	Fairway Downs West 44 units	Planned
Residential	Plumas Lake	Wheeler Ranch Partners 1140 units	Planned
Residential	Plumas Lake	Woodside Village 590 units	Planned
Residential	North Arboga	Pheasant Pointe 125 units	Planned
Residential	Plumas Lake	Riverside Meadows 878 units	Planned

Sector	Location	Project	Stage of Development
Residential	Plumas Lake	Fairway Downs West 44 units	Planned
Residential	Plumas Lake	Rio Del Oro 1581 units	Planned
Residential	Plumas Lake	The Greens 20 units	Planned
Residential	East Linda	College View 86 units	Planned
Residential	Plumas Lake	Creekside Village 159 units	Planned
Residential	Browns Valley	Housing Project 32 units	Planned
Residential	Plumas Lake	Sawyer's Landing 205 units	Planned
Residential	East Linda	Rothwell Estates 44 units	Planned
Residential	Plumas Lake	The Meadows 383 units	Planned
Residential	East Linda	Sierra Vista108 units	Planned
Residential	Linda	Normandy Estates 13 units	Planned
Residential	North Arboga	Mapleton 180 units	Planned
Residential	Linda	Martha Estates 14 units	Planned
Residential	Plumas Lake	River Oaks North 107 units	Planned
Residential	East Linda	Quail Hollow 183 units	Planned
Residential	East Linda	Sutter Meadows at Edgewater 1358 units	Under Construction
Residential	North Arboga	River Glen 294 units	Under Construction

Source: Economic Development Corporation @ http://www.ysedc.org/

At General Plan build-out, about 49,005 ha (121,000 ac) would be under Valley Agriculture use. The General Plan calls for retaining agriculture as the primary land use in this area and protecting the agricultural community from encroachments that "would be injurious to the physical and economic well being of the agricultural community." The Yuba River corridor lies along the northern boundary of the Community Impact Study Area. (See Section 3-11 in Chapter 3) The General Plan calls for maintaining this open space corridor while accommodating compatible recreation and wildlife uses.

The Yuba County General Plan anticipates highway improvement projects, including improvements to SR 70 and the SR 65 bypass around the City of Wheatland.

City of Wheatland

The City of Wheatland, located on SR 65 about 1.6 km (1 mi) north of the Bear River, had an estimated population of about 3,180 in January 2004. (Source: California

Dept. of Finance, E-1 City/County Population Estimates, May 2004) Beale Air Force Base, located about 12.9 km (8 mi) northeast of Wheatland, has had a major influence on the growth of Wheatland and all of Yuba County.

The dominant land use in the Wheatland area is agriculture, primarily irrigated crops and orchards. The Wheatland General Plan (1980) recognizes the importance of agriculture to this rural community and sets goals of preserving the highest quality agricultural lands for agriculture and open space uses. Rivers, creeks and sloughs are also recognized as valuable resources and are designated for conservation and protection from urbanization.

In response to increasing development pressure in the early 1990s, the City of Wheatland prepared a 1995 Specific Plan to address future development of approximately 86.7 ha (214 ac) of vacant land within the northern half of the City. Full build-out of the Specific Plan area would yield a theoretical population of about 5,000 people within the current Wheatland city limits. The Wheatland General Plan anticipates construction of a freeway bypass of the city.

In 2004, there were 204 ha (504 ac) of land within the city limits (increases in acreage due to land annexations). Land uses are identified as single family residential, multi-family residential, commercial, industrial, public, parks, roads and infrastructure, and vacant. The following table list acreages of existing land use within the City of Wheatland.

Table 1-16 Acreages of the City of Wheatland Existing Land Uses

Land Use Designations	Acres	Percent Total
Single Family Residential	201.92	40%
Multi-Family Residential	22.54	4%
Commercial	16.94	3%
Industrial	0.79	1%
Public	87.71	17%
Parks	9.45	2%
Roads and Infrastructure	81.63	16%
Vacant	83.04	17%
Total	504.02	100%

Based on GIS database information, 2004. General Plan Update, Public Review Draft Background Report, July 2, 2004. http://www.jlmintier.com/wheatland.htm

Although the 1980 General Plan anticipates capacity for 5,500 people within the city limits, the City anticipates growth that will require future annexations. The City of Wheatland is currently undergoing a General Plan update and is anticipated to have this document completed by the end of 2005. The Yuba County General Plan designates all of the unincorporated land within the Wheatland General Plan Update Study Area as

Valley Agriculture. The General Plan anticipates replacing this designation with designations that are consistent with the City's designations, when the City of Wheatland adopts its updated plan.

The City of Wheatland's Sphere of Influence (ultimate size) is 2 miles north of the Bear River and 7 miles between Camp Far West Road and ACE Hardware, which is approximately 10,000 acres. The City's current General Plan was completed in 1980 with updates to the Land Use and Circulation Elements in 1986. The Housing Element was updated in 1992. In 1990, the City completed a Specific Plan for the vacant parcels within the City limits.

The City of Wheatland current incorporated area is approximately 500 acres. The 1980 Wheatland General Plan projected development potential of 1, 500 dwelling units with a projected population of 4,300. As of December 31, 2003, Wheatland had 1,163 residential dwelling units based on a City Public Works Department's Residential Survey dated May 2003 and building permits issued from May 2003 through December 2003. The City of Wheatland is experiencing a considerable amount of population growth and is anticipating this trend will continue for the next few years. Figure 1-6 shows the preferred land use alternative as found in the Wheatland General Plan Update. Table 1-17 gives the reader a sense of Wheatland in comparison to Yuba County and Marysville.

Table 1-17 Wheatland in comparison to Yuba County and Marysville

	Population [1]	Housing [1]	Persons Per Household [1]
County of Yuba [2]	47,646	17,165	3.040
City of Marysville	12,512	5,005	2.537
City of Wheatland	2,689	945	2.958
Total	62,847	23,115	2.924

1 Source CA Dept of Finance E5 Estimates dated 1-1-03,
2 Unincorporated Development Activity

Figure 1-6 Preferred Land Use, Wheatland General Plan Update

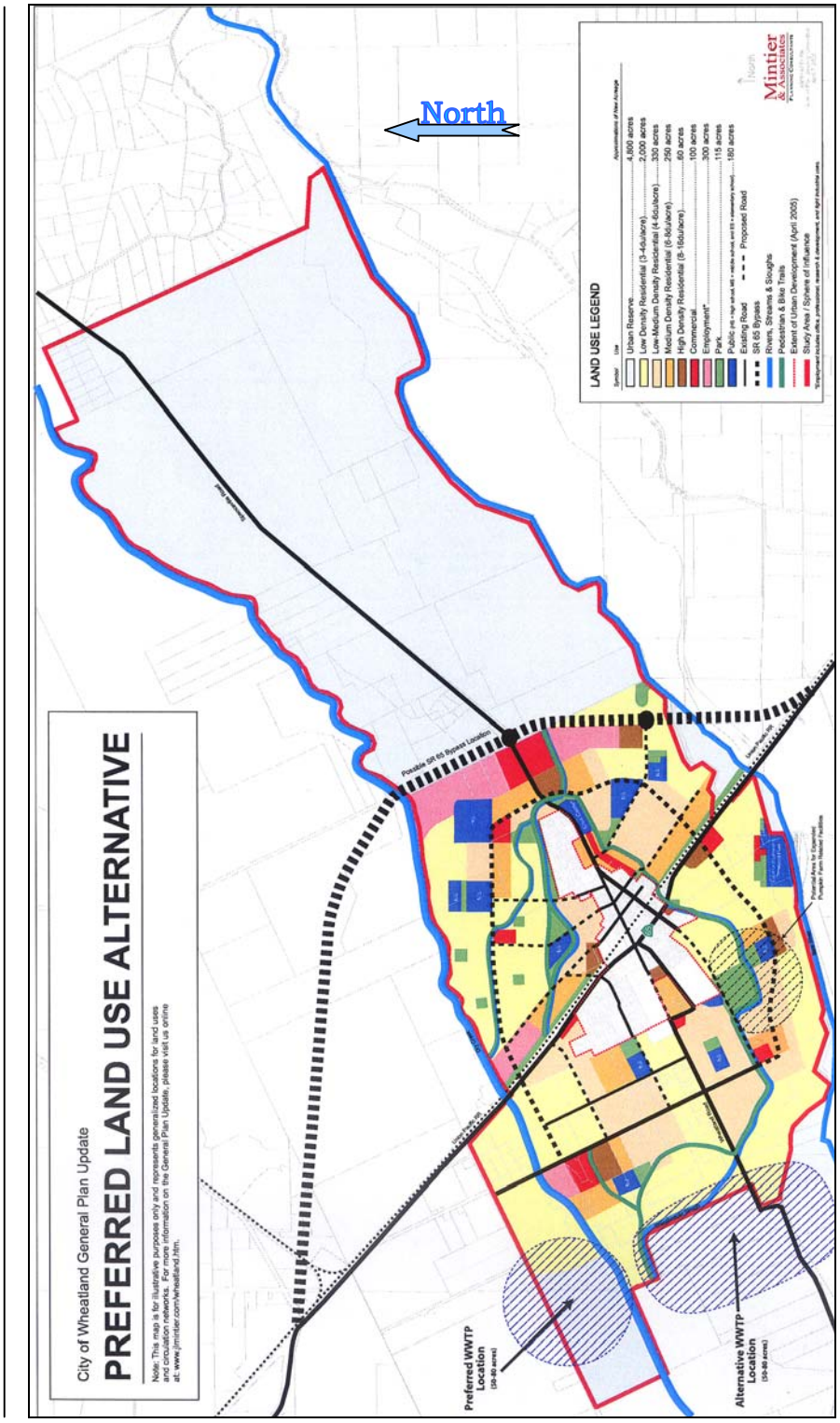


Table 1-18 Developments in the City Of Wheatland (June 2005, from Yuba/Sutter Economic Development Corporation)

Sector	Location	Project	Stage of Development
Commercial	NW corner of SR 65 and McDevitt Dr.	Settlers Village, 45560 sf	Planned
Residential	North of the terminus of E Street and Nichols Drive	Nichols Ranch Residential & Commercial project - 485 ac	Planned
Residential	North of Wheatland Ranch	Powell Estates - 100 ac	Planned
Residential	South of Jones Ranch	JTS Communities - 179 ac	Planned
Residential	West of Almond Estates. North and south of Wheatland Road	Wheatland Ventures LLC - 285 ac	Planned
Residential	Southwest of Jones Ranch	C. W. Stineman & Sons – 100 ac	Planned
Residential	West of Heritage Oaks	James Sohrakoff - 99 ac	Planned
Residential	Southside of Wheatland Road between High School and ACE Hardware	Jones Ranch - 552 units on 191 ac	Permitted
Residential/ Commercial	Westside of SR 65 between Main St. and Bear River	Heritage Oaks Estates - 778 units & 120,000 sf commercial - 234 ac	Permitted
Residential	Westside of SR 65, north of Evergreen Dr	Almond Estates - 169 units- 45.5 ac	Permitted
Residential	McDevitt Dr & Spruce Ave	Park Place - 201 units - 52.46 ac	Completed
Residential	Rose Avenue and Star Ct/Wolf Ct	Premier Grove - 49 units -9.9 ac	Completed
Residential	North side of Main Street at McCurry Street	Wheatland Ranch 188 units - 47.06 ac	Completed
Residential	NE of Wheatland	Wilson Ranch, 1,500 ac	Planned
Education		Bear River Middle School 940 Students	Planned

Source: Yuba Sutter Economic Development Corporation http://www.ysedc.org/\

1.3.13 Flooding and Route closure

Temporary closures of SR 65 occurred approximately 41 times between 1980 and 2003 due to maintenance activities (4 times), flooding (7 times), vehicle collisions (24 times), railroad maintenance/derailment (2 times), and 4 times for other miscellaneous activities.

The proposed route goes through areas subject to flooding. Flooding has occurred within the city limits of Lincoln, primarily around Sixth Street during the flooding in

1990, 1995 and 1997. While this project would not prevent flooding in the town of Lincoln, it would provide an alternative route in the event that the existing SR 65 is closed again due to flooding. The proposed project will be designed and constructed with the flooding potential in mind to avoid the possibility of a flood closure on the bypass. See Section 4.8 in Chapter 4 for more information on floodplain encroachment.

Table 1-19 Route Closures

Postmile	Location	Reason	Duration of Closure
9.5/12.8	Sunset and Industrial Ave.	Pipe bomb	1.3 hours
9.5/12.9	Between Placer Blvd. and Industrial Avenue	Accident-eight fatalities	4 hours
9.5/13.0	Sunset Blvd. to Industrial Ave.	Road rehabilitation	2.5 hours
9.5/13.7	Sunset to SR 193	Flooding	6.75 hours
12.0	One mile north of Lincoln	Accident	0.5 hour
12.3	One mile south of Lincoln	Truck accident, two fatalities	3.2 hours
12.8	South of Lincoln	Accident- one fatality	3 hours
12.8	Industrial Avenue	Accident-two fatalities	0.5 hour
13.1	Moore Rd.	Flooding	1.4 hours
13.1	Moore Rd.	Accident-one fatality	2.5 hours
13.1	Moore Rd.	Accident	1.1 hours
13.4	1st St.	Accident	2 hours
13.4	1st St.	Truck accident	2 hours
13.7	Junction of SR 193	Truck accident	1.25 hours
13.7	Junction of SR 193	Drill testing. Planned closure	12 hours
13.7	Junction of SR 193	Flooding	2.5 hours
13.8/14.0	Between 4th and 5th St.	Filming a movie	5.5 hours
13.8/14.0	Between 4th and 5th St.	Southern Pacific RR realigning a spur track.	6.75 hours
13.8	5th St.	Hazardous waste spill	7.5 hours
13.8	5th St.	Ruptured water main.	1.1 hours
13.9	6th St.	Flooding	4.5 hours
13.9	6th St.	Flooding	3.75 hours
13.9	6th St.	Flooding	2.25 hours
14.4	Gladding Rd.	Accident	0.5 hour
14.4	Gladding Rd.	Accident –one fatality	2.75 hours
17.3/21.6	3-7 miles south of Lincoln	Accident, two fatalities	1.6 hours
20.9/21.7	Sheridan Rail Road crossing	Train derailment	2.5 hours
21.5	Bear River Bridge	Accident	1.3 hours
21.6	South of Sheridan	Four vehicle accident	1.5 hours
22.9	2 miles south of Wheatland	Accident, one fatality	1 hour
23.4	South Beale Rd.	Major flood in Linda	16.3 hours

2 PROPOSED ALTERNATIVES

Using comments from the City of Lincoln, Placer County, the Resource Agencies including U.S. Environmental Protection Agency (EPA), U.S. Fish and Wildlife Service (FWS) and U.S. Army Corps of Engineers (ACOE) and the community, Caltrans and FHWA developed numerous alternatives to meet the transportation needs of the community while preserving the natural habitat of the area. The preferred alternative (D13 North Modified) was selected based on the extent to which the project met the stated purpose and need, design standards, public input, comparison of the environmental impacts, comments received at the public hearing and by correspondence and is the least environmentally damaging practicable alternative.

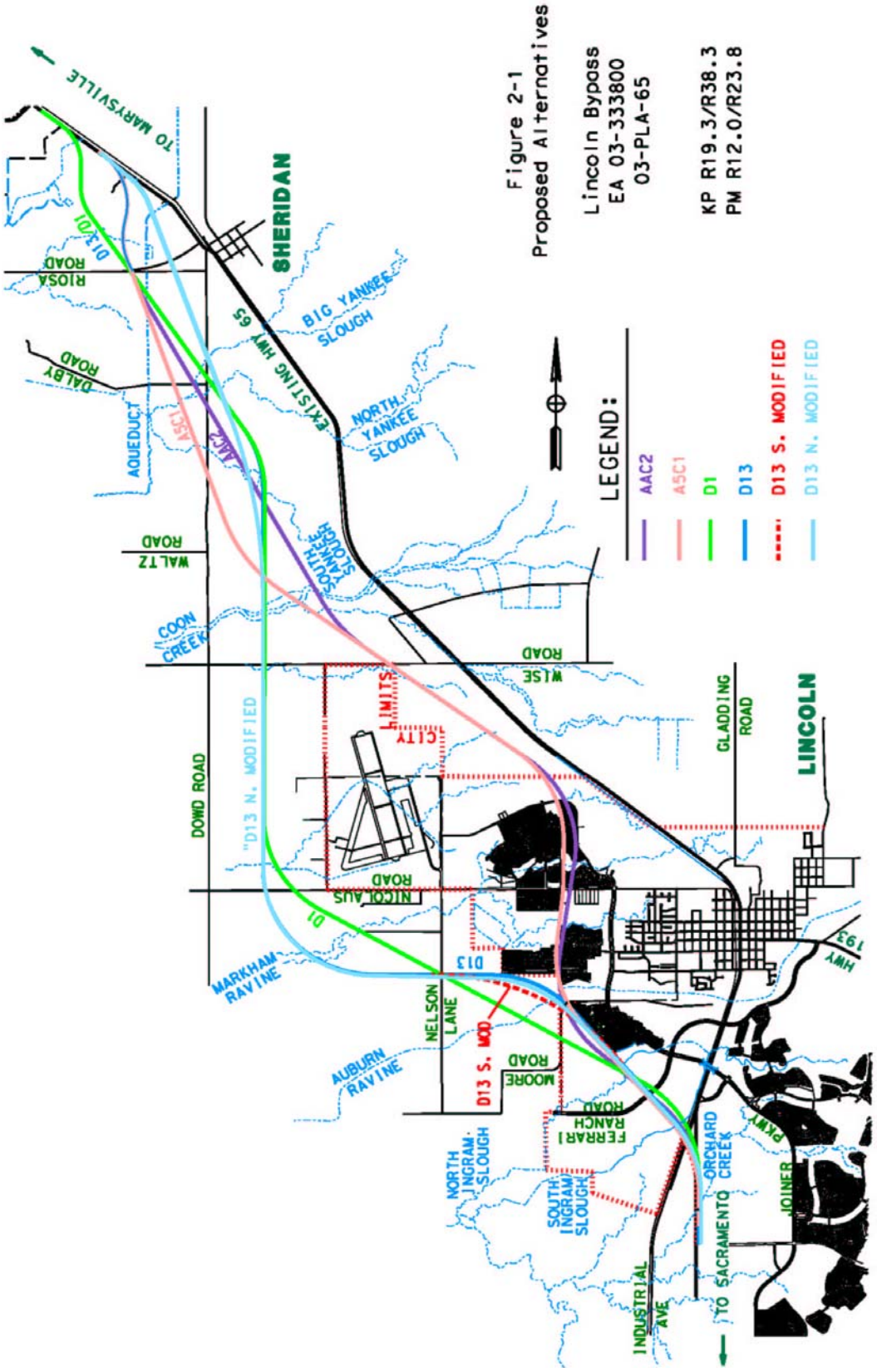
The Draft environmental document considered seven alternatives: the "No Build" and six "Build Alternatives": A5C1, AAC2, D1, D13, D13 South Modified and D13 North Modified. Considerable effort went into designing a facility that minimized impacts to the wetland areas and residences while providing adequate relief from traffic congestion and improving inter-regional movement of goods and services.

The following screening criteria considered necessary to achieve the project's purpose and need were developed in cooperation with the FWS, the ACOE and the EPA:

- The project should improve service levels and maintain, at a minimum, LOS D in the project area through the year 2025.
- The project should improve and maintain traffic and pedestrian safety in the project area.
- The project should minimize displacement of existing residences and businesses.
- The project should minimize impacts to wetlands and listed species.
- The project should be constructed at a reasonable cost.

The alternatives discussed below and shown in Figure 2-1 were developed with these screening criteria in mind. A full range of alternatives that included a highway bypass, non-highway options or improving the existing alignment though the City of Lincoln were investigated through the Major Investment Study (MIS). Some of these approaches either did not meet the project's purpose or need, or did not meet some or all of the screening criteria. These alternatives are described in the section labeled "Alternatives Withdrawn From Consideration" which follows this section.

Figure 2-1 Draft EIS/R Proposed Alternatives



2.1 ANALYZED ALTERNATIVES

Seven alternatives were evaluated and described in the Draft EIS/R, the "No Build," AAC2, A5C1, D1, D13 and D13 South Modified and D13 North Modified. The alternatives are described below and shown on Figure 2-1, Proposed Alternatives. Ten more were briefly described but rejected in the Draft EIS/R, they are described in Section 2.2, at the end of this chapter. Below are brief descriptions of the alternatives evaluated in the Draft EIS/R and the reason they were not chosen as the preferred alternative. Table 2-4 summarizes the impacts each alternative has on land use, wetlands, natural resources and right-of-way impacts as well as compares the cost of each alternative.

2.1.1 No Build

The "No Build" alternative would be to not build the project. However, routine maintenance and operational improvements would continue. If the "No Build" alternative were chosen, congestion would continue in the City of Lincoln. The Level of Service would continue to deteriorate to a LOS F within the city limits.

The new development occurring south and southwest of Lincoln that is currently approved will be built whether or not the bypass is constructed. With the additional development, traffic is expected to almost double by the year 2025. For more information on existing and future traffic, please see Chapter 1, Section 1.3.2.

The "No Build" alternative does not address the purpose and need of the project. Congestion will increase as the area develops. The already high accident rate can be expected to rise as congestion increases. Regional trips will be increasingly delayed and the level of service will decrease.

Two additional road connections between Industrial Avenue and Auburn Ravine included in the City's General Plan, Ferrari Ranch Road and Lincoln Parkway, will provide access to newly developing areas. These connections will also result in a lower level of service on the existing facility.

2.1.2 AAC2 and A5C1

The combined A and C corridor alternatives begin approximately 0.5 km (0.3 mi) south of Industrial Ave. The alignments curve in a northwesterly direction and proceed over Industrial Ave. and the Union Pacific Rail Road (UPRR) tracks. The alignments create cul-de-sacs at Moore Road. The alignments then turn in a northeasterly direction approximately 2.4 km (1.5 mi) west of the existing SR65.

Near Nicolaus Road, the AAC2 and A5C1 alignments are located east of Lakeside Dr. by approximately 335 m (1100 ft) and 230 m (750 ft), respectively. From Nicolaus Road, the AAC2 and A5C1 alignments continue along Corridor AC on a north-northeast

bearing until the point where they were near the UPRR tracks. At this location, the alignments curve to the west.

The A5C1 and AAC2 alternatives share the same alignment for approximately 2.5-km (1.6 mi). Just south of Coon Creek, the AAC2 alignment stays roughly parallel with existing SR65, while the A5C1 alignment veers northwest for about 1470 m (4800 ft), then veered north, eventually merging with the AAC2 alignment at Riosa Road. These alignments continue north where they tie back into the existing facility approximately 2 km north of Sheridan. The A5C1 has less right-of-way impact on the farmland north of Wise Road than alternative AAC2. Under these alternatives, right-of-way for future interchanges would have been acquired at Wise and Riosa Roads.

These alternatives provide four lanes from just south of Industrial Avenue to Nicolaus Road. North of Nicolaus Road, the bypass provide 2-lanes up to the northern tie-in with existing SR65 near Sheridan. Industrial Avenue and Nicolaus Road have interchanges and at-grade intersections would be constructed at Wise Road and Riosa Road and an undercrossing at Dowd Road. These alternatives include bridges at Industrial Ave., Ingram Slough, proposed Ferrari Ranch Road, Auburn Ravine, Markham Ravine, Coon Creek, Yankee Slough, Big Yankees Slough and the SSWD Aqueduct.

The disadvantage of the AC alignments is that they go through areas supporting high quality vernal pools. In addition, since these alternatives were developed, numerous housing developments have been constructed in the path of these alternatives. An additional 461 to 469 residents would have been directly impacted. In addition to increased impacts on local residents, there would have been the associated increase in right-of-way costs and possible soundwalls.

2.1.3 D1 Alternative

The D1 alternative begins at the same location south of Industrial Avenue as the AC alignments. The alignment crosses the railroad tracks and turns in a northwesterly direction, proceeding to the west side of the Lincoln Airport. From near Auburn Ravine to west of the airport, the D1 alignment passes through an area of scattered single-family dwellings. This alignment would require five to ten residential acquisitions and may be sufficiently close to as many as ten other residences requiring soundwalls for noise abatement.

West of the airport near Nicolaus Road, the D1 alignment veers north towards Waltz Road. After Waltz Rd., the D1 alignment turns northwesterly towards Sheridan, parallel to and about 610 m (2000 ft) west of the existing SR 65. North of Sheridan, the D1 alignment would connect with the existing SR 65 west of the railroad tracks. This would avoid crossing the railroad tracks at the north end of the proposed bypass.

Under this alternative, right-of-way for future interchanges would be acquired at Nelson Lane, Wise Road and Riosa Road. The Nelson Lane Interchange would serve

Lincoln Airpark and Nelson Lane would need to be improved at a local cost to handle the increased traffic.

Initially, this alternative would provide four lanes from just south of Industrial Avenue to Nelson Lane. North of Nelson Lane, the bypass would provide 2-lanes up to the northern tie-in with existing SR65 near Sheridan. Industrial Avenue would be a partial interchange and at-grade intersections would have been constructed at Nelson Lane, Wise Road and Riosa Road. This alternative would have included an undercrossing at Dowd Road and overcrossing at Nicolaus Road. This alternative also would have included bridges at Industrial Ave., Ingram Slough, proposed Ferrari Ranch Road, Auburn Ravine, Markham Ravine, Coon Creek, Yankee Slough, Big Yankees Slough and the SSWD Aqueduct.

The D1 alternative was eliminated due to higher impacts on high value marsh, additional residents and businesses would be affected, and negative public response from the Rockwell Lane community.

2.1.4 D13 Alternative

The D13 alignment was developed in response to public reaction to the D1 alignment impacts to residences on Rockwell Lane and in an effort to reduce impacts to wetlands at the south end of the bypass. The D13 Alternative begins 0.5 km (0.3 mi) south of the intersection of existing SR65 and Industrial Avenue at approximate kilometer post 19.9 (PM R12.4). This alignment deviates from existing SR65 just south of its intersection with Industrial Avenue. Crossing over Industrial Avenue and the Union Pacific Transportation Company's tracks, the D13 alignment proceeds in a westerly direction. The alignment bisects Moore Road and intersects Nelson Lane before turning to the north crossing Nicolaus Road and passing the Lincoln Airport to the west. The alignment continues in a northerly direction for approximately 5.6 km (3.5 mi) parallel to Dowd Road before swinging in the northwest direction, crossing Dowd Rd approximately 91.4 m (300 ft) north of Dalby Road. Continuing in a northwest direction, the alignment intersects Riosa Road and rejoins the existing SR65 0.2-km (0.1 mi) south of the Bear River. The D13 alignment measures 20.6 km (12.8 mi) in total length.

As in the D1 alternative, right-of-way for future interchanges would be acquired at Nelson Lane, Wise Road and Riosa Road. The Nelson Lane Interchange would have served the Lincoln Airpark; therefore, Nelson Lane would have needed to be reconstructed to handle the increased traffic.

Initially, this alternative would provide four lanes from just south of Industrial Avenue to Nelson Lane. North of Nelson Lane, the bypass would provide 2-lanes up to the northern tie-in with existing SR65 near Sheridan. Industrial Avenue would be a partial interchange and at-grade intersections would have been constructed at Nelson Lane, Wise

Road and Riosa Road. This alternative would include an undercrossing at Dowd Road and overcrossing at Nicolaus Road. This alternative would include bridges at Industrial Ave., Ingram Slough, proposed Ferrari Ranch Road, Auburn Ravine, Markham Ravine, Coon Creek, Yankee Slough, Big Yankees Slough and the SSWD Aqueduct.

The D13 alternative was not chosen as the preferred alternative due to impacts to the USDA Wetland Conservation Easement near Sheridan. In addition, higher impacts to marsh, agricultural land and businesses would occur.

2.1.5 D13 South Modified

The D13 South Modified was developed in response to the open house of September 22, 1999. Area citizens proposed a plan that would move the D13 alternative further away from the residential development located near Auburn Ravine and First Street. The proposal required using the D1 alignment from Industrial Avenue to Nelson Lane and D13 from Nelson Lane to the end of the project. This public proposal was presented to the City of Lincoln. The Project Development Team (PDT) decided to maintain the D13 alignment along this development up to the vicinity of Moore Road. From this point, this alignment separates from D13 to the southwest and ties back in to the D13 alignment just west of Nelson Road. (See Figure 2-2)

The D 13 South Modified was developed to move the D13 alignment away from the Brookview and Park Estates subdivisions. Consequently, by moving the alignment away from the subdivision, several structures and homes at and near a working ranch would have been affected.

Initially, this alternative would provide four lanes from just south of Industrial Avenue to Nelson Lane. North of Nelson Lane, the bypass would provide two lanes up to the northern tie-in with existing SR65 near Sheridan. Industrial Avenue would be a partial interchange and at-grade intersections would be constructed at Nelson Lane, Wise Road and Riosa Road. This alternative includes an undercrossing at Dowd Road and overcrossing at Nicolaus Road. This alternative also has bridges at Industrial Avenue, Ingram Slough, proposed Ferrari Ranch Road, Auburn Ravine, Markham Ravine, Coon Creek, Yankee Slough, Big Yankees Slough and the SSWD Aqueduct.

This alternative was eliminated due to the impact on the USDA Wetland Conservation Easement property and increased impacts to waters of the US and wetlands.

Figure 2-2 D 13 South Modified

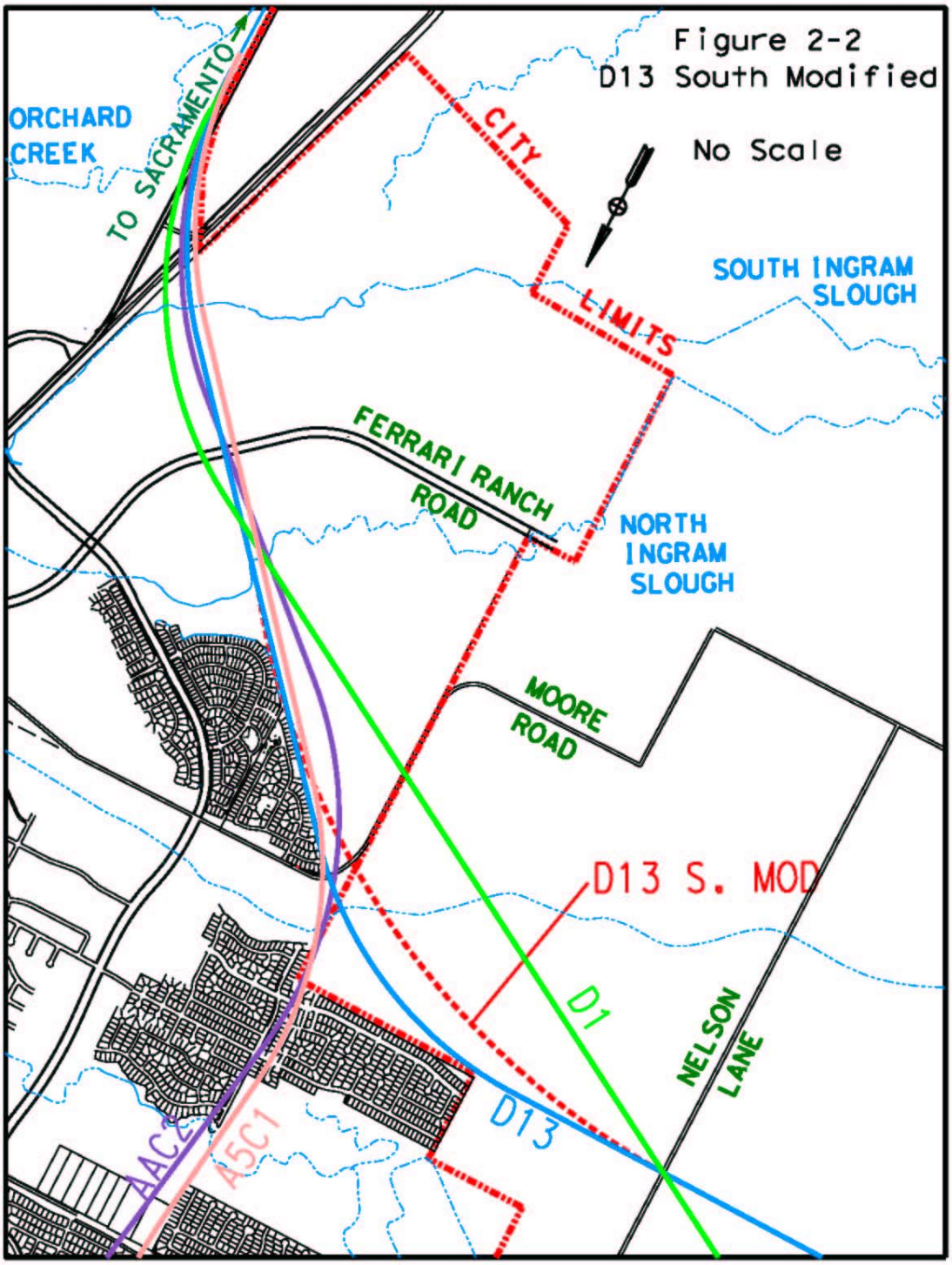
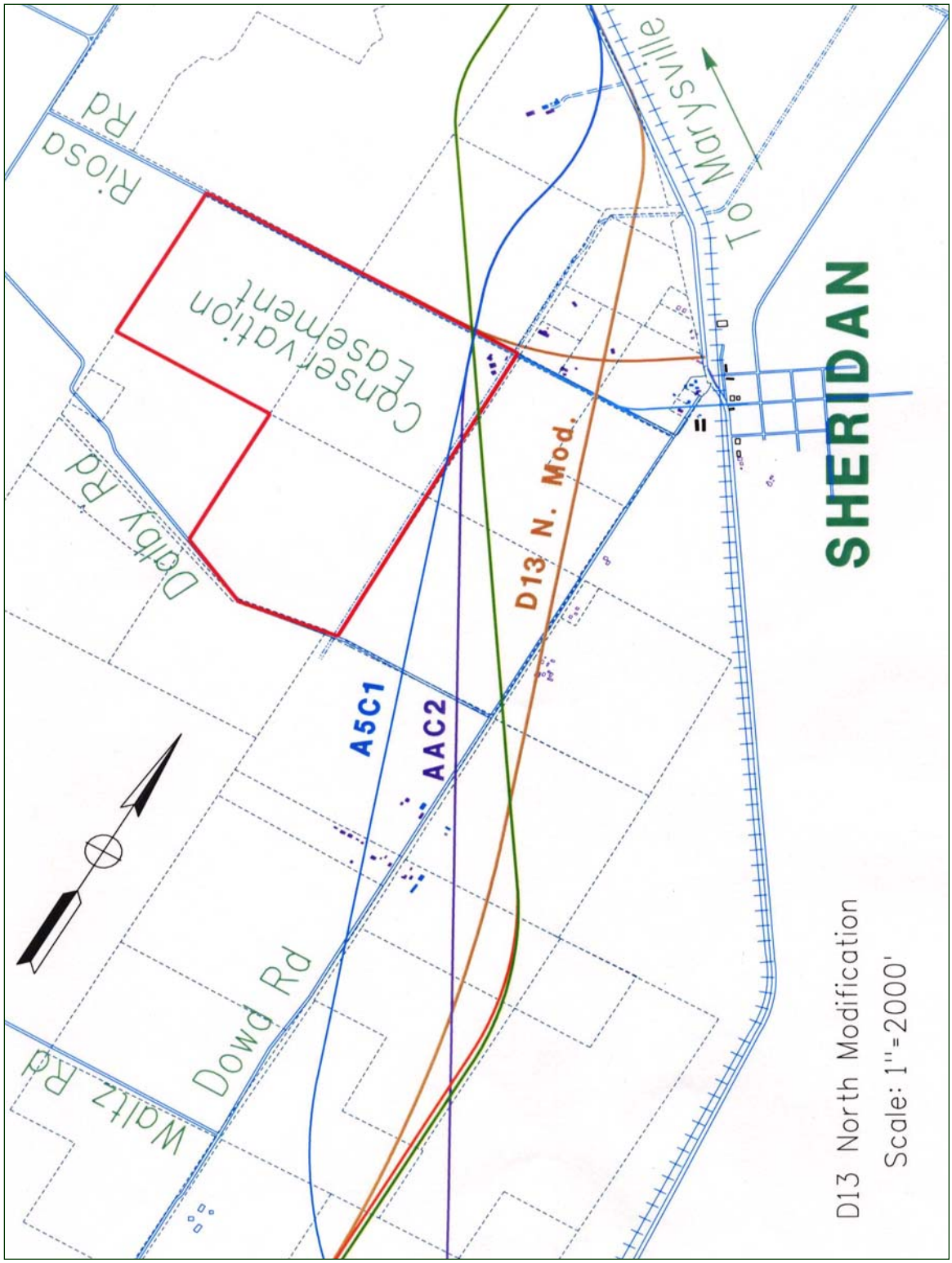


Figure 2-3 D 13 North Modified



2.1.6 D13 North Modified (Preferred Alternative)

The D13 North Modified alternative begins approximately 0.5 km (0.3 mi) south of the intersection of existing SR65 and Industrial Avenue at kilometer post 19.3 (PM R12.0). This alignment deviates from the existing SR65 just south of its intersection with Industrial Ave. Crossing over Industrial Avenue and the Union Pacific Transportation Company's tracks, the Preferred Alignment proceeds in a westerly direction. The alignment bisects Moore Road and intersects Nelson Lane before turning to the north crossing Nicolaus Road and passing the Lincoln Airport to the west. The alignment continues in a northerly direction for approximately 5.6 km (3.5 mi) parallel to Dowd Road before swinging in the northwest direction crossing Dowd Road approximately 91 m (300 ft) north of Dalby Road. Continuing in a northwest direction, the alignment intersects Riosa Road and rejoins existing SR65 just south of the Bear River at KP 38.3 (R23.8). The total length of the D13 North Modified alignment is approximately 20 km (12.4 mi).

Phase 1 of this alternative would provide four lanes from just south of Industrial Avenue to just north of North Ingram Slough. North of North Ingram Slough, the bypass would provide two lanes up to the northern tie-in with existing SR65 near Sheridan. Industrial Avenue would be a partial interchange, and at-grade intersections would be constructed at Nelson Lane, Wise Road and Riosa Road. This alternative has an overcrossing at Nicolaus Road and contains bridge structures at UPRR/Industrial Avenue, South Ingram Slough, proposed Ferrari Ranch Road, North Ingram Slough, Auburn Ravine, Markham Ravine, Airport Creek, Coon Creek, South Yankee Slough, North Yankee Slough and Big Yankee Slough.

As funding becomes available, additional lanes will be constructed and intersections will become interchanges. The ultimate project is scoped as a four-lane freeway from Industrial Avenue to SR 65 at Sheridan, with interchanges Industrial Avenue, Nelson Lane, Wise Road and Riosa Road. Overpasses will be constructed at Nicolas Road and cul de sacs will be constructed at Moore Road and Dowd Road.

Floodplain Easement

A 32.4 ha (80 ac) floodplain easement is proposed for the northeast quadrant of the Wise Road intersection. This easement will allow the road to be constructed at a lower profile, saving the cost of additional fill. The floodplain easement will also prevent any development from occurring in that area.

Coon Creek (LEDPA) Conservation Easement

A number of concepts were considered to avoid potential indirect and secondary impacts to aquatic resources caused by the intersection and later the interchange at Wise Road to the Coon Creek Watershed. Conservation Easements in the Coon Creek

watershed equivalent to the approximate cost of constructing the overcrossing structure at Wise Road; approximately $3.9 million, were included in the project to address these concerns.

Discussion of the Preferred Alternative

All reasonable alternatives were developed to a comparative level of detail so their relative merits may be evaluated. After reviewing public comments and coordinating with the regulatory agencies and the City of Lincoln it was determined that the D13 North Modified alternative, which includes conservation easements, was the LEDPA and therefore has been identified as the preferred alternative.

An Alternatives Analysis based on the earlier alignments; AA, A5, AAC2, A5C1, D1 and D13, was completed in 1998 in accordance with the Section 404 (b)(1) Guidelines and the NEPA/404 Integration Process. The purpose of the analysis was to evaluate the reasonableness and practicability of a number of alternatives for meeting the objectives of the project and provide documentation for the preparation of the Section 404 permit. The Section 404 (b)(1) Guidelines require that this analysis be adequate to identify the "Least Environmentally Damaging Practicable Alternative" (LEDPA). This was accomplished by comparing the alternatives for practicability, project purpose and overall environmental effects.

Upon analysis, the D corridor alignments are less damaging than the A/C alignments due to the presence of high quality wetlands and within the AC corridor, and the D13 is less damaging than the D1 due to increased wetland impacts. None of these three alternatives, the D1, D13 and D13 North Modified were clearly superior with regards to impacts to wetlands. However, the D 1 and D13 both impacted property that is under the USDA Wetland Conservation Easement.

Further information on the alignments was provided to the regulatory agencies in mid 2003 to advance the LEDPA and to identify a preferred alternative. D13 North Modified which includes conservation easements was accepted as the LEDPA by the regulatory agencies and has since gone through further design refinements and has received a "non jeopardy, no adverse modification of critical habitat," Biological Opinion from FWS under Section 7 of the Endangered Species Act. (See Appendix J)

Wetland Impacts

Preliminary design information was used to compare the alternatives before obtaining EPA, FWS and the USACE's concurrence on the LEDPA. The application of USFWS guidelines and recommendations regarding direct and indirect impacts was applied which resulted in higher impacts on the preferred alternative. All of the other alternatives would have similar increased impacts to natural resources with these revisions. Only those impacts that have changed are listed in Table 2-1.

Table 2-1 D13 Alternative Impacts

Alternative	Wetland Impacts	Vernal Pool Impacts	Oak Woodland	Residents affected
D 13	5.3 ha (13.1 ac) 4.73 ha (11.7 ac)	2.2 ha (5.4 ac) 2.14 ha (5.3ac)	4.45 ha (11.0 ac)	10
D 13 South Modified	5.91 ha (14.6 ac)	3.28 ha (8.1 ac)	1.17 ha (2.9 ac)	10
D 13 North Modified	5.5 ha (13.6 ac)	2.23 ha (5.5 ac)	4.45 ha (11.0 ac)	12
D 13 North Modified (Design Revisions)	6.54 ha (16.15 ac)	*Direct Impacts 10.9 ha (26.9 ac) *Indirect Impacts 8.5 ha (21.0 ac)	5.35 ha (13.22 ac)	18

*These revised impacts are calculated based upon FWS guidelines for determining impacts to vernal pools.

In addition to the permanent impacts, temporary impacts that will occur during construction are as follows:

- Vernal and freshwater marsh habitats: 0.04 ha (0.09 ac)
- Other non-wetland waters: 0.15 ha (0.36 ac)
- Mixed riparian forest habitats: 1.52 ha (3.76 ac)

The application of FWS methodology that was applied to the LEDPA caused some of the increase in impacts to vernal pools (habitat for vernal pool fairy shrimp). Under the initial methodology, if a vernal pool was partially within the project footprint and partially outside of the footprint, the portion that was within the direct project impact area was calculated as being directly impacted and the area outside of the project footprint was calculated as indirectly impacted. In addition, vernal pools within a 250-foot buffer on either side of the project limits were calculated as being indirectly impacted (according to FWS guideline interpretation). However, once this original impact calculation was submitted to FWS during the Section 7 consultation, FWS requested that the calculations be further revised according to their guidelines. Consequently, any vernal pool partially impacted by the project is now considered directly impacted and vernal pools that are hydrologically connected are now considered indirectly impacted even if they are beyond the original 250-foot indirect buffer area.

Wetlands and vernal pools were found to be present throughout the project area. The cumulative and indirect impacts of the project were similar for all of the initial project alternatives, although the Preferred Alignment was the only one that did not require the acquisition of property that is under the USDA Wetlands Conservation Easement in the USDA Wetlands Reserve Program.

2.1.7 Features of the D13 North Modified

Structures

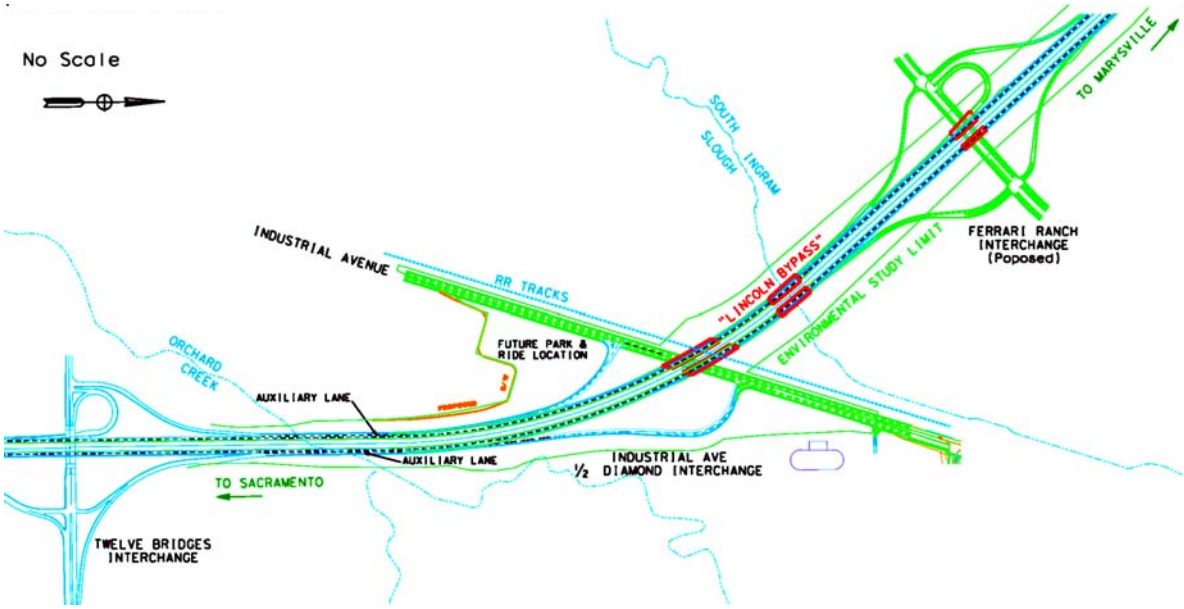
The following table lists the structures that will be required for this project.

Table 2-2 Structures

Bridge Name	Bridge Length (meters)	Bridge Length (feet)
Industrial Ave UC and OH Right	116.7	383
Industrial Ave UC and OH Left	118.5	388.80
S. Ingram Slough Bridge Right	69.3	227.37
S. Ingram Slough Bridge Left	68.2	223.76
Auburn Ravine Bridge	166	545
Markham Ravine Bridge	72	236.23
Nicolaus Road OC	79.7	261.55
Airport Creek Bridge	15	49.22
Coon Creek Bridge	120	393.72
S. Yankee Slough Bridge	26.5	86.95
N. Yankee Slough Bridge	35	114.84
Big Yankee Slough Bridge	48	157.49
Dowd Yankee Bridge*	40.5	132.88

*Note: Dowd Yankee Bridge is located on the realigned Dowd Road and spans Big Yankee Slough

Figure 2-4 Park and Ride



Park and Ride

Acquisition of right-of-way near Industrial Avenue and SR 65 for a Park and Ride facility has been included in the project. Caltrans, PCTPA and the City of Lincoln have a MOU regarding the park and ride facility. The acquisition cost responsibility has been transferred to the City of Lincoln and Placer County, who will work together on dedicating the land for the park-and-ride facility. The PCTPA will fund $1.1 million for

construction capital from Congestion Management Air Quality (CMAQ) or other funding sources. The geometric layout of the Park and Ride facility has been designed although it will not be constructed as part of the bypass project (See Figure 2-4).

Transit service between the proposed Park-and-Ride facility and the nearest Sacramento Regional Transit Light Rail station, with an anticipated "build out" to the Antelope/Sacramento-Placer County line, could provide an important transit link for the residents of Lincoln, Rocklin and Roseville. Yuba-Sutter Transit, Lincoln Transit Service, and Placer County Transit would all consider incorporating the proposed Park-and-Ride facility within their service system when it is built. The convenience and proximity of I-80's High Occupancy Vehicle lane downstream could be an incentive for the public to use the Park-and-Ride facility to avoid congested mixed flow lanes and eliminate more congestion. The Park-and-Ride facility would be a convenient and logical location for residents to leave vehicles while carpooling/vanpooling or taking transit, removing vehicles from the highway and improving air quality. Caltrans, PCTPA and SACOG are actively pursuing further High Occupancy Vehicle lane development.

While the demand for a park and ride facility extends to Sheridan, the majority of the demand is located in the City of Lincoln; therefore, a single park-and-ride facility location was preferred over multiple facilities. Considering the size and central location of the proposed park and ride site, a single location can more easily be incorporated into the local transit routes and if Sacramento Regional Transit were to decide to extend rail service to the area, this facility could also serve as a possible parking lot for light-rail commuters.

Utility Relocation

Utility conflicts have been identified, however, the relocation of conflicting utilities cannot be initiated until completion of the Project Approval & Environmental Document (PA&ED). After PA&ED, conflict maps will be sent to utility companies. The companies and utilities are shown on Table 2-3 below.

Pacific Gas and Electric (PG&E) gas transmission lines near Dowd and Riosa Roads will require relocation. These lines, 8 inches and 16 inches in diameter, traverse the Lincoln landscape in a southeast to northwest direction. These lines run through portions of new development in Lincoln and continue northwest toward the town of Sheridan where they conflict with the proposed bypass construction. At Dowd road, between Dalby Road and Riosa Road, the project impacts approximately 1,000 linear feet of the 16-inch gas line and approximately 1,700 linear feet of the 8-inch line. It is anticipated that relocation will require the lines to cross the bypass path at an approximate 90 degree angle, continue north in parallel with the bypass where it once again connects with the existing gas lines.

Table 2-3 Utility Conflicts

COMPANY	UTILITY	LOCATION
Pacific Gas & Electric Co.	Power	Various locations throughout project limits
Pacific Gas & Electric Co.	Gas	At Dowd Road, Riosa Road and South of Moore Road
AT&T (Formerly SBC & Pacific Bell)	Telephone and Fiber Optic	Various locations throughout project limits
City of Lincoln	Water and Sewer	Within the City of Lincoln jurisdiction
Q-West Communications	Fiber Optics	Various locations throughout project limits
Sprint	Fiber Optics	Various locations throughout project limits
Kinder Morgan (Energy Partners)	Oil	Along RR tracks near Industrial Avenue
UPRR	Communication lines	Along Industrial Avenue
South Sutter Water District	Aqueduct	At Riosa Road
Greenfield Communication Inc.	Telephone and Cable	South of Moore Road

At just north of Riosa Road near the South Sutter Water District canal, the project will again conflict with approximately 500 linear feet of the 16-inch gas line and approximately 1,100 linear feet of the 8-inch line.

In addition, it is estimated that both lines will require a bore and jack crossing of the Bear River lateral of South Sutter Water District's canal.

Non-Standard Features

The interchange at Industrial Avenue will be designed as a half diamond interchange. Constructing a full diamond interchange required an at-grade crossing of the railroad tracks for the northbound traffic. The existing and future alignment of Industrial Avenue will remain just east of and parallel to the railroad. To build a northbound on-ramp at the Industrial Ave., a "U" shape northbound on-ramp is needed. This would require a large amount of right-of-way acquisition. This movement will be served by the future Ferrari Ranch Interchange. An analysis performed by Caltrans Traffic Forecasting & Modeling confirmed that without this half diamond interchange the level of service in this section would deteriorate.

A design exception request, regarding minimum distances between two successive ramps or interchanges, may be needed if the City of Lincoln maintains the position and location of their local roads where they intersect with the proposed bypass (e.g. Ferrari Ranch Rd.). The minimum interchange spacing is 1.5 km (1 mi) in urban areas. If the City of Lincoln later proposes to build a new interchange at Ferrari Ranch Road, a design exception regarding this issue would be submitted concurrently with the PSR for that proposed project. The City of Lincoln would also be responsible for the environmental document.

Phasing of Construction

Because of fierce competition for transportation dollars in Placer County, funding for this project is limited. In order to balance the need for the project and limited

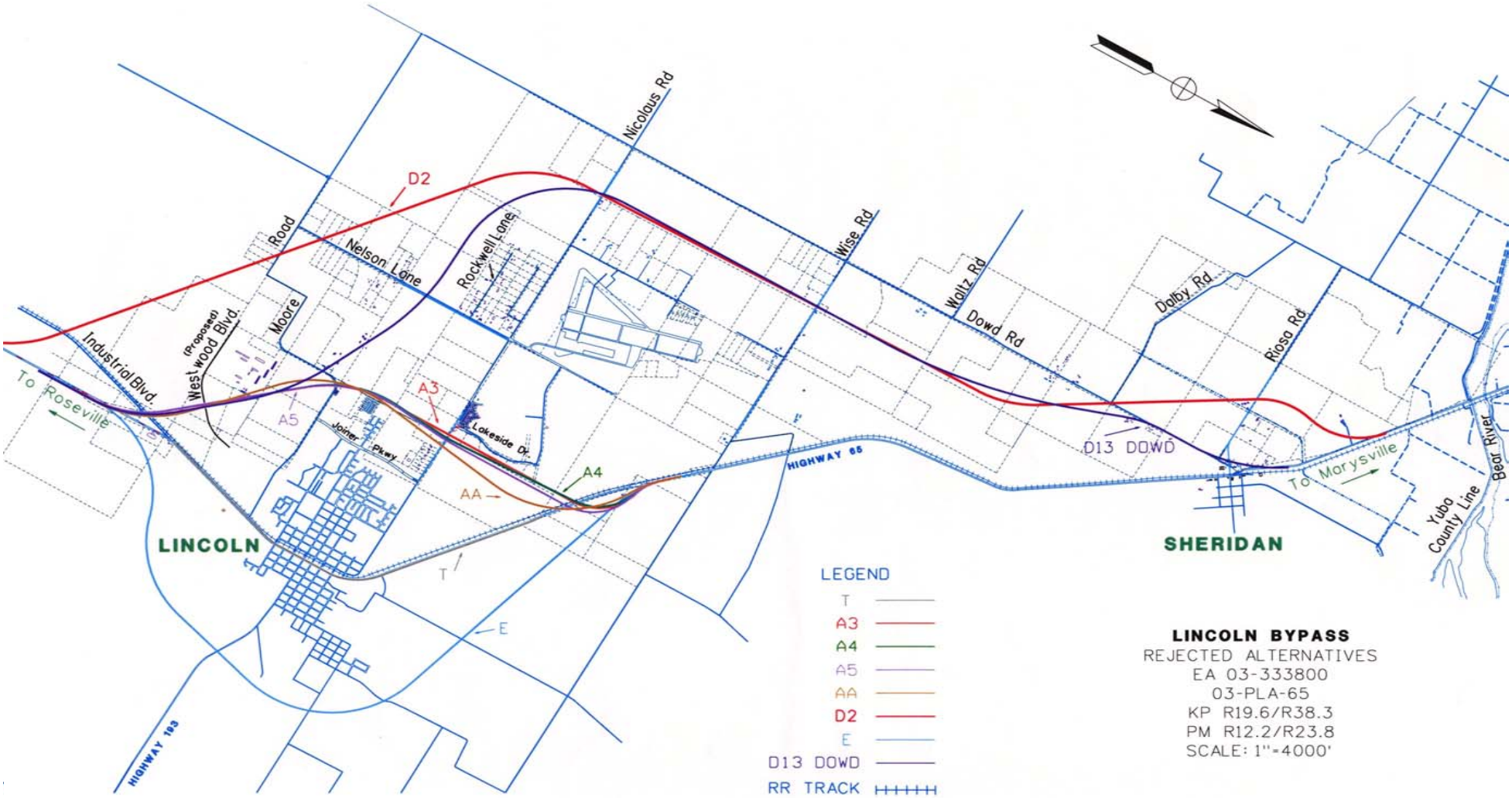
funding, construction will be phased to address the current need, and then as congestion increases, funding will be allotted for the completion of the freeway.

There will be at least two phases to the project. Phase 1 is to construct a four-lane freeway up to just north of Ingram Slough. After Ingram Slough, a two-lane highway will be built to the end of the project. Industrial Avenue will have a partial interchange. At-grade intersections will be built at Nelson Lane, Wise Road and Riosa Road. As funding becomes available, the additional two lanes will be added and intersections will be converted to interchanges.

Table 2-4 Summary of Impacts

	A5C1 Alternative	AAC2 Alternative	D1 Alternative	D13 Alternative	D13 South Modified Alternative	D13 North Modified Alternative
Wetlands/ Non-wetland Waters	7.85 ha (19.4 ac) wetlands/waters 4.65 ha (11.5 ac) vernal pool/swale 2.59 ha (6.4 ac) of marsh Two high value vernal pool complexes	6.23 ha (15.4 ac) wetlands/waters 3.80 ha (9.4 ac) vernal pool/swales 1.83 ha (4.5 ac) of marsh Two high value vernal pool complexes	5.30 ha (13.1 ac) wetlands/waters 2.43 ha (6.0 ac) vernal pool/swales 2.38 ha (5.9 ac) of marsh One high value marsh	4.73 ha (11.7 ac) wetlands/waters 2.14 ha (5.3 ac) vernal pools/swales 2.22 ha (5.5) ac of marsh One high value marsh	5.91ha (14.6 ac) wetlands/waters 3.28 ha (8.1 ac) vernal pool/swales 2.22 ha (5.5 ac) marsh	5.50 ha (13.6 ac) wetlands/waters 2.23 ha (5.5 ac) vernal pools/swales 2.95 ha (7.3 ac) of marsh
Special Status Species	Vernal pool fairy shrimp, vernal pool tadpole shrimp, valley elderberry longhorn beetle, Swainson's hawk	Vernal pool fairy shrimp, vernal pool tadpole shrimp, valley elderberry longhorn beetle, Swainson's hawk	Vernal pool fairy shrimp, vernal pool tadpole shrimp, valley elderberry longhorn beetle, Swainson's hawk	Vernal pool fairy shrimp, vernal pool tadpole shrimp, valley elderberry longhorn beetle, Swainson's hawk	Vernal pool fairy shrimp, vernal pool tadpole shrimp, valley elderberry longhorn beetle, Swainson's hawk	Vernal pool fairy shrimp, vernal pool tadpole shrimp, valley elderberry longhorn beetle, Swainson's hawk
Natural Communities Wildlife, Fisheries	93.68 ha (231.5 ac) grasslands containing vernal pools 2.06 ha (5.1 ac) riparian forest 6.11 ha (15.1 ac) oak woodland	88.18 ha (217.9 ac) grasslands containing vernal pools 1.05 ha (2.6 ac) riparian forest 10.16 ha (25.1 ac) oak woodland	76.01 ha (187.8ac) grasslands containing vernal pools 1.13 ha (2.8 ac) riparian forest 0.4 ha (1.0 acre) oak woodland	70.05 ha (173.1 ac) grasslands containing vernal pools 1.21 ha (3.0 ac) riparian forest 3.28 ha (8.1 ac) oak woodland	76.65 ha (189.4 ac) grassland/ vernal pool 1.05 ha (2.6 ac) riparian forest 0.08 ha (0.2 ac) oak woodland	80.98 ha (200.1 ac) grassland/ vernal pool 1.213 ha (3.0 ac) riparian forest 3.28 ha (8.6 ac) oak woodland
Water Quality	202.92 ha (501.4 ac) footprint with 11 stream crossings	196.20 ha (484.8 ac) footprint with 11 stream crossings	195.79 ha (483.8 ac) footprint with 9 stream crossings	213.88 ha (528.5 ac) footprint with 9 stream crossings	210.28 ha (519.6 ac) footprint with 9 stream crossings	214.69 ha (530.5 ac) footprint with 9 stream crossings
Cultural Resources	Requires small amount of right-of-way from property eligible for National Register.	Requires small amount of right-of-way from property eligible for National Register. Impacts to recorded archeological site	Requires small amount of right-of-way from property eligible for National Register.	Requires small amount of right-of-way from property eligible for National Register.	Requires small amount of right-of-way from property eligible for National Register.	Requires small amount of right-of-way from property eligible for National Register.
Section 4(f) Use	Yes, *de minimis*	If the archaeological site were determined to require preservation in place, then this alternative would affect a Section 4(f) property.	Yes, *de minimis*	Yes, *de minimis*	Yes, *de minimis*	Yes, *de minimis*
Agricultural Land	52.17 ha 128.9 ac	51.1 ha 126.3 ac	84.4 ha 208.5 ac	102.11 ha 252.2 ac	92.84 ha 229.4 ac	94.74 ha 234.1 ac
Hazardous Waste	Potential	Potential	Potential	Potential	Potential	Potential
Land Use/ Socio-economics	Residences: 461 Businesses: 5	Residences: 469 Businesses: 2	Residences: 20 Businesses: 6	Residences: 10 Businesses: 3	Residences: 10 Businesses: 1	Residences: 8 Businesses: 3
Cost	$159 million (min) $200 million (max)	$163 million (min) $195million (max)	$174 million (min) $205 million (max)	$165 million (min) $196 million (max)	$164 million (min) $195 million (max)	$166 million (min) $197 million (max)

Figure 2-5 Alternatives Withdrawn from Consideration



2.2 ALTERNATIVES WITHDRAWN FROM CONSIDERATION PRIOR TO CIRCULATION OF DRAFT EIS/R

The following alternatives were eliminated from further consideration for a variety of reasons that are included in the description of each alternative. Figure 2-5 shows the location of these alternatives. Table 2-5 summarizes the alternatives that were reviewed and why they were eliminated from further review.

Table 2-5 Summary of alternatives withdrawn from consideration in the DEIS/R

ALTERNATIVE	REASON FOR ELIMINATION
AA	Would not alleviate traffic problems or accommodate future traffic demands. Would have greater impacts to existing and proposed dwellings.
A5	Would not alleviate traffic problems or accommodate future traffic demands. Would have greater impacts to existing and proposed dwellings.
A3	Would not alleviate traffic problems or accommodate future traffic demands. Alignment would close existing Lakeside Drive and disrupt existing subdivision.
A4	Would not alleviate traffic problems or accommodate future traffic demands.
D2	Would have greater impacts on dwellings, wetlands and vernal pools than the D1 alternative.
D13 Dowd Modified	Eliminated from further consideration due to the non-access controlled segment on Dowd Road, proximity to existing driveways and traffic safety and operations.
T	Would fail to meet regional traffic needs. Numerous cross-streets and driveways would remain and traffic congestion would increase.
E	This alignment would not meet the regional traffic demands and existing traffic patterns.
TSM (Transportation System Management)	The October 1995 Major Investment Study eliminated this alternative from further consideration.
AFD	Would require extensive frontage roads and right-of-way. The 1990 Stage II Project Work Program eliminated this alternative from further consideration.

2.2.1 The AA and A5 Alternatives

Since the "AA" and "A5" alternatives were first developed, numerous housing developments have been constructed in the path of these alternatives. Consequently, the "A" alternatives impact quite a few more residents than the alternatives in the "D" corridor. Additional soundwalls could be required to protect the residents not directly affected (relocated) by these alternatives.

In addition, the "AA" and "A5" alternatives will not alleviate traffic within the project area as outlined by the Purpose & Need. This is because the "A" corridor ties back into the existing two lane SR 65 near Wise Road, which cannot accommodate the future traffic. Northbound traffic flowing from the "A" alternative must pass through the Wise Road and Riosa Road intersections on existing SR 65. These intersections will need to be controlled with a traffic signal and cannot accommodate the future traffic demand. Traffic on existing SR 65 will become congested. This congestion will

deteriorate to the point that traffic will backup onto the A Bypass alternative. The "D" and "AC" corridors connect back to existing SR 65 north of the Riosa Road intersection and will not be delayed by this intersection. In addition, the "A" alternative has much higher delay and lower speed than the other alternatives.

There are several protected resources that would be affected by these alternatives. The "A" corridor (including AA, A3, A4 and A5) crosses through areas of high quality vernal pools between Nicolaus Road and the Union Pacific Transportation Company (UPTC) railroad tracks. Near the north connection with existing SR 65, Bogg's Lake hedge hyssop (*Gratiola heterosepala)*, a California endangered plant species, has been found. In addition, a mature stand of oak trees is located within the "A" corridor near Nicolaus Road. A pair of nesting Swainson's hawks, a California threatened species, have been observed nesting in this stand of oaks.

In addition to not meeting the purpose of the project, the "AA" and "A5" alternatives do not meet the design parameters that were agreed upon for this project. The "A5" line impacts excellent quality wetlands near the beginning of the project, as well as an Oak woodland near Nicolaus Road. However, the "A5" line does avoid the California Endangered Bogg's Lake hedge hyssop, located in vernal pools north of the existing highway. Below is a description of the "AA" and "A5" alternatives.

Alternative AA

The "AA" line begins approximately 0.5 km (0.3 mi) south of Industrial Avenue at KP 20 (PM12.5). The alignment curves in a northwesterly direction and proceeds over Industrial Ave. and the UPTC tracks, intersecting Moore Road approximately 607 m (1992 ft.) from the Moore Road/Joiner Parkway intersection. The line turns in a northeasterly direction approximately 2.4 km (1.5 mi) west of the existing alignment. At Auburn Ravine, Alternative "AA" is just west of the (USGS topographical map) section line between sections 16 and 17.

At Nicolaus Road, the "AA" line was set approximately 335 m (1100 ft) east of Lakeside Drive. From Nicolaus Road, the "A" line continues on a north-northeast bearing until it nears the UPTC tracks where it curves to the left, proceeds over the railroad tracks and existing SR 65, tying back into the existing highway approximately 0.4 km (0.3 mi) south of Wise Road. The "AA" alignment is approximately 8.0 km (5 mi) long and terminates at KP 28 (PM17.3).

Alternative A5

The "A5" alternative was created to avoid the Lincoln Airpark in the event it develops before the modified route is adopted. This alternative is 8.05 km (5.0 mi) long, beginning approximately 0.5 km (0.3 mi) south of Industrial Ave. at KP 20 (PM12.5) and ending at KP 28 (PM17.1). The alignment curves in a northwesterly direction and

proceeds over Industrial Ave. and the UPTC tracks. Near the section corner at Moore Road, the line turns in a northeasterly direction approximately 2.4 km (1.5 mi) west of the existing alignment. At Nicolaus Road, the "A5" line is approximately 247 m (810 ft) east of Lakeside Drive and 38 m (125 ft) east of the section line. At the north end of the project this alignment proceeds via grade separation over the railroad tracks and the existing highway, similar to the other "A" alternatives.

2.2.2 Alternative A3 and A4

The "A3" and "A4" alignments were developed to minimize impacts on the biologically sensitive areas in the "A" corridor. This is based on the assumption that the area west of the section line has fewer protected resources than the area east of the section line. The "A3" and "A4" alternatives were dropped in favor of "A5", which, at the time, affected less residential area.

Alternative "A3" was withdrawn from consideration due to the need to close Lakeside Drive. The City of Lincoln strongly opposes the closure of Lakeside Drive. Closing Lakeside Drive would disrupt the planned subdivision including a loop golf course located just north of the Fairway Dr./Nicolaus Road intersection. Construction of Lakeside Drive was accomplished through an Assessment District. Relocating this road and utilities would alter existing easements and create a complex financial situation

Alternative "A4" removes more of the oak trees near Nicolaus Road than the "A3" line, but substantially less than the "A" line, and wetland impacts are less than the "A" line. The "A4" line has substantially less impact on vernal pools than the A line and also avoids the area where the Bogg's Lake hedge hyssop is found.

A3

"A3" coincides with the A alignment in the southerly section of the project to Auburn Ravine. There it veers north, running parallel and west of the section line. North of Nicolaus Road, the "A3" line continues on the west side of the section line. The alignment crosses over the railroad tracks and the existing highway, then turns in a northwesterly direction and conforms with existing SR 65.

At Nicolaus Road, the "A3" line is approximately 168 m (551 ft) east of Lakeside Drive. Construction of Nicolaus interchange would require the closure of Lakeside Drive. Alternate access to the Lincoln Airpark could be provided by improving the connection to Fairway Drive located approximately 305 m (1000 ft) west of Lakeside Drive. Improvements to the interior streets in Lincoln Airpark would mitigate some of the effects of closing Lakeside Drive at Nicolaus Road.

Alternative A4

The "A4" alternative is a variation of the A line. South of the Auburn Ravine, the A4 line coincides with the A alignment. The A4 alignment generally runs to the west

side of the section line, minimizing the impact on wetlands in the area. Approaching Nicolaus Road, the alignment shifts approximately 46 m (151 ft) east of the "A3" line and 213 m (699 ft) east of Lakeside Drive. Construction of the "A4" alignment would not require the closure of Lakeside Drive. The distance between the southbound ramps intersection and Lakeside Drive is 137 m (449 ft). Although this interchange configuration has less capacity than a partial cloverleaf, as in the A alternative, adequate capacity at the off-ramp intersection and nearby local intersections can be provided.

2.2.3 Alternative AFD

The "AFD" alternative considered future upgrading to an expressway/freeway from near Wise Road to north of Sheridan, if an "A" Corridor alternative was initially constructed. The "AFD" line would follow the entire "A" Corridor and rather than connecting with existing SR 65 at the north end of the "A" Corridor, the "AFD" line would proceed on a new alignment east of the existing highway. The "AFD" line would then cross the existing highway, approximately three miles south of Sheridan, where it would conform to the north end of the "D" Corridor alignments.

Another version of the "AFD" would be to upgrade the existing alignment from north of the "A" Corridor alignment to north of Sheridan. This alignment would require extensive frontage roads and right of way.

The "AFD" alignment was evaluated in the 1990 Stage II Project Work Program and was not considered feasible due to its high cost.

2.2.4 Alternative D2

The "D2" alternative was developed in an attempt to reduce the impact on wetlands and residents in the southern portion of the project. This alignment begins 2 km (1.24 mi) south of the "D1" line. The "D2" line is roughly parallel to the "D1" line upon leaving the existing alignment to near Nicolaus Road. North of Nicolaus Road, the "D2" line coincides with the "D1" alignment. The "D2" alignment would require the removal of four to seven residential dwellings and possible soundwalls for approximately five dwellings. Based on a preliminary survey, the "D2" line has a greater impact on dwellings and vernal pools than the "D1" line. It is also longer and more remote from Lincoln and has a greater impact on wetlands than the "D1" line. For these reasons, the "D2" was eliminated from further study.

2.2.5 Alternative D13 Dowd Modified

This alignment was developed in response to the USDA Wetland Conservation Easement. The D 13 Dowd Modified was developed at the same time as the D 13 North Modified. This alternative follows the D 13 alignment until it meets Dalby Road, where it curves east to join Dowd Road, meeting with SR 65 at Sheridan. Dowd Road would be

widened and improved to accommodate the increased traffic, but would remain a two-lane road. The portion of the alternative along Dowd Road would not be access controlled.

The rejection of this alternative was based on safety and operation due to location of existing driveways, which would interfere with the operation of the facility.

2.2.6 Alternative T

The "T" alternative upgrades the existing SR 65 alignment to four lanes. From Industrial Ave. to Auburn Ravine and from Gladding Road to near Wise Road, a four-lane expressway would be constructed on existing SR 65 alignment. From Auburn Ravine to Gladding Road, the "T" line proposed to provide four lanes plus a continuous left turn lane. This can generally be accomplished by eliminating on-street parking and narrowing the sidewalks from 3.6 m (12 ft) to 2.4 m (8 ft). One or two parking lots could be constructed on vacant land between the junction of SR 193 and Sixth Street, providing these properties do not develop first. Also, older houses on F Street (one block east) could be converted to parking.

Drainage throughout the downtown section would need to be updated to current standards. South of First Street, it is anticipated the entire structural section will need to be reconstructed.

Telephone poles throughout the town are located .9 m (3 ft) behind the face of the curb on the west side of the highway. In addition, a major natural gas junction valve is located east of the clay plant. This valve and possibly some of the gas line would require relocation. Railroad crossing gates would require reconstruction.

The primary disadvantage of this alternative is that it fails to satisfy the regional need for an adequate freeway system in the area. It does not alleviate the problems of numerous cross streets and driveways. Initially, widening to four lanes may reduce the accident rate at the numerous intersections in town. As Lincoln grows, traffic through the central business district will become more congested and it is anticipated the intersection accident rate will increase.

Constructing the four-lane section through the downtown area does not leave an option for future widening. The 10-year and 20-year LOS for four lanes downtown are projected to be E and F respectively. After the 20-year design period, the only viable option to enhance the level of service and capacity will be to construct a bypass.

The Lincoln General Plan policy is to "promote and renew the existing central business district, in order to provide diversified business opportunities." Heavy traffic volumes associated with a four-lane facility, loss of parking and the removal of at least one existing business are not consistent with the General Plan.

Caltrans Transportation Concept Report (TCR) calls ultimately for a four-lane freeway on this section of highway. For the above reasons, this alternative does not satisfy the regional or local requirements for the State highway.

2.2.7 Alternative E

The "E" Alternative begins south of Industrial Ave. similar to the "A" and "D1" alignments. The "E" line turns in a northwesterly direction around the east side of Lincoln and proceeds through vacant land until it crosses SR 193. The terrain through this first section is flat to rolling hills and land use is primarily grazing. After crossing SR 193, the alignment proceeds northerly and crosses Auburn Ravine. North of Auburn Ravine, there are scattered houses and ranchettes. In this area the alignment turns in a westerly direction. The "E" line crosses Virginiatown Road and McCourtney Road in this area. The line passes along the north edge of the claybed prior to reconnecting with the existing facility. This alignment was developed as an alternative to the A alignment. The "E" alignment distance is approximately 4.2 km (2.6 mi) out of direction as compared to the existing facility. The traffic analysis indicates that a major portion of through traffic would exit the expressway and proceed through Lincoln to save time and distance travel. This alignment, therefore, does not satisfy the purpose and need of the project.

2.2.8 TSM (Transportation System Management) Alternative

The Transportation System Management and Travel Demand Management (TSM/TDM) Alternative was evaluated and eliminated as an isolated alternative in the Major Investment Study. This alternative covers a range of improvements and strategies that aim to reduce the demand on and increase the efficiency of the existing transportation system, including measures such as the expansion of park and ride facilities with connections to intercity transit bus service, ride matching, car/vanpooling and teleconferencing. The estimated cost is not available.

Other TSM measures include signal optimization, two-way left turn lanes, right turn only lanes, parking prohibitions and outside the central core, shoulder widening, truck lanes, passing lanes and merge/ diverge lanes.

The TSM/TDM alternative received the fifth highest score in the evaluation of eight alternatives which included converting the existing highway to four lanes, a minimum bypass alternative, a two and four lane bypass alternative, commuter rail trip diversion, intercity transit bus service and transportation system management and travel demand management (TSM/TDM). Given the City of Lincoln's low-density land uses and an economy of small business employers, TSM/TDM alternatives may only have limited applicability within the study area. Assuming five percent of the forecasted inter-

regional commute traffic will divert from SR 65 to TSM/TDM applications within the study area, the benefits to SR 65 would be marginal.

Although the Intercity Bus Service and TSM/TDM alternatives scored low as independent alternatives, combined with an improvement such as the bypass alternatives, they would play an important role in the effective use of the overall transportation system.

Acquisition of right-of-way for a park and ride facility is included in the project, and will be located at the junction of Industrial Avenue and SR 65. As a stand-alone project, the park and ride would not be capable of resolving the impacts from the projected increase in traffic.

3 AFFECTED ENVIRONMENT

This chapter describes the environment likely to be affected by the project. The purpose of this chapter is to give the reader background with which to evaluate the impacts of the project that are described in Chapter 4, Environmental Consequences.

3.1 SOCIAL, ECONOMIC AND LAND USE

A Community Impact Assessment (CIA) Report was completed for this project in November 2001. This report describes the socioeconomic environment and evaluates any socioeconomic impact of this project. Copies of this report are available for review at the Department of Transportation, District 3 Sacramento office, 2389 Gateway Oaks Dr., Sacramento, CA.

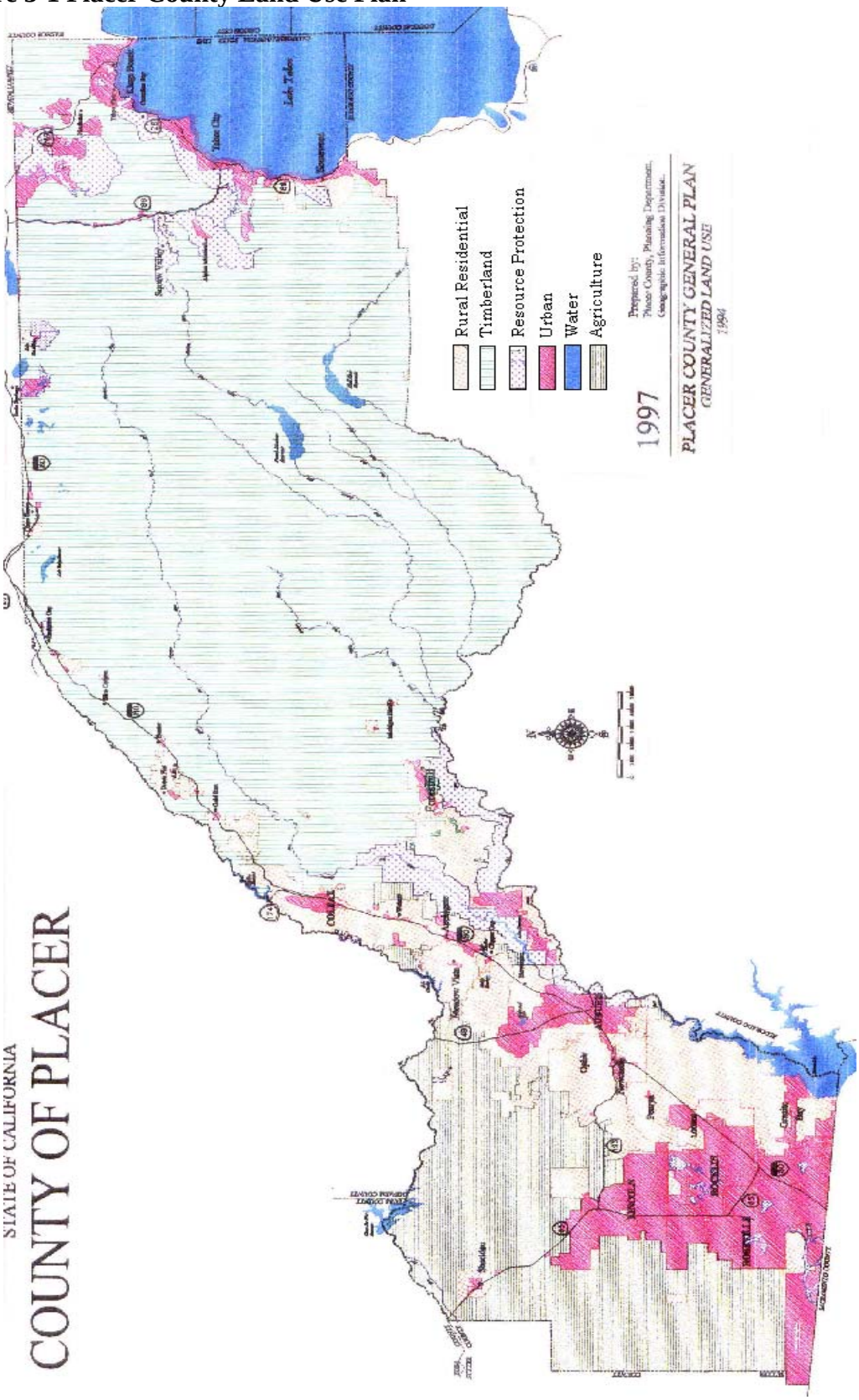
3.1.1 Study Area

The Study Area for the Community Impact Assessment includes the City of Lincoln and the Sheridan Community planning area in addition to the South Placer and Auburn-Foothills regions of Placer County. The City of Lincoln consists of an area of approximately 7,891 ha (19,500 ac). The Sheridan Community planning area embodies an estimated 777 ha (1,920 ac) in Placer County's northwestern region. General information about the South Placer and Auburn-Foothills regions of Placer County is included to provide a greater understanding of the relative significance of the Lincoln Bypass to the west Placer County community. For purposes of this document, the South Placer and Auburn-Foothills regions of Placer County will be referred to as western Placer County.

3.1.2 Major Land Uses

The Placer County General Plan (1994) provides an overall framework of the County's land use plan (Figure 3-1), whereas, the City of Lincoln General Plan (1988) and Sheridan General Plan (1976) supplement the Study Area. Figure 3-2 illustrates the major land uses for the City of Lincoln as adopted under the 1988 General Plan. Sheridan's land use designations adopted under the 1976 General Plan are depicted on Figure 3-3. Major land uses identified within the Study Area are agriculture, residential, industrial, commercial and resource protection, greenbelt, open space, and recreation.

Figure 3-1 Placer County Land Use Plan



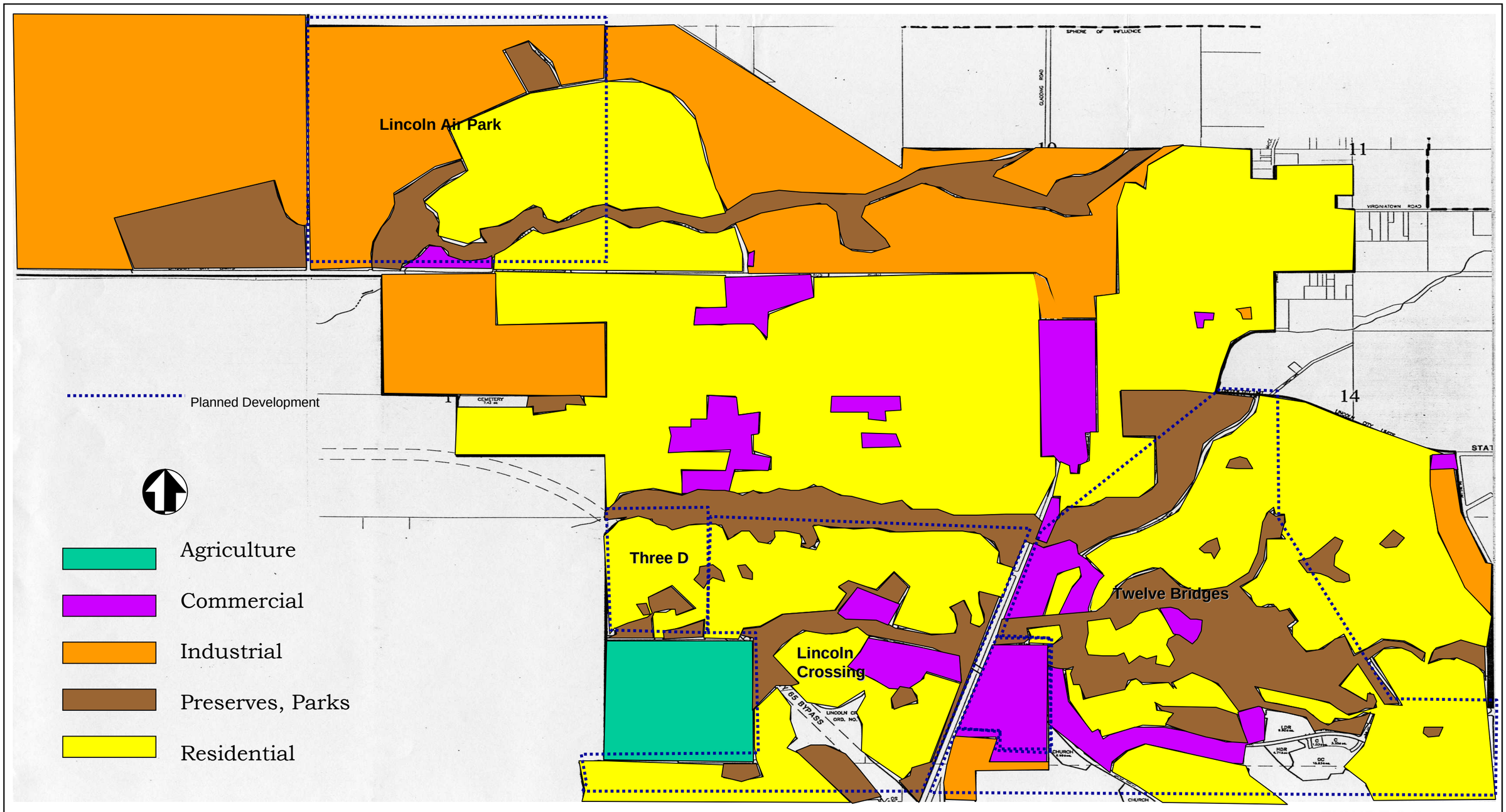
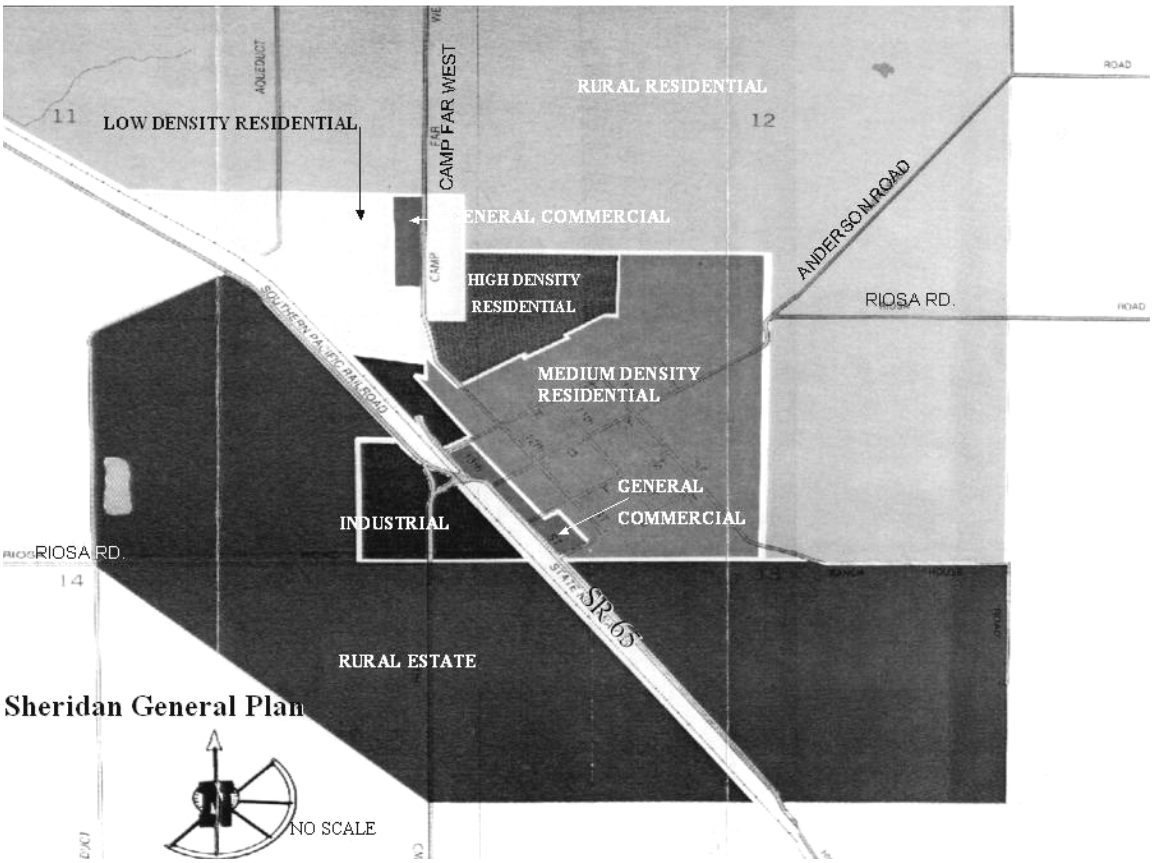


FIGURE 3-2

CITY OF LINCOLN LAND USE MAP

Figure 3-3 Sheridan Land Use Plan



Agriculture

Compared to other California counties, Placer County ranks in the lower 20% in terms of total farmland acreage; nevertheless, agriculture is an important component in Placer County's economy as substantiated by the $60.5 million value of production in 2000. Most of the agricultural use in the project area is within Placer County's jurisdiction and outside Lincoln's city limits. In western Placer County, lands designated for agricultural use represent approximately 42.1 percent of the total acreage in the study area.

An estimated 30% of Lincoln's planning area continues to be used for agriculture, although zoned as urban reserve. Approximately 1813 ha (4,480 ac) lie in the southwestern region while an estimated 518 ha (1,280 ac) are located in the northwestern perimeter. The majority of the agricultural lands are used for cattle grazing; however, both irrigated and dry land farming do exist, with rice being the dominant crop.

Unlike the City of Lincoln, the Sheridan planning area maintains approximately 84% of its land for agricultural uses, totaling an estimated 653 ha (1,613 ac). Agriculture within the Sheridan area has been highly dependent on the availability of water and the

economy, which has limited much of the area to dry grazing, and irrigated pastures with moderate amounts of rice production.

Agricultural Preserves (Williamson Act Agreements)

Since the draft of this EIS/EIR, Placer County has completed a draft study of western Placer County to assess current agricultural resources and determine how to better protect them from the recent population and housing increase. This draft report was completed in January 2002.

As of 2002, Placer County has 71,000 ha (175,445 ac) of agricultural land (California Department of Conservation, 2003). This breaks down to 3,837 ha (9,481 ac) of prime farmland, 2,231 ha (5,513 ac) of farmland of statewide importance, 8,970 ha (22,166 ac) of unique farmland, 41,617 ha (102,838 ac) of farmland of local importance and 14,345 ha (35,447 ac) of grazing land.

Agricultural uses make up the single largest land category in the western Placer County. This includes 52,290 ha (129,209 ac) of cultivated farmland, idle farmland, pasture and semi-agricultural uses. Lands designated for agricultural use represent approximately 42.1 percent of the total acreage in western Placer County. According to the West Placer County Agricultural Study (January 2002), there are approximately 42,244 acres of land participating in the Williamson Act.

The Placer County Agricultural and Open Space Preserve Program was established in accordance with the Williamson Act to protect agricultural lands for the continued production of agricultural commodities, and to protect certain other lands devoted to open space uses. The Administrative Rules for Agricultural and Open Space Preserves, administered by the County's Planning Director, Agricultural Commissioner and Assessor, implement the provisions of the Williamson Act in Placer County. These rules are not intended to replace the Williamson Act, rather work in conjunction with applicable provisions of the Williamson Act. Please refer to Figure 3-4 for distribution of these lands.

Figure 3-5 shows the distribution of agricultural land in western Placer County. All of the alternatives will affect prime, unique, statewide, and locally important farmlands. Completion of the Farmland Impact Rating (See Chapter 7, Comments and Coordination and Appendix D, Farmland Impact Rating Form) showed that alternatives, A5C1 and AAC2 had point values of 158, and 157. The D1 and D13 point values were 162 and 161. The D13 South and North Modified Alternatives values were both 147.

Figure 3-4 Williamson Act Lands

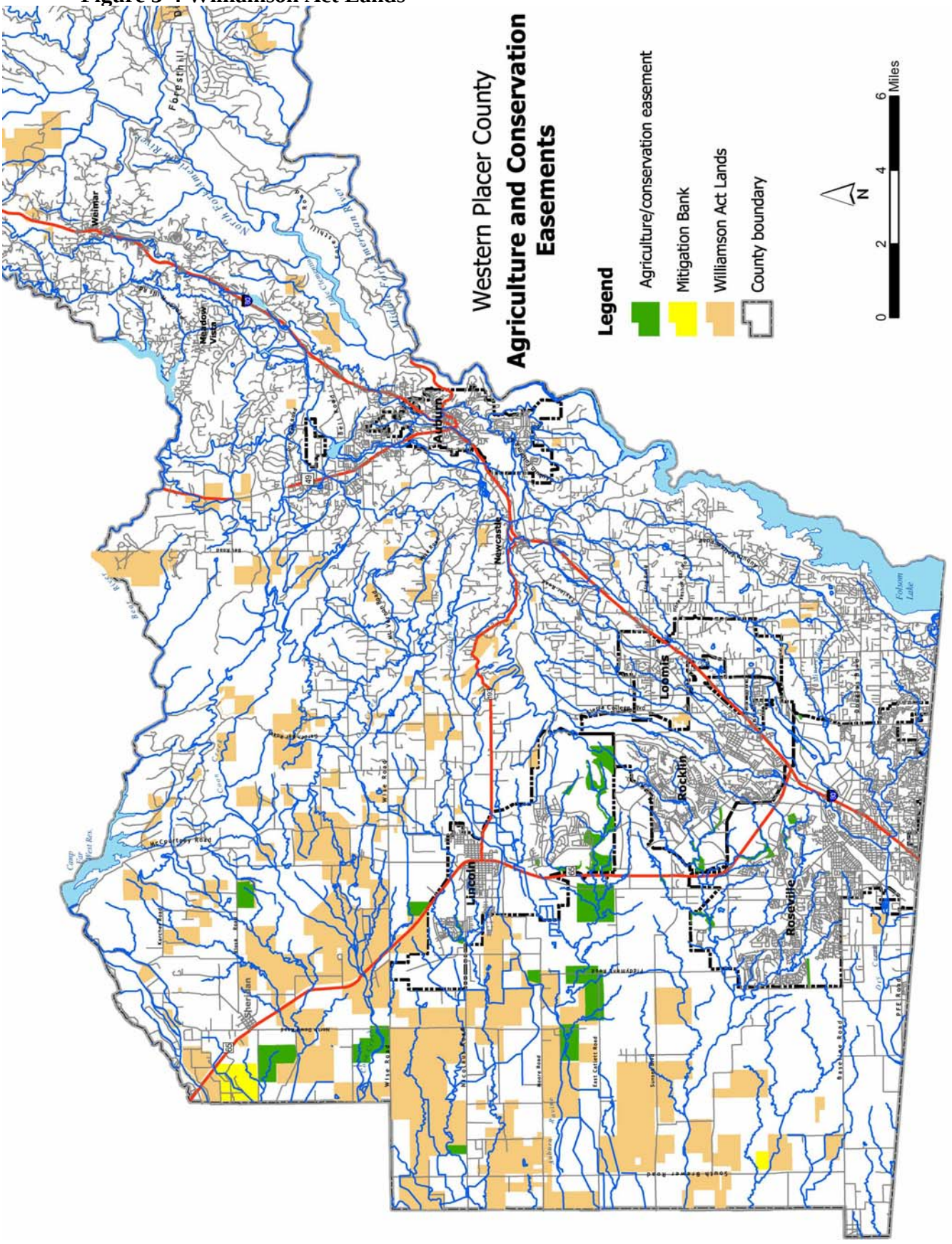
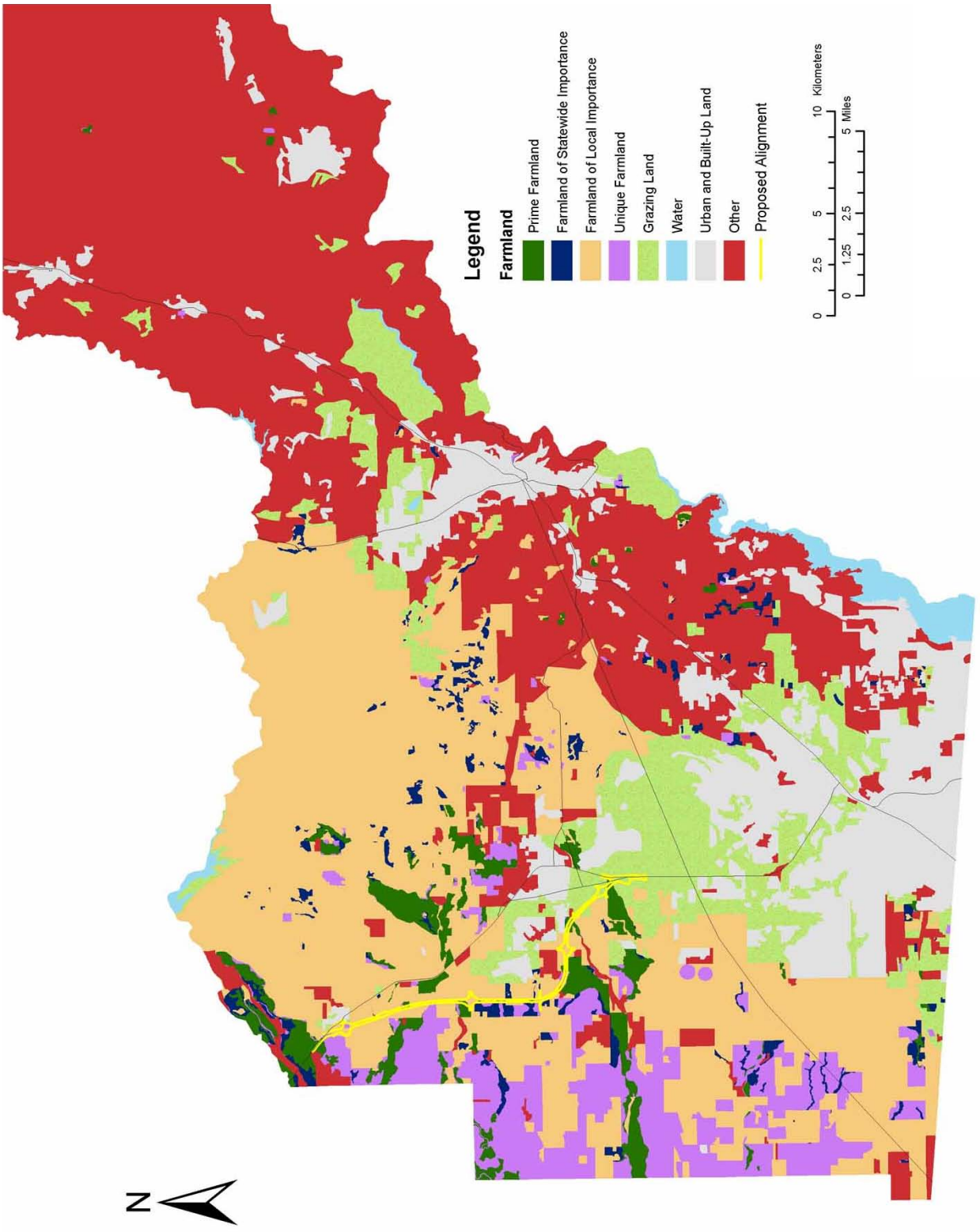


Figure 3-5 Agricultural Lands



Residential

Rural residential areas in western Placer County have generally been limited to the agricultural areas while low, medium, and high density residential is essentially aggregated around the cities. Placer County housing stock totals 129,311 of which 103,295 are single-family dwelling units, 21,299 were multiple family dwelling units and 4,717 were mobile homes/trailers (Table 3-7).

Residential land uses in Lincoln occur primarily around the downtown area and project outward, generally concentrated south of Nicolaus Road and north of the Auburn Ravine. The housing stock of Lincoln is composed of approximately 8,979 single-family residences, 889 multiple family units and 96 mobile homes.

Figure 3-6 Typical residential neighborhood in Lincoln (left) and Sheridan (right).



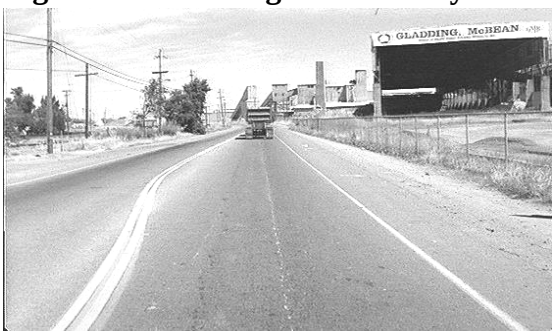


Sheridan's urban housing occurs within and on the immediate perimeters of the township. The core area is zoned for medium density residential housing while high and low density residential housing lies northwest of the core area on the east and west side of Camp Far West Road, respectively. Single-family dwelling units primarily make up the housing stock; however, one mobile home park has been established within the township.

Industrial

There are approximately 1100 ha (2,750 ac) zoned for industrial, light industrial, and industrial planned development within Lincoln. Currently, an estimated 55% of the land zoned for industrial use is developed, primarily located along Lincoln's northern boundary. Undeveloped industrial land continues to be used for agricultural uses until development is necessary. The most prominent industrial companies include the Gladding-McBean clay manufacturing plant, Sierra Pacific Industries wood products, the American Poly-Therm aerospace plant, Weco aircraft gauges and D&D Cabinets. Sheridan's Sunset Industrial Park lies adjacent to the township, straddling SR 65. Currently, 10 ha (26 ac) are zoned for industrial use in Sheridan and is not expected to expand in the near future.

Figure 3-7 Gladding McBean clay manufacturing plant and Sierra Pacific Lumber





Commercial

Lincoln's downtown business district is composed of mixed commercial, retail, professional offices, and service outlets. There is approximately 1.2 ha (3 ac) zoned for commercial use located in a corridor along SR 65 between "H" and "E" Streets. Some of the older buildings in the business district have been restored while new construction has primarily been comprised of fast food restaurants. Nevertheless, the downtown area has generally been maintained.

Figure 3-8 Typical downtown Lincoln and Sheridan businesses





Sheridan has set aside approximately 4 ha (10 ac) to be zoned for commercial uses. Resembling other rural communities, some businesses provide dual services such as the grocery/hardware store and the small market/bait store. Commercial zones are located along SR 65 and Camp Far West Road; however, many of the existing buildings are currently vacant.

Resource Protection, Greenbelt, Open Space, and Recreation

Placer County, the City of Lincoln and Sheridan have all identified agriculture as a major resource to be protected. Protection of agricultural land uses is generally in the form of buffer zones. These buffer zones can be greenbelts, open space and recreational facilities. Riparian vegetation along the Markham and Auburn Ravines as well as urban reserve in Lincoln's southeast region currently provides natural buffer zones. Buffer

zones are not employed within the Sheridan planning area; however, Sheridan's land use designations have provided a "gradation" between the farmlands and urban development.

Placer Legacy Project

Recently, Placer County has implemented the Placer Legacy Project. The Placer Legacy Project is intended to develop specific, economically viable implementation programs that focus on the preservation of open spaces in order to maintain the abundance of the existing diverse natural habitats while supporting the economic viability of the County and enhancing property values. The Citizens Advisory Committee, the Interagency Working Group and the Scientific Working Group work under the umbrella of the Placer Legacy to develop programs where no programs currently exist and strengthen existing programs.

Placer Legacy is proposing that Placer County put up to 30,352 ha (75,000 ac) of land into a preserve anticipated to cost up to $183 million. How much land the Placer Legacy program can acquire will be based on the financial resources available to the county, including tax revenues, State or Federal grants and donations.

Currently, Placer County is working in cooperation with the Regulatory Agencies in developing a Natural Communities Conservation Plan/Habitat Conservation strategy.

3.1.3 Developable Land

Generally, development in Placer County has been concentrated around the major cities, consistent with the land use zoning specified in the General Plan. Conversely, the City of Lincoln has zoned much of the agricultural land and open space as urban reserve.

Sheridan, being under the jurisdiction of Placer County with a strong agricultural influence, has not set aside additional areas as urban reserve. Moreover, empty lots are still available for development scattered within the already developed areas.

Development Trends

Within the Study Area, Lincoln is generally the only area that is experiencing growth or expects growth in the near future. Lincoln has steadily been growing from the existing city limits outward into its sphere of influence. Currently, all the developments that had been approved at the time the Draft EIR/S was prepared have been built. Developments that have been completed during the preparation of the final report include: Auburn Ravine Oaks, Laehr Estates, Brookview 2, Brookview 3, Park Estates 1-3, Glenmoor, Lakeside Estates 5, Lakeside Estates 1-3, Brookview 4 and Lakeside Estates 4 and Teal Hollow. Other developments listed in Table 3-1 and shown in Figure 3-9 are in various planning and construction stages. As development proceeds outward,

Lincoln has adopted the use of planned developments as a means to prevent urban sprawl.

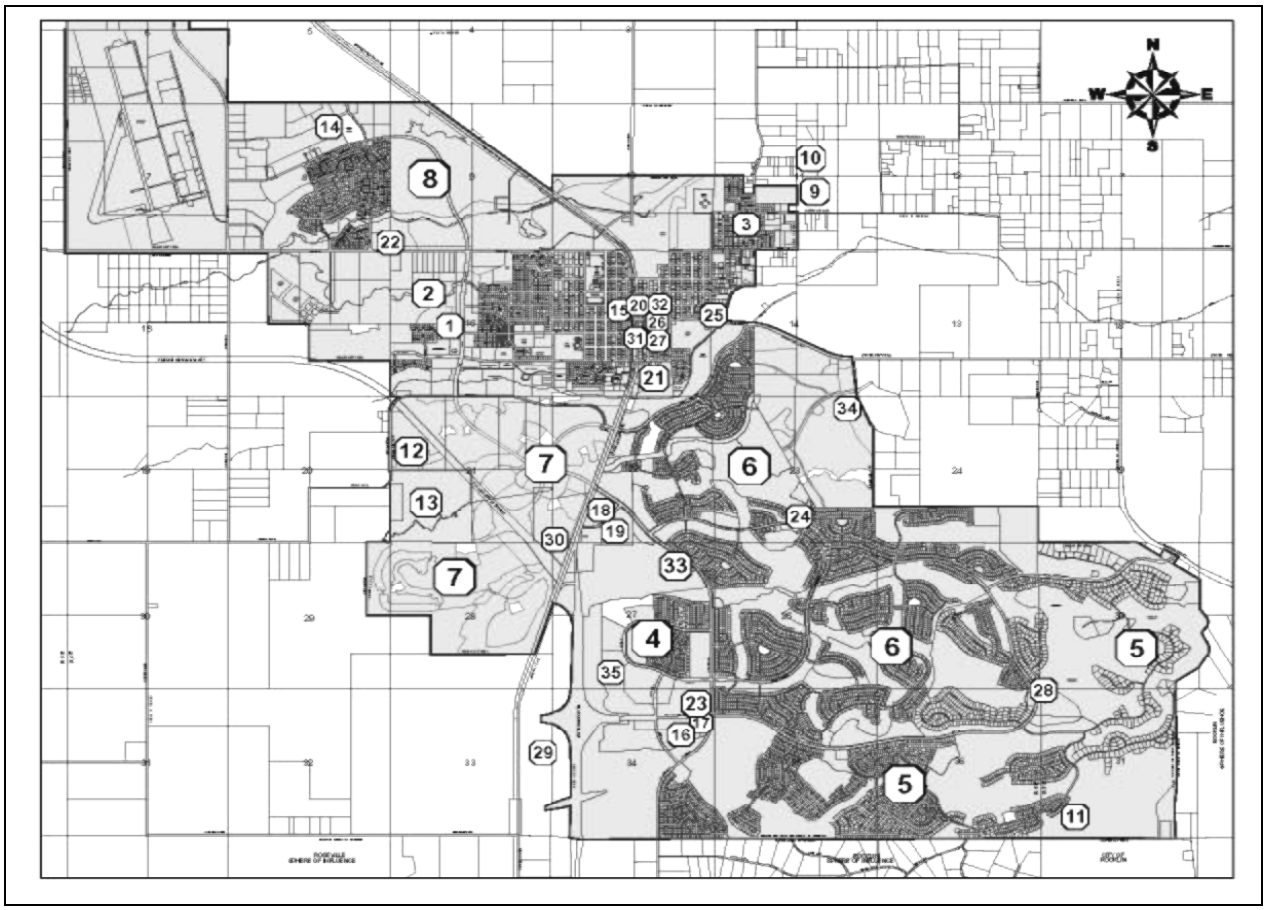
Table 3-1 Current Projects for the City of Lincoln (10/14/04) (refer to Figure 3-9)

# On Map	Residential Projects		
1	Lincoln Terrace Apartments	80 Unit apartment complex	2.06 ha (5.1 ac)
2	Brookview IV	209 Single Family Residential	23.4 ha (58 ac)
3	Sycamore Ventures	14 Single Family Infill lots	Not available
4	Twelve Bridges Area C	100 Unit Planned Development	20.23 ha (50 ac)
5	Twelve Bridges Area A	4,335 Unit Planned Development	1209.6 ha (2,989 ac)
6	Twelve Bridges Sun City Lincoln Hills	11,235 Unit Planned Development	1191.8 ha (2,648 ac)
7	Lincoln Crossing	2,958 Unit Planned Development	433.0 ha (1,070 ac)
8	Foskett Ranch	323 low- and high-density residential	117.36 ha (290 ac)
9	Lincoln Highlands	196 Residential	19.42 ha (48 ac)
10	Cypress Meadows	84 Residential	8.09 ha (20 ac)
11	Western Placer Education Foundation	71-lot single family homes	10.52 ha (26 ac)
12	Three D South	185 lot subdivision	28.29 ha (69.9 ac)
13	Aitken Ranch	472 unit planned development	63.13 ha (156 ac)
14	Lakeside 6	706 Residential units	42.49 ha (105 ac)
	Industrial/Commercial Projects		
15	Butterfield Building Renovations	Historic building renovations	Not available
16	Lincoln Village Shopping Center	Shopping center (95,424 ft^2)	4.09 ha (10.1 ac)
17	Chevron Station, Twelve Bridges	Gas station, convenience store, carwash (2,945 ft^2)	Not available
18	Sterling Pointe Shopping Center	Shopping Center with Supermarket (144,000 ft^2)	Not available
19	Parkway Pointe Shopping Center	Shopping center (179,800 ft^2)	Not available
20	Almond Tree Commercial Building	Restaurant, lounge, office space (14,103 ft^2)	Not available
21	Lincoln Gateway	Retail, commercial, office, housing	7.34 ha (18.14 ac)
22	Nicolaus Retail Center	Commercial (20,400 ft^2)	0.93 ha (2.3 ac)
23	Lincoln Commercial Center	Shopping center with supermarket (118,763 ft^2)	5.38 ha (13.3 ac)
24	Del Webb Commercial Development	Neighborhood shopping center (19,910 ft^2)	1.0 ha (2.47 ac)
25	Lincoln Produce	Market and office (10,700 ft^2)	Not available
26	Zisk Office Building	Residential conversion to Office space	Not available
27	Farrington Office Building	Office Building (8,050 ft^2)	Not available
28	Catta Verdera Country Club	Private Country Club (27,000 ft^2)	Not available
29	Lincoln 270	City annexation	112.5 ha (278 ac)
30	Home Depot	Commercial building and garden	Not available

# On Map	Residential Projects		
		center (106,507 ft^2 and 34,646 ft^2)	
31	Volen Commercial Buildings	2-Story Commercial Building (5,032 ft^2)	Not available
32	Lavallee Office Building	Office/Retail (1,404 ft^2)	Not available
	Other:		
33	Granite Springs Church	35,075 ft^2	Not available
34	St. Joseph's Catholic Church	20,851 ft^2	Not available
35	Kaiser Permanente	2 Story Medical Building (75,138 ft^2)	Not available

Updated 10/14/04 by Juanita Cano, Community Development Department
Underlined projects updated 6/22/05, Source: http://www.ci.lincoln.ca.us/pagedownloads/Current%20Projects%205-3-05.pdf

Figure 3-9 Current Projects in the City of Lincoln



Updated 10/14/04 by Juanita Cano, Community Development Department

3.1.4 Federal, State, County and City Adopted Goals and Policies

Agriculture

Federal Policies

In accordance with the National Environmental Policy Act (NEPA) and the provisions of the Farmland Protection Policy Act (7 USC 4201-4209; and its regulations, 7 CFR Part 658), Federal actions that would result in a conversion of prime, unique, statewide, or local important farmland to non-farm use must examine the effects of the action using the criteria set forth in the Act, and, if there are adverse effects, must consider alternatives to lessen them. Early consultation with the Natural Resource Conservation Service (NRCS) and completion of a Farmland Conversion Impact Rating (Form AD 1006) was conducted on June 22,1999.

State Policies

The State of California has a voluntary program by which owners of farmland or open space can define their land as an Agricultural Preserve through the use of California Land Conservation (Williamson) Act contracts. Landowners are offered a preferential tax rate based on a property's agricultural value, rather than its full market value. In return, the landowner is required to sign a contract with the appropriate local jurisdiction stipulating that the owner will not develop the land for a minimum of a ten-year period. Each year the contract is automatically renewed for a new ten-year period, unless the landowner notifies the local government of the desire not to renew. In that case, the land use restrictions remain in effect until the remaining nine years of the contract have passed. There are also provisions for canceling the contract if cancellation is consistent with the purposes of the Williamson Act or otherwise found to be in the public interest.

The Department of Conservation Farmland Mapping and Monitoring Program has tracked protected farmland under the California Land Conservation (Williamson) Act. Figure 3-5 shows the farmland in Placer County and Figure 3-4 shows farmland under the Williamson Act.

Table 3-2 distinguishes the number of affected farmlands that are under Williamson Act contracts, farmlands that have opted to not renew the Williamson Act contracts but are still subject to land use restriction for the remainder of the contract, irrigated farmland that is under normal ownership and vacant or dry farmland under normal ownership.

Table 3-2 Affected Farmland Parcels by Alternative

Alternative	CLCA Restriction (Williamson Act)		Farms Under Normal Ownership		Total Affected Farmland
	Under Contract[1]	Non-Renewal[2]	Irrigated Farm[3]	Vacant, Dry Farm[4]	
A5C1	8	7	1	6	22
AAC2	9	7	1	5	22
D1	14	13	3	7	37
D13	17	13	3	8	41
D13 South Modified	15	7	1	5	28
D13 North Modified	16	8	1	4	28

Source: Dept. of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program, Placer County 1996 Land Conservation Act Enrollment.

[1] "Under Contract" means that these farmlands are under an automatically renewable contract provided by the California Land Conservation Act (Williamson Act) for a ten-year period.

[2] "Non-Renewal" means that the landowners had previously signed a ten-year contract provided by the California Land Conservation Act (Williamson Act) but have opted not to renew. Therefore, the farmland is subject to land use restrictions for the remaining nine years of the contract.

[3] "Irrigated Farm" means that the land is considered irrigated farmland under normal ownership. Therefore, the farmland is under no land use restrictions.

[4] "Vacant, Dry Farm" means that the land is either vacant but previously farmed or is dry farmed and is under normal ownership. Therefore, the farmland is under no land use restrictions.

Placer County Policies

Recognizing the importance of agriculture, the Placer County Board of Supervisors adopted the Placer County Agricultural Element (1989) to supplement the Countywide General Plan in order to "establish policies that will improve the viability of agricultural operations and promote the conservation of agricultural land."

City of Lincoln Policies

Although agriculture does not occupy a large amount of the area within the City of Lincoln, there are policies outlined in the General Plan to retain rural agricultural areas until the need for development emerges. These agricultural policies are meant to ensure that agriculture will continue to be a significant land use by implementing planned development based on economic and population needs. Additionally, Lincoln has adopted the policy to require that agricultural land uses be buffered from urban land uses using greenbelts, open space setbacks, soundwalls, fencing and berming.

Sheridan Community Policies

Sheridan's economy is strongly influenced by the agricultural presence; consequently, the General Plan emphasizes the preservation of agricultural land uses. Sheridan's goal for agriculture as an environmental resource specifies "more productive agricultural soils be put to agricultural uses rather than being converted to non-agricultural activities." Additionally, Sheridan's community development goal also

encourages the "continued and increased agricultural activity on lands conducive to agricultural uses."

Residential

Placer County Policies

According to the Placer County General Plan, the goal for residential land use is "to provide adequate land in a range of residential densities to accommodate the housing needs of all income groups expected to reside in Placer County." This is accomplished by promoting new residential development in higher-density residential areas located along major transportation corridors and transit routes.

City of Lincoln Policies

The goal for residential land use outlined in the Lincoln General Plan is "to designate, protect and provide land to ensure sufficient residential development to meet community needs." The city seeks to accomplish this by providing a variety of land use designations that will meet the future needs of the city and promote flexibility and innovation in residential land use through the use of planned unit developments, developer agreements, specific plans, mixed use projects and other innovative development and planning techniques.

Recently, the City's residential developments have increased due to population growth and housing demands. Lincoln's General Plan is currently being updated. It is anticipated that new residential zoning will be added within the City's sphere of influence.

Sheridan Community Policies

The Sheridan Community General Plan has adopted a residential land use goal to provide sound and adequate housing and positive living experience for all residents in the plan area. However, there have not been any policies implemented to support Sheridan's land use goal.

Industrial

Placer County Policies

The Placer County adopted goal for industrial land use states that it will "designate adequate land for and promote development of industrial uses to meet the present and future needs of Placer County residents for jobs and maintaining economic vitality."

Additionally, the County shall designate specific areas suitable for industrial development and reserve such lands in a range of parcel sizes to accommodate a variety of industrial uses.

City of Lincoln Policies

The industrial land use goal for the City of Lincoln is "to designate sufficient land for existing and new industrial uses that is compatible with the existing community." Policies supporting industrial land uses in the City of Lincoln include designating land sufficient to meet future needs by promoting planned mixed-use developments.

The City anticipates light industrial development surrounding the current local airport, which supports their plans to expand the airport.

Sheridan Community Policies

Sheridan's industrial land use goal and policies encourage the development of industry where suitable lands and public services are available. Additionally, the Sheridan General Plan emphasizes that industrial land uses should not conflict with adjacent uses.

Commercial

Placer County Policies

Similar to Placer County's industrial land use goal, the adopted commercial land use goal is "to designate adequate commercial land for, and promote development of, commercial uses to meet the present and future needs of Placer County residents and visitors and maintain economic vitality."

The diversion of "through" traffic from the downtown business district will likely promote pedestrian circulation from nearby residential areas. The mixed-use planned development projects will also encourage pedestrian circulation since they include both residential and commercial land uses. Furthermore, it is likely that a majority of the commercial land uses will be located near the chosen alignment to avoid noise impacts on residential areas.

City of Lincoln Policies

The City of Lincoln has adopted a commercial land use goal "to retain and renew existing commercial land uses and designate sufficient new commercial areas to meet future city needs." To support Lincoln's land use goal, policies address issues of land use incompatibilities by implementing planned mixed-use development projects.

Sheridan's Policies

Sheridan's goal for commercial land use is to "provide convenient and sufficient commercial facilities for the daily needs of residents and travelers through the area." The Sheridan General Plan implements a commercial land use policy of expanding

commercial areas on routes of major traffic; however, the County would be responsible for new commercial development and the remodeling of existing commercial structures.

Resource Protection, Greenbelt, Open Space, and Recreation

Placer County Policies

Placer County's goal for resource protection, greenbelts, open space and recreation is to establish and maintain interconnected greenbelts and open spaces for the protection of native vegetation and wildlife and for the community's enjoyment. This goal is accomplished by identifying significant natural, open space and cultural resources in advance of development to allow incorporation into the project design. In addition, the County requires that development avoid areas rich in wildlife or of a fragile ecological nature.

The Placer Legacy Citizens Advisory Committee (Placer Legacy) has been formed to help develop a long-range comprehensive open space protection plan. Along with the formation of the Placer Legacy, an open space trust fund has been established to ensure the protection and maintenance of open space lands in Placer County.

City of Lincoln Policies

The City of Lincoln's goal is to designate, protect, and conserve natural resources, open space and recreation lands in the City; and provide opportunities for recreational activities to meet citizen needs.

Sheridan Policies

Sheridan's goal for resource protection, greenbelts, open space and recreation is to plan for adequate recreational facilities. However, there have not been any policies adopted to support this goal.

3.1.5 Demographic Profile and Trends

The following sections identify the composition of the areas affected by the proposed project.

The Study Area is composed of census tracts 213.01, 213.03, 213.04, 214.01 and 214.02. Information regarding the Study Area's demographic profile and trends were compiled from the 2000 United States Census (U.S. Census) and from the California Department of Finance where available. Census tracts 213.01 and 213.04 include the Sheridan community as well as the outlying rural agricultural areas. Projections and estimates regarding the more urban area of Lincoln have been provided whenever available to establish trends of the Study Area.

Population

The population totals for census tracts 213.01, 213.03, 213.04, 214.01 and 214.02 were 2,747, 5,479, 4,727, 2,495, and 6,960 respectively, totaling 22,408 people. According to the Sacramento Area Council of Governments, Lincoln had moderate population growth up until 1999. From 1999 to 2000, population jumped approximately 29%. This annual growth rate is expected to decrease and level off in 2015 to a rate of less than 1% making the average annual growth rate for the next 25 years at 7.35%. Expected population in Lincoln by the year 2025 is approximately 33,000. *(http://sacog.org/demographics/projection).*

Age Distribution

The median age range for tracts 213.01, 213.03, 213.04 and 214.01 in 2000 was 33-40 while tract 214.02 the median age was 30. The median age range may increase for tract 213.03 and 213.04 once the Twelve Bridges development is constructed due to the 6,334 age-restricted dwelling units intended for seniors.

Ethnic Mix

Table 3-3 shows that White residents dominated the 2000 population (78.5% in the Study Area with 17,601 persons. The Placer County ethnic make-up shows analogous trends and is projected to maintain a similar ethnic mix. Based on Community Impact Assessment, tract 214 Block Group 2 (based upon 1990 census) does have a high concentration of minorities. Census 2000 shows the following blocks as having a high percentage of minorities: 213.03, 213.04 and 214.02. These areas straddle the existing alignment and are not expected to incur direct impacts from any of the proposed alignments. A potential indirect impact could include a decrease in accessible public transportation. Although minor changes to the current bus route are inevitable due to access changes, local transit authorities anticipate that the areas serviced will increase as the needs change due to development.

Figure 3-10 Census Tracts

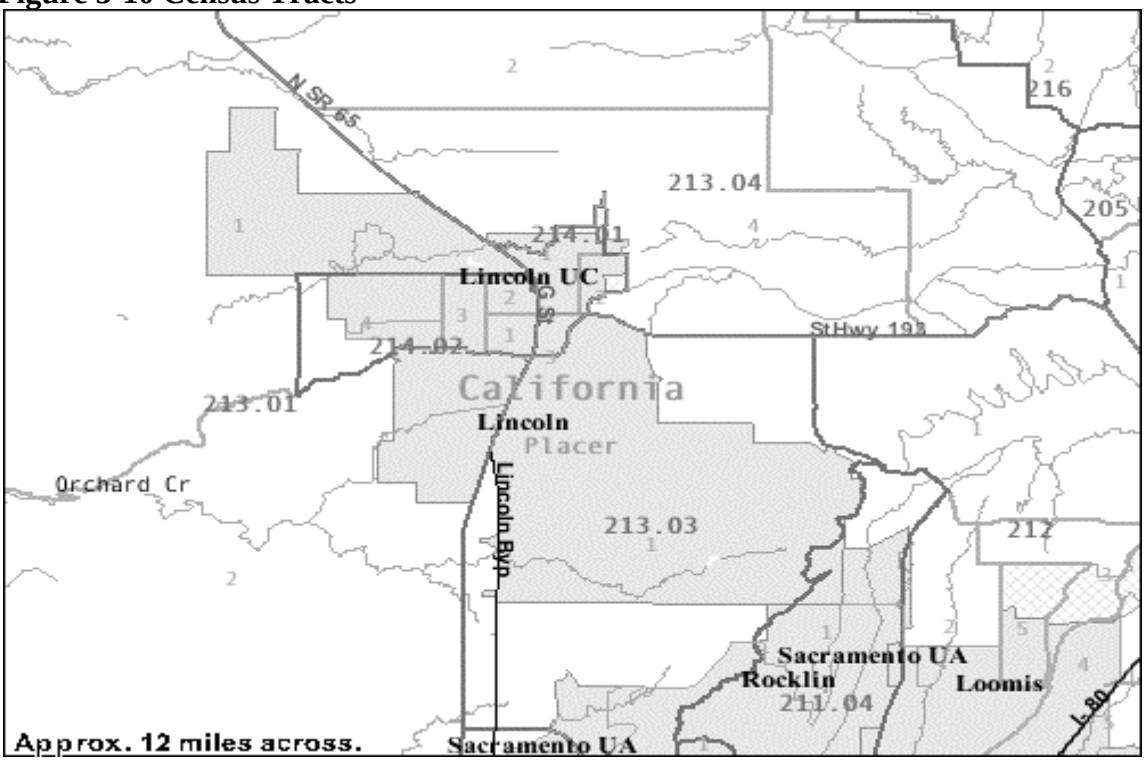


Table 3-3 Ethnic Composition of the Study Area Population for 2000

Ethnicity	Tract 213.01 (% of tract total)	Tract 213.03 (% of tract total)	Tract 213.04 (% of tract total)	Tract 214.01 (% of tract total)	Tract 214.02 (% of tract total)	Study Area Total	Percentage of Study Area
White	2343 (85.3%)	4700 (85.8%)	4065 (86%)	1789 (71.7%)	4704 (67.6%)	17,601	78.5%
Black	23 (0.8%)	87 (1.6%)	14 (0.3%)	3 (0.1%)	31 (0.4%)	158	0.7%
American Indian, Eskimo Aleutian, Asian, Pacific Islanders, and other	83 (3.0%)	300 (5.5%)	158 (3.3%)	35 (1.4%)	162 (2.3%)	738	3.3%
Hispanic	298 (10.8%)	392 (7.2%)	490 (10.4%)	668 (26.8%)	2063 (29.6%)	3,911	17.5%
Total	2,747	5,479	4,727	2,495	6,960	22,408	100%

U.S. Census Bureau 2000

3.1.6 Household Size and Composition

Table 3-4 shows the number of households, number of families, and the persons per family found in the Study Area in 2000. Tract 213.03 had the highest percentage of families (86.2% living together, followed by tract 213.01 (81.9%), and tract 213.04 (80.7%). For the Study Area, 81.8% of the households were home to families. The family size ranged from 3.20 to 3.33 persons per family in the area. Similar to the age distribution of the Study Area, the average family size may decrease due to an influx of older persons projected to move into the age-restricted homes currently planned.

Table 3-4 Household Population in Study Area (2000)

	Tract 213.01	Tract 213.03	Tract 213.04	Tract 214.01	Tract 214.02	Total
Households	975	1,842	1,636	856	2,297	7,606
Families	799	1,587	1,320	656	1,799	6,161
Average family size	3.10	3.20	3.17	3.27	3.33	-

U.S. Census Bureau 2000

3.1.7 Personal Income

Table 3-5 outlines income levels for the Study Area. Poverty guidelines for 1999 are $ 16,700 for a family of four. Poverty guidelines for 2001 are $17,650 for a family of four. (U.S. Census Bureau 2000) The mean percentage of persons living below the poverty rate in 1999 was 6.38% with a standard deviation of 5.8. Therefore, areas that displayed percentages greater than 12.2% may be considered high concentration areas of low-income people. Census tract 214.01 Block Group 1 has 13.5% of its population living below the poverty rate. Census tract 214.02 Block Group 3 has a highest percentage of its population living below poverty status with 20.6%. However, this area will continue to grow and further construction of new homes would have the potential to attract people with higher incomes and would change the income profile of the block group. Furthermore, the region has benefited from a surge of hi-tech industries that has contributed to lowering the unemployment rate and potentially decreasing the amount of people living below the poverty rate.

Table 3-5 Income and Poverty Data for Study Area (1999)

Census Tract	213.01		213.03	213.04			
Block Group	1	2	1	1	2	3	4
Median Household Income	58,689	52,500	87,347	51,144	36,000	54,539	68,661
Median Family Income	67,727	53,854	91,081	69,583	33,646	56,458	86,005
Per Capita Income	24,090	22,044	32,597	24,474	22,320	28,468	21,583
Persons Below Poverty Status*	80	87	25	211	27	72	18
Percentage of Persons Below Poverty Status	4.6%	8.6%	0.4%	1.2%	4%	5.8%	1.7%

**Poverty guidelines for 1999 are $ 16,700 for a family of four. Poverty guidelines for 2001 are $17650 for a family of four. U.S. Census Bureau 2000*

Table 3-6 Income and Poverty Data for Study Area (1999) Continued

Census Tract	214.01			214.02			
Block Group	**1**	**2**	**3**	**1**	**2**	**3**	**4**
Median Household Income	45,156	29,861	53,393	47,639	41,806	33,086	75,044
Median Family Income	47,361	34,643	62,813	49,567	50,833	38,233	78,076
Per Capita Income	19,552	15,022	22,122	17,804	15,139	13,914	30,641
Persons Below Poverty Status*	141	58	8	75	95	903	0
Percentage of Persons Below Poverty Status	13.5%	6.6%	2.3%	7.8%	1.2%	20.6%	0%

**Poverty guidelines for 1999 are $ 16,700 for a family of four. Poverty guidelines for 2001 are $17650 for a family of four. U.S. Census Bureau 2000*

Housing Characteristics

Housing Stock

In January, 2004, Lincoln had a total of 9,964 housing units composed of 90.11% single family residents, 8.92% multiple unit complexes, and .96% mobile homes (Table 3-7). The housing vacancy rate was 3.78%. Neighboring cities such as Rocklin and Roseville experienced vacancy rates of 3.58% and 3.72% respectively. The high 11.22% vacancy rate for Placer County is likely due to the popularity of vacation homes in the resort areas of the county.

Table 3-7 Placer County Housing Estimates (2004)

Area	Total Housing	Single Family	Multiple Unit	Mobile Home	Occupied	Percent Vacant	Persons/ Household
Auburn	5,732	4,052	1,680	0	5,569	2.84	2.232
Colfax	784	524	227	33	758	3.32	2.346
Lincoln	9,964	8,979	889	96	9,587	3.78	2.392
Loomis	2,342	2,162	67	113	2,274	2.90	2.723
Rocklin	19,175	14,140	4,596	439	18,461	3.72	2.638
Roseville	40,136	30,611	8,982	543	38,700	3.58	2.477
Balance of County	51,178	42,827	4,858	3,493	39,450	22.92	2.563
Unincorporated	78,133	60,468	16,441	1,224	75,349	3.56	2.494
County Total	129,311	103,295	21,299	4,717	114,799	11.22	2.518

Source: California Department of Finance, Demographic Research Unit 2004

The Final Relocation Impact Report (FRIR) indicates that the available single family residences, multiple family units, and mobile homes for rent and for sale was estimated at 4.4% for each category. Although the numbers of multiple-family dwellings

are increasing to meet the increased demand for rental units, the overall ratio of multi-family to single family units remains low.

3.1.8 Economic Conditions

Employment

Table 3-8 shows that in 2001 the leading employment sectors in Placer County were services, trade, government, manufacturing and construction. Industry employment projections for forecast period of 1997-2004 estimates the services industry will grow to 35,600 jobs by the year 2004. Within the services industry, the majority of this growth is projected for the business services component. Trade has been growing steadily and projections for wholesale and retail trade will increase almost 35 percent between 1997-2004. A big portion of this retail growth is occurring due to large retail facilities opening in the Roseville/Rocklin area, such as the Roseville Galleria. Retail growth is expected to continue due to this area being one of the state's fastest population growth areas and rapid increase of high wage jobs in the region. The highest increases in industry markets between 1997 and 2004 will be in Manufacturing (53.4%), Services (43.0%) and Retail Trade (34.7%). Construction transportation/public utilities and finance/insurance/real estate are also expected to see increases of jobs available.

Table 3-8 Placer County Employment by Industry (2001)

Industry	Share Of Market
Services	27.3%
Retail Trade	22.4%
Government	15.4%
Manufacturing	11.8%
Construction & Mining	11.7%
Finance, Insurance & Real Estate	5.7%
Transportation & Public Utilities	3.6%
Wholesale Trade	3.0%
Agriculture	.3%

California Employment Development Department, 2002 Snapshot at http:www.calmis.ca.gov

Employers

Table 3-9 shows that in 2004, the largest employers in Placer County were located in Roseville, including Hewlett-Packard, PRIDE Industries and Kaiser Permanente and Thunder Valley Casino. In addition, many high technological companies have relocated to Roseville in the recent years. Projections indicate that Placer County will continue to attract high technology industries because of quality of life, cost of housing and recreational opportunities. As the county seat, Auburn has a high concentration of government workers while Rocklin's prominent employers are Hewlett-Packard and

TASQ Technology Inc. The City of Lincoln's leading employer, Sierra Pacific Industries, ranks in the lower spectrum of major employers in Placer County.

Table 3-9 Largest Private Sector Employers in Placer County (2004)

Name – City	Industry	Number of Employees
Hewlett-Packard Company – Roseville, Rocklin	Computer & Office Equipment-Manufacturing	4,000
Kaiser Permanente – Roseville	Hospitals	2,707
Thunder Valley Casino	Casinos	2,200
Sutter Roseville Medical Center – Roseville	Hospitals	1,672
Squaw Valley Ski Corp. – Olympic Valley	Misc. Amusement, Recreation Services	1,500
Union Pacific Railroad – Roseville	Transportation, Railroad	1,200
Pride Industries – Auburn/Roseville	Individual & Family Services	1,050
SureWest Communications	Telecommunication Services	1,000
NEC Electronics USA Inc. – Roseville	Electronic Components & Accessories	850

Source: Sacramento Regional Research Institute, December 2004.

Labor Force

As shown in Table 3-10, the 2004 civilian labor force in Placer County was 143,500 with a 3.8% unemployment rate. Unemployment in Placer County has been steadily dropping since its peak of 8.0% in 1992. Of the communities in the vicinity of the Study Area, Lincoln's unemployment rate was the highest at 4.5% followed by Roseville at 4.1%.

Table 3-10 Placer County Civilian Labor Force and Employment Rates (12/04)

Area Name	Labor Force	Employment	Unemployment	Unemployment Rate
Placer County	143,500	138,000	5,500	3.8%
Auburn	8,270	7,990	280	3.3%
Lincoln	5,450	5,200	250	4.5%
Loomis	4,590	4,420	170	3.7%
Rocklin	16,720	16,120	600	3.6%
Roseville	37,750	36,220	1,530	4.1%

Source: California Employment Development Department, Labor Market Information Division, December 2004

Personal Income

Table 3-11 outlines income levels for tracts 213.01, 213.03, 213.04, 214.01 and 214.02. In 2000, 8% of the population in the Study Area lived below the poverty level. Poverty guidelines for 2001 are $ 17,650 for a family of four. Tract 214.02 had the highest percentage (15%) of people living under the poverty guidelines followed by tract 214.01 that had 8.2%% people while tract 213.01 had 6%, tract 213.03 had .5%, and tract 213.04 had 6.9%.

Table 3-11 Income and Poverty Data for 2000

	Tract 213.01	Tract 213.03	Tract 213.04	Tract 214.01	Tract 214.02	Total
Median Household Income	$56,432	$87,347	$52,286	$41,010	$40,995	-
Median Family Income	$60,129	$32,597	$24,577	$18,192	$16,151	-
Per Capita Income	$23,336	$32,597	$24,577	$18,192	$16,151	-
Persons Below Poverty Status*	167	25	328	207	1,073	1,800
Households with Public Assistance Income	39	23	40	28	181	311

**Poverty guidelines for 1999 are $ 16,700 for a family of four. Poverty guidelines for 2001 are $17650 for a family of four. U.S. Census Bureau 2000*

Fiscal Conditions

Placer County collected approximately $63 million in property taxes for the 2001-02 fiscal year in comparison to the $35.1 million collected in the 1995-96 fiscal year. Property taxes in the City of Lincoln also increased during this period, and accounted for over $1 million of their $6 million tax revenue total received in the 2001-02 fiscal year. Due to the increasing residential development in the Study Area, property taxes are expected to continue to increase.

Based on the Study Area's sales tax figures, business activity has decreased over the past few years. Many of the companies now located in Lincoln are of a manufacturing and service nature. There has been a steady decline in sales tax revenue because many shopping centers have emerged in Rocklin and Roseville. However, sales oriented business in Lincoln are expected to rise by 15% to 20% over the next five to ten years which would potentially increase the sales tax revenue.

3.1.9 Jobs/Housing Balance

Regional Jobs/Housing Conditions

Employment in Placer County is expected to increase by 98% by 2025 from the year 2000 and the employment in neighboring Sacramento County are expected to increase by 45% during that same time frame. Statistics for housing for the same period show that Placer County is expected to increase by 77% while housing in Sacramento County is expected to increase by 40%. Due to Lincoln's proximity to regional job markets such as Roseville and Rocklin, the City of Lincoln will experience an increase in housing to accommodate regional growth. The expected increase in population is likely due to the dwelling units proposed for the Study Area that are primarily concentrated in and around the City of Lincoln. However, the largest planned residential development, Twelve Bridges, will consist of 6,334 age-restricted dwelling units that will potentially increase the percentage of the retired population. However, this is not likely to impact regional jobs or commuting traffic. Although the planned developments have included

approximately 86.4 ha (213.4 ac) of commercial land use and there is still an abundance of vacant industrial land available, it is likely that a large portion of the population will continue to commute to the outlying areas.

3.1.10 Existing Travel Patterns

Currently, SR 65 is the main street serving the community of Lincoln. Most of the businesses in Lincoln are located either on or just off SR 65. City Hall is one block down from SR 65 and the Library and the Pavilions; a community hall, are both generally accessed via SR 65 or SR 193. Outside the business core of the city of Lincoln are residential areas. Figure 1-4, in Chapter 1, shows the circulation system as found in the Lincoln General Plan.

Due to the proximity of the regional job markets in Rocklin, Roseville and Sacramento, commuting on SR 65 will increase thus placing further demand upon the existing highway. According to commuting statistics for 2000, of the 4,698 workers in Lincoln who commuted to work, 3,609 of them drove alone and 749 carpooled. Only 132 workers walked to work and 156 worked at home. The mean travel time to work was 28.6 minutes.

SR 193 provides a link with the community of east Rocklin and Sierra College, a community college.

Bicycles & Pedestrians

Bicycle routes are discussed in Chapter 1, Section 3.6. SR 65 is not included in the adopted bicycle plan for Lincoln; however, the portion of SR 65 from Roseville to SR 193 is included in the Placer County Master Bikeways Plan. This would remain the same after the Bypass was constructed.

SR 65 is a busy road, and pedestrians generally only use this road when their car breaks down. Through the town, however, pedestrian traffic is common.

3.1.11 Community Facilities and Services

Figure 3-11 shows the community facilities such as schools, libraries and fire departments. The town of Sheridan has no facilities such as a Fire Department or library, instead relying on Lincoln's facilities and services.

Schools

Carlin C. Coppin Elementary, Valley View Elementary, Creekside Oaks Charter Elementary, First Street Elementary and Heritage Elementary Schools are located in Lincoln and Sheridan Elementary School is located in Sheridan. The Glen Edwards Middle School in located in Lincoln as well as three high schools, Lincoln High School, Lincoln High North, and Phoenix High School. The Horizon Instruction Systems

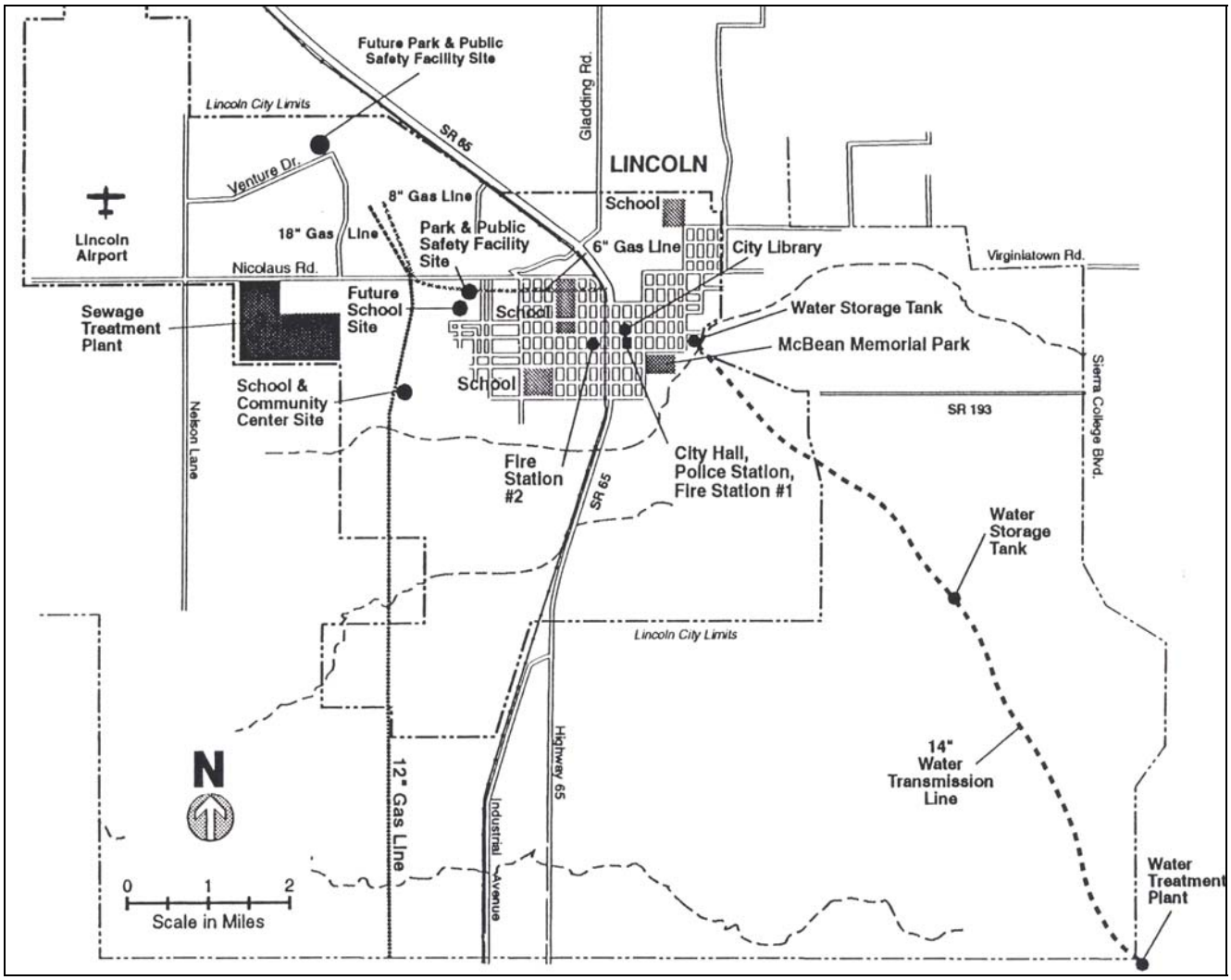
independent correspondence study program serves K-12 students that generally do not live in Placer County although it is located in Lincoln.

Police and Fire Protection

The area under Placer County's jurisdiction is patrolled by the Placer County Sheriff's Department. The Sheriff's Department is responsible for general law enforcement activities throughout the County. Similarly, the City of Lincoln Police Department has jurisdiction within the City limits and provides general law enforcement.

The South Placer Fire Protection District provides services to areas under the County's jurisdiction. The City of Lincoln's volunteer Fire Department is housed with the City of Lincoln Police Department.

Figure 3-11 Community Services & Public Facilities



3.2 GEOGRAPHY AND TOPOGRAPHY

3.2.1 Topography

The proposed project is located near the eastern edge of the lower Sacramento Valley. The Sacramento Valley is a broad lowland, approximately 80 km (50 mi) wide in the project area. The Coast Range on the west and the Sierra Nevada Range to the east border the valley. The project area is characterized by gently rolling hills, ranging in elevation from 24 to 46 m (80-150 ft) above sea level, sloping to the north and west toward the Bear and Feather Rivers. Prominent topographic features within the project area include the Auburn Ravine, Markham Ravine and Ingram Slough.

3.2.2 Climate

The climate in Lincoln is characterized by hot, dry summers and cool, wet winters, which is typical of the California Central Valley. Average temperatures range from about 27° C (80° F) in summer to 7° C (45° F) in winter, with temperature extremes of 47° C (110° F) in summer and -7° C (20° F) in winter. Annual rainfall averages about 5.6 cm (22 in) per year, with most of it falling between October and March (Lincoln General Plan, 1988).

3.2.3 Soils

The soils within the Study Area are predominately of the Fiddyment-Trigo-Rocklin association. The soils in this association occur on gently sloping terraces and strongly sloping sideslopes.

To the east, they adjoin the bedrock areas of the lower foothills. These soils are mostly well drained and developed in granitic alluvium and outwash from the Sierra Nevada Mountains. They are mostly shallow, meeting with claypans or hardpans and have medium runoff and moderate erosion hazard (SACOG 1988b). Soils in this area include Cometa-Fiddyment Complex, Cometa-Ramona Sandy Loams, Kilaga Loam, San Joaquin Sandy Loam, and Xerofluvents (EIP Associates 1992b). The erosion hazard of the soils varies from slight erosion hazard in the floodway fringes to high erosion hazard in the recent alluvium deposits adjacent to stream channels (Caltrans 1999).

The Placer County Natural Resources Conservation District completed a survey of productive soils for Placer County, and identified areas within the Lincoln planning area having prime soils. Major prime soil areas exist adjacent to the Auburn Ravine, north of the Gladding McBean plant, and in the southwestern portion of the planning area. All alternatives will pass through some of the prime soils with Alternatives D1 and D13 passing through a greater amount of the prime soils (Caltrans 1999).

3.2.4 Geology

The project site is located in the Sacramento Valley portion of the Great Valley Geomorphic Province on California. This portion of the valley is underlain by unconsolidated older alluvium of Pleistocene and Holocene age. Pliocene to Pleistocene deposits of continentally derived sand, silt, clays and poorly sorted gravel underlie older alluvial deposits. Marine sedimentary rocks yielding saline waters may underlie continental derived sedimentary rocks at depth. The geologic basement of the region is composed of meta-sedimentary and meta-volcanic rocks. Structurally, the consolidated sediments have been folded into a west-dipping homocline formed by the westward tilting of the Sierra Nevada structural block (Ross and Gannaway, 1999).

3.2.5 Seismic

Faults in the general region with a moderate to high potential for surface rupture include the San Andreas Fault, approximately 162 km (100 mi) to the west, the Dunnigan Hills Fault located approximately 57 km (35 mi) to the northwest and the Foothills Fault Zone located approximately 16 km (10 mi) to the east. The relevant seismic data is presented in Table 3-12.

Table 3-12 Faults in Area

Fault	Estimated distance from project	Maximum credible earthquake magnitude on Richter Scale
Foothills Fault Zone	16 km East (10 mi)	6.5
San Andreas Fault	162 km West (100 mi)	8.0
Dunnigan Hills Fault	57 km Northwest (35 mi)	6.5

There is no evidence to indicate that the proposed project is located on identified active faults. Therefore, the potential risk of damage due to fault rupture is considered low.

Liquefaction

Soil liquefaction is a process by which water-saturated sediment temporarily loses strength and acts as a fluid, like when you wiggle your toes in the wet sand near the water at the beach. This effect can be caused by earthquake. Soils most susceptible to liquefaction are loose, clean and uniformly graded fine-grained sands. Silty sands also liquefy during strong shaking. As noted earlier, the underlying soil is a clay material. Therefore, the potential for liquefaction is considered low.

3.3 AIR QUALITY

An Air Quality Report was completed for this project in March 2001. Copies of this report are available for review at the Department of Transportation, District 3 Sacramento office, 2389 Gateway Oaks Dr., Sacramento, CA.

Weather and topography both influence air quality. This region is subject to temperature inversions, trapping pollutants at ground level. Surface inversions 0-152 m (0-500 ft) are most frequent during the winter, while subsidence inversions 305-610 m (1,000-2,000 ft) are more frequent during the summer. Generally, the lower the inversion base height and the greater the rate of temperature increase from the base to the top, the more pronounced will be the effect of the inversion on inhibiting dispersion of pollutants.

This project is located in the Sacramento Valley Air Basin, which is under the jurisdiction of the Placer County Air Pollution Control District (PCAPCD) at the local level and the California Air Resources Board (CARB) at the State level. The U.S. Environmental Protection Agency (EPA) is responsible at the Federal level for the implementation of the Federal Clean Air Act of 1970 and amendments in 1977 and 1990. This act requires the EPA to establish National Ambient Air Quality Standards (NAAQS) in order to protect the public health. These standards as well as State standards are shown in Table 3-13. The Placer County portion of the Sacramento Air Basin is classified as follows: ozone is listed as serious non-attainment for Federal and State level, sulfur dioxide, and nitrogen dioxide are in attainment with both the Federal and State standards; and PM_{10} is listed as in attainment for the Federal standard and non-attainment for the State standards.

On April 15, 2004, EPA issued designations on attainment and non-attainment of the 8-hour ozone standard. (http://www.epa.gov/ozonedesignations/) EPA also issued a new rule classifying areas by the severity of their ozone conditions and establishing the deadline state and local governments must meet to reduce ozone levels.

Projects included in the MTIP are consistent with Sacramento Area Council of Governments (SACOG) Metropolitan Transportation Plan and are part of the area's overall strategy for providing mobility, congestion relief and reduction of transportation-related air pollution in support of efforts to attain federal air quality standards for the region.

Ozone

Ozone is made up of reactive organic gases (ROG) and oxides of nitrogen (NOx), which react in the atmosphere when exposed to 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. The new ozone standard reduces allowable concentrations from 0.12 parts per million (PPM) averaged over one hour to a standard of 0.08 PPM averaged over an eight hour period.

Carbon Monoxide

Carbon monoxide (CO) is a public health concern because it combines readily with hemoglobin thus reducing the amount of oxygen transported in the blood stream. Motor vehicles are the dominant source of CO emissions and produce localized pollution problems. The Sacramento region is currently in attainment (maintenance) for CO.

Particulate Matter

Particulate matter of 10 and 2.5 microns or less (PM_{10} and $PM_{2.5}$, also known as PM coarse and PM fine) is a health concern because particles these sizes pass deeply into the lungs when inhaled. Those smaller particles reflect a mix of rural and urban sources, including agricultural activities, industrial emissions and dust suspended by automobiles and trucks.

$PM_{2.5}$ is considered to be more damaging to human health than PM_{10}. Table 3-13 reflects the current standards. Areas within the Study Area have been designated as non-attainment for the PM_{10} and $PM_{2.5}$ state standards.

Sacramento County is designated as non-attainment for the Federal PM_{10} standard, but Placer County is considered Attainment/Unclassified. There are no Federal $PM_{2.5}$ non-attainment areas in the Sacramento Metropolitan area, including the Lincoln area. Conformity requirements under the Federal Clean Air Act apply only for ozone in the Lincoln area.

Table 3-13 Federal and State Ambient Air Quality Standards

Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards [1]		Federal Standards [2]		
		Concentration [3]	Method [4]	Primary [3,5]	Secondary [3,6]	Method [7]
Ozone (O_3)	1 Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	0.12 ppm (235 µg/m^3)[8]	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m^3)*		0.08 ppm (157 µg/m^3)[8]		
Respirable Particulate Matter (PM10)	24 Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		50 µg/m^3		
Fine Particulate Matter (PM2.5)	24 Hour	No Separate State Standard		65 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	15 µg/m^3		
Carbon Monoxide (CO)	8 Hour	9.0 ppm (10mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m^3)	None	Non-Dispersive Infrared Photometry (NDIR)
	1 Hour	20 ppm (23 mg/m^3)		35 ppm (40 mg/m^3)		
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		—	—	—
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	—	Gas Phase Chemiluminescence	0.053 ppm (100 µg/m^3)	Same as Primary Standard	Gas Phase Chemiluminescence
	1 Hour	0.25 ppm (470 µg/m^3)		—		
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	—	Ultraviolet Fluorescence	0.030 ppm (80 µg/m^3)	—	Spectrophotometry (Pararosaniline Method)
	24 Hour	0.04 ppm (105 µg/m^3)		0.14 ppm (365 µg/m^3)	—	
	3 Hour	—		—	0.5 ppm (1300 µg/m^3)	
	1 Hour	0.25 ppm (655 µg/m^3)		—	—	—
Lead[9]	30 Day Average	1.5 µg/m^3	Atomic Absorption	—	—	—
	Calendar Quarter	—		1.5 µg/m^3	Same as Primary Standard	High Volume Sampler and Atomic Absorption
Visibility Reducing Particles	8 Hour	Extinction coefficient of 0.23 per kilometer — visibility of ten miles or more (0.07 — 30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape.		No Federal Standards		
Sulfates	24 Hour	25 µg/m^3	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride[9]	24 Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography			

*This concentration was approved by the Air Resources Board on April 28, 2005 and is expected to become effective in early 2006.

See footnotes on next page ...

California Air Resources Board (5/6/05)

1. California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, suspended particulate matter—PM10, PM2.5, and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

2. National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when the expected number of days per calender year with a 24-hour average concentration above 150 $\mu g/m^3$ is equal to or less than one. For PM2.5, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact U.S. EPA for further clarification and current federal policies.

3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

4. Any equivalent procedure which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.

5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

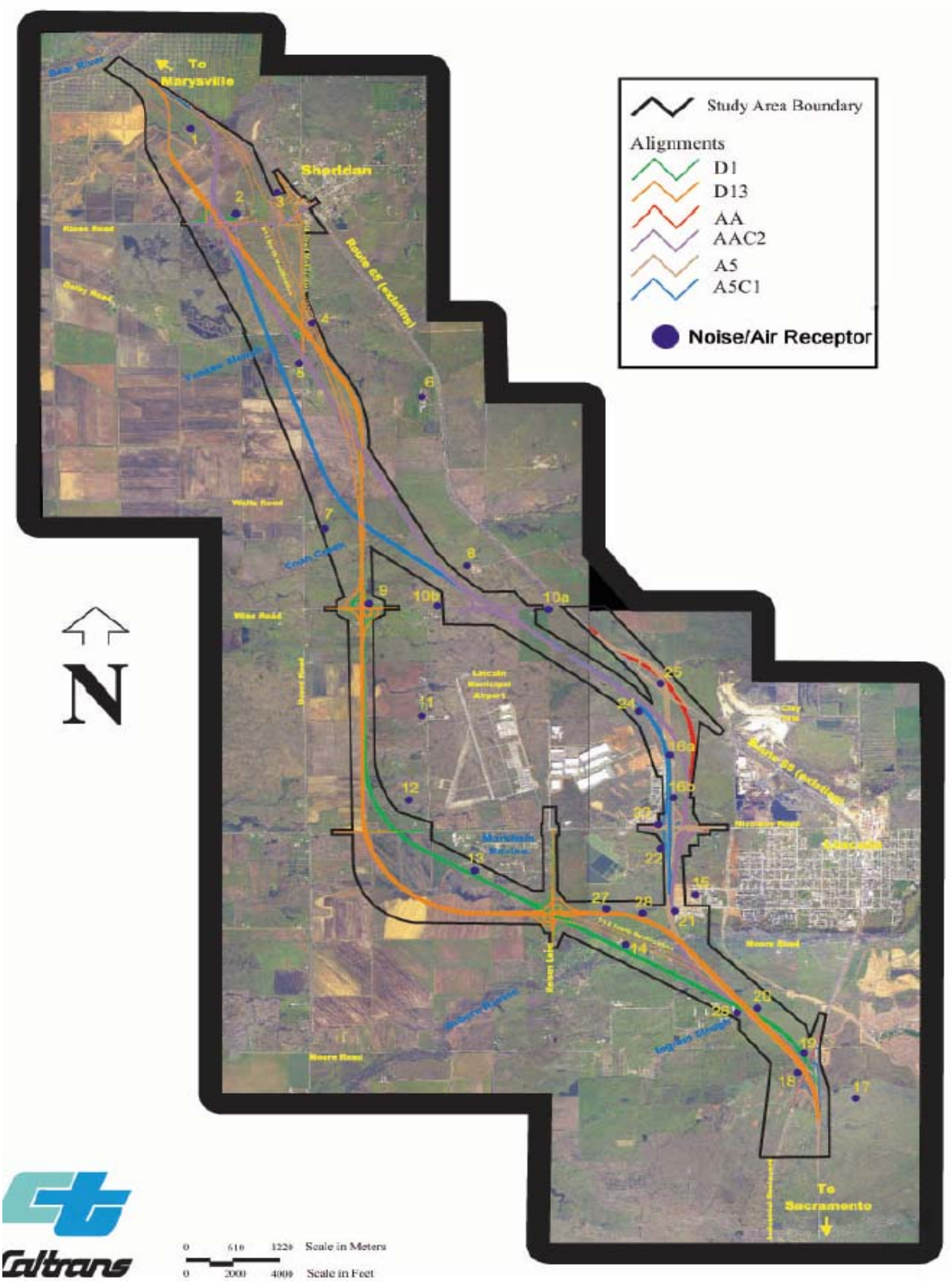
6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

7. Reference method as described by the EPA. An “equivalent method” of measurement may be used but must have a “consistent relationship to the reference method” and must be approved by the EPA.

8. New federal 8-hour ozone and fine particulate matter standards were promulgated by U.S. EPA on July 18,1997. Contact U.S. EPA for further clarification and current federal policies.

9. The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

Figure 3-12 Noise & Air Receptors



3.4 NOISE

A Noise Impact Report was completed for this project in March 2001. Copies of this report are available for review at the Department of Transportation, District 3 Sacramento office, 2389 Gateway Oaks Dr., Sacramento, CA.

3.4.1 Federal and State Regulations, Standards, & Policies

Federal and state regulations, standards and policies relating to traffic noise are discussed in detail in the Department's Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects (Protocol). Transportation projects affected by the Protocol are referred to as Type 1 projects. A Type 1 project is defined in 23 CFR 772 as highway construction on a new location, or the physical alteration of an existing highway that significantly changes either the horizontal or vertical alignment or increases the number of through traffic lanes and is either fully or partially federally funded. FHWA has clarified its interpretation of Type 1 projects by stating that such a project is one that has the potential to increase noise levels at adjacent receivers. Caltrans extends this definition to include state-funded highway projects. The proposed project evaluated in this report is considered a Type 1 project because it involves the construction of a highway on a new location.

National Environmental Policy Act

NEPA is a federal law that establishes environmental policy for the nation, provides an interdisciplinary framework for federal agencies to prevent environmental damage and contains "action-forcing" procedures to ensure that federal agency decision-makers take environmental factors into account. The FHWA regulations discussed below constitute the federal noise standard. Projects complying with this standard are also in compliance with the requirements stemming from NEPA.

Federal Highway Administration Regulations

Title 23, Part 772 of the Code of Federal Regulations (23 CFR 772) provides procedures for conducting highway-project noise studies and implementing noise abatement measures to help protect the public health and welfare, supply noise abatement criteria, and establish requirements for information to be given to local officials for use in planning and designing highways. Under this regulation, noise abatement must be considered for a Type 1 project if the project is predicted to result in a traffic noise impact. A traffic noise impact is considered to occur when the project results in a *substantial noise increase* or when the predicted noise levels *approach* or *exceed* the noise abatement criteria (NAC) specified in the regulation. 23 CFR 772 does not

specifically define what constitutes a "substantial increase" or the term "approach" and leaves interpretation of these terms to the individual states.

Noise abatement measures that are reasonable and feasible, and that are likely to be incorporated into the project, will be identified and incorporated into the project's plans and specifications. Table 3-14 summarizes the FHWA noise abatement criteria.

Table 3-14 FHWA Noise Abatement Criteria (NAC)

Activity Category	NAC, Hourly A-weighted Noise Level, dBA Leq(h)	Description of Activities
A	57 Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 Exterior	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 Exterior	Developed lands, properties, or activities not included in Categories A or B above
D	--	Undeveloped lands.
E	52 Interior	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

For any soundwalls to be considered reasonable from a cost perspective, the total estimated cost of the wall must be at or below the total allowance calculated for each wall. The reasonable base cost allowance per benefited residence is $17,000. The cost calculations of the soundwall should include all items appropriate and necessary for the construction of the soundwall, such as traffic control, drainage, and retaining walls.

A minimum of 5 dB of noise reduction must be achieved at impacted receivers for proposed noise abatement to be considered feasible. Other factors may also restrict feasibility, including topography, access requirements for driveways or ramps, presence of local cross streets, other noise sources in the area, and safety considerations.

California Environmental Quality Act

CEQA is the foundation of environmental law and policy in California. CEQA's main objectives are to disclose to decision makers and the public the significant environmental effects of proposed activities and the ways to avoid or reduce those effects by requiring implementation of feasible alternatives or mitigation measures. Under CEQA, a substantial noise increase may result in a significant adverse environmental effect and, if so, must be mitigated or identified as a noise impact for which it is likely that only partial abatement measures (or none) are available. Specific economic, social, environmental, legal and technological conditions may make additional noise attenuation measures infeasible.

California Streets and Highways Code, Section 216

Section 216 of the California Streets and Highways code relates to the noise level produced by the traffic on, or by the construction of, a state freeway measured in the classrooms, libraries, multipurpose rooms and spaces used for a public or private elementary or secondary school. The code states that if the interior noise level produced in any of these locations by freeway traffic, or the construction of a freeway, exceeds 52 dBA Leq, the department shall undertake a noise abatement program to reduce the freeway traffic noise level to 52 dBA Leq or less by measures such as installing acoustical materials, eliminating windows, installing air conditioning and constructing sound baffle structures.

Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects

The Protocol (California Department of Transportation 1998a) specifies the policies, procedures, and practices for use by agencies that sponsor new construction or reconstruction projects. Noise abatement criteria specified in this document are the same as those specified in 23 CFR 772. The document defines a noise increase as substantial when the predicted noise levels with project implementation exceed existing noise levels by 12 dBA Leq(h). The protocol also states that a sound level is considered to approach an NAC level when the sound level is within 1 dB of the NAC identified in 23 CFR 772. For example, a sound level of 66 dBA is considered to approach the NAC of 67 dBA, whereas 65 dBA is not.

3.4.2 FIELD MEASUREMENTS

Ambient noise measurements were conducted to provide an understanding of the existing noise levels at the sensitive receptor locations. These noise levels will be used as a reference noise level to assess the noise impact to the residential area adjacent to the project site. Thirty-one sites were selected for monitoring to represent existing sensitive receptor locations. The measurement sites were selected when one or many residences were either within or close to the project boundaries. Figure 3-12 illustrates the 31 measurement locations and Table 3-16 summarizes the receptors. Ambient noise levels are listed in Table 3-15.

Table 3-15 Noise Level Measurements [1] on October 5th and 6th 1999

Noise Level Location	***Existing Noise (Monitored) Leq dBA***	****A5C1***	****AAC2***	****D1***	****D13***
NR-1	49.1	60.6	60.5	56.8	56.8
NR-2	45.6	*60.6*	*62.6*	57.3	57.3
NR-3	54	55.2	55.2	52.9	55.0
NR-4	45.6	53.4	55.5	*60.5*	*60.5*
NR-5	51.3	57.8	*64.6*	63.1	63.1
NR-6	49.6	50.3	50.7	56.6	56.6
NR-7	38.1	*58.2*	*51.2*	*55.2*	*57.6*
NR-8	48.1	62.0	59.1	N/A	N/A
NR-9	36.4	*53.0*	*52.4*	N/A	N/A
NR-10a	54.4	64.3	63.6	N/A	N/A
NR-10b	52.7	63.8	63.2	N/A	N/A
NR-11	36.6	N/A	N/A	*54.7*	*51.6*
NR-12	46	N/A	N/A	*60.5*	56.2
NR-13	43.3	N/A	N/A	***68.2***	*57.9*
NR-14	43.4	N/A	53.0	***68.6***	*60.1*
NR-15	45.6	*62.4*	*60.5*	N/A	53.1
NR-16a	47.7	***65.9***	*60.7*	N/A	N/A
NR-16b	47.9	***66.2***	*60.1*	N/A	N/A
NR-17[5] (8)	48.1	59.6	*61.3*	58.6	58.1
NR-18[5] (10a)	54.4	***70.4***	***70.0***	***65.7***	***69.5***
NR-19[5] (10a)	54.4	***66.6***	***65.9***	***73.7***	***68.0***
NR-20[5] (14)	43.4	***70.4***	***70.3***	*59.1*	*63.2*
NR-21[5] (15)	45.6	***73.9***	***69.6***	57.0	55.6
NR-22[5] (16b)	47.9	***72.5***	***66.4***	N/A	N/A
NR-23[5] (10b)	52.7	***72.2***	*65.2*	N/A	N/A
NR-24[5] (8)	48.1	*65.0*	*63.0*	N/A	N/A
NR-25[5] (6)	49.6	*63.4*	*62.2*	N/A	N/A
NR-26[5] (14)	43.4	N/A	N/A	N/A	N/A
NR-27[5] (14)	43.4	N/A	N/A	*60.2*	***73.6***
NR-28[5] (14)	43.4	N/A	N/A	*59.7*	***65.9***
NR-29[5] (14)	43.4	***71.0***	***69.6***	***67.9***	***65.8***
NR-30[5] (14)	43.4	***70.7***	***68.7***	***69.1***	***67.8***
NR-31[5] (15)	45.6	***68.6***	***64.6***	N/A	N/A

[1] The L_{eq} represents the equivalent continuous sound level and is the numeric value of a constant level that, over the given period of time, transmits the same amount of acoustic energy as the actual time varying sound level. The L_{min} and L_{max} represent the minimum and maximum noise levels obtained over a period of one second.
*Modeled

The ambient noise was partly due to either remote or sparse traffic on the existing SR 65, Dowd Road, Riosa Road, Wise Road, Nicolaus Road, Moore Road and Lakeside Drive. Other sources of noise were birds, barking dogs, hens, water flow, wind in branches, remote aircraft and minor carpentry work. Noise levels remain below the allowable noise exposure required by Placer County.

The measured L_{eq} shown in Table 3-15 is documented as existing ambient noise level. The modeled noise is the noise contribution of the new Lincoln bypass traffic to each receptor location. The modeled future traffic noise was then compared to the measured existing ambient noise. Noise impacts are addressed in Chapter 4, Environmental Consequences.

Table 3-16 Summary of Receptors

Noise Level Location	Location Description	Type of Development	No. of Residences	Status of Development
NR-1	6355 North Route 65	Residential	1	Existing
NR-2	100m north of Riosa Road	Residential	9	Existing
NR-3	100 feet from Existing Route 65	Residential	1	Existing
NR-4	4710 North Dowd Road	Residential	1	Existing
NR-5	4221 North Dowd Road	Residential	2	Existing
NR-6	700 feet from Existing Route 65	Residential	1	Existing
NR-7	2780 Dowd Road	Residential	1	Existing
NR-8	2000 feet from Existing SR 65, 1000 feet from C1 and C2 Alignments	Residential	4	Existing
NR-9	200m south of Wise Road	Residential	1	Existing
NR-10a	Along Wise Road	Residential	2	Existing
NR-10b	Along Wise Road	Residential	4	Existing
NR-11	Along Airport Road	Residential	6	Existing
NR-12	Along Nicolaus Road	Residential	1	Existing
NR-13	On Rockwell Lane	Residential	28	Existing
NR-14	Along Moore Road	Residential	1	Existing
NR-15	400 feet east of C1 and C2 Alignments	Residential	1	Existing
NR-16a	North end of El Camino Verde Dr.	Residential	17	Existing
NR-16b	1245 Cobblestone Dr	Residential	12	Existing
NR-17	2000 feet from Route 65	Residential	1	Existing
NR-18	Lincoln Crossing	Residential	60	Planned, Programmed, Approved
NR-19	Lincoln Crossing	Residential, Commercial	54	Planned, Programmed, Approved
NR-20	Lincoln Crossing	Residential, School, Park	20	Planned, Programmed, Approved
NR-21	50 feet from Existing SR 65	Residential	54	Existing
NR-22	50 feet from Existing SR 65, south of Nicolaus Rd.	Residential	6	Under Construction
NR-23	50 feet south of Nicolaus Road	Residential	28	Under Construction
NR-24	50 feet from C1 Alignment	Residential	1	Existing

Noise Level Location	Location Description	Type of Development	No. of Residences	Status of Development
NR-25	50 feet from Existing Route 65	Residential	1	Existing
NR-26	NW corner of Route 65/Ferrari Ranch Blvd	Residential	0	Planned, Programmed, Approved
NR-27	100 feet North of D13 Alignment	Residential	1	Existing
NR-28	100 feet North of D13 Alignment	Residential	1	Existing
NR-29	3-D Development	Residential	23	Planned, Program, Approved (Fall 2001)
NR-30	3-D Development	Residential	40	Planned, Program, Approved (Fall 2001)
NR-31	Lincoln West Development	Residential	25	Planned, Programmed, Approved

3.5 WATER QUALITY

The Water Quality Assessment examines the receiving waters associated with each of the alternatives for the project and the potential impacts linked to the construction and maintenance of each alternative. The location of these waters is shown in Figure 3-13. Following is a summary of the Water Quality Assessment, completed in February 1999. The entire document may be reviewed at the Department's District 3 office, 2800 Gateway Oaks Dr., Sacramento, CA.

The City of Lincoln is located between Auburn Ravine and Markham Ravine, both tributaries to the Sacramento River watershed. The receiving waters within the proposed project area include Auburn Ravine, Markham Ravine, Coon Creek, an unnamed tributary to Orchard Creek (all tributaries to the Sacramento River), Ingram Slough (a tributary to Orchard Creek), Yankee Sough (a tributary to the Bear River, which flows into the Sacramento River), and an aqueduct that supplies water for agricultural use. Alternatives AAC2 and A5C1 will cross over Orchard Creek, Ingram Slough, Auburn Ravine and Markham Ravine. Alternatives D1 and D13 also cross an aqueduct operated by the South Sutter Water District. The aqueduct supplies water for agricultural use.

3.5.1 Surface Water Resources

Vernal Pools

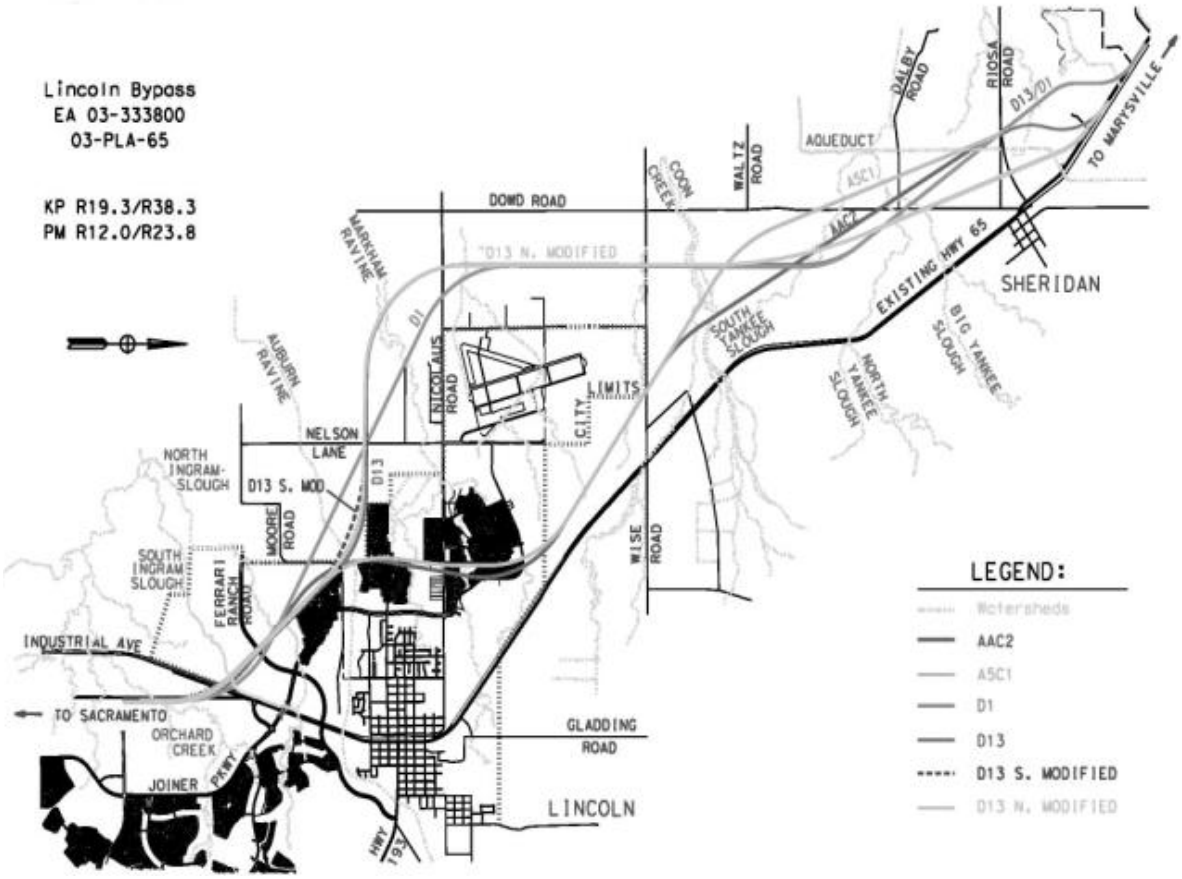
Several areas within the project are relatively flat and water collects in vernal pools during the wet part of the year. The pools dry during the spring and summer months unless agricultural watering is sufficient to keep the pools wet. During very wet periods, the pools may overflow and drain into the surrounding waterways. All alternatives will affect vernal pools as discussed in the Natural Resources section under "Wetlands."

Streams, Creeks and Sloughs

Orchard Creek originates just east of the project area, flows westerly across the project area and into Auburn Ravine. Caperton Canal brings some irrigation water to Orchard Creek keeping the flows during a portion of the year higher than the natural flow of the creek.

Ingram Slough, which is channeled in the project area, is one of the tributaries to Orchard Creek. The proposed Lincoln Crossing development will divide Ingram Slough into two waterways at the west side of SR 65 to a point west of the proposed bypass. A retention pond is also planned along the northern portion of the slough just west of the proposed bypass (EIP Associates 1992a)

Figure 3-13 Watersheds in the Lincoln Project Area



Auburn Ravine originates in the foothills east of the project area and flows westerly across the project area. It drains into the Cross Canal and then into the Sacramento River. It meanders through the project area and has a high density of trees lining it.

Currently, Auburn Ravine receives water from the Wise Powerhouse, the City of Auburn Wastewater Treatment Plant and from storm water runoff. Nevada Irrigation District (NID), Placer County Water Agency and the South Sutter Water District all use Auburn Ravine for transmitting water to agricultural users. During the spring and summer months, April through September, agricultural water is added into the flow of Auburn Ravine. Flows in Auburn Ravine will increase when the City of Auburn expands their wastewater treatment plant capacity from 1.67 million gallons per day (MGD) to 2.5 MGD (Jones & Stokes, 1996).

Stream flow is the lowest in Auburn Ravine between October and December when irrigation is not needed and demands for hydropower are low. This varies from a natural flow that would be lowest during the summer months: June, July, August and September. Flow data has been recorded by the NID where SR 65 crosses Auburn Ravine.

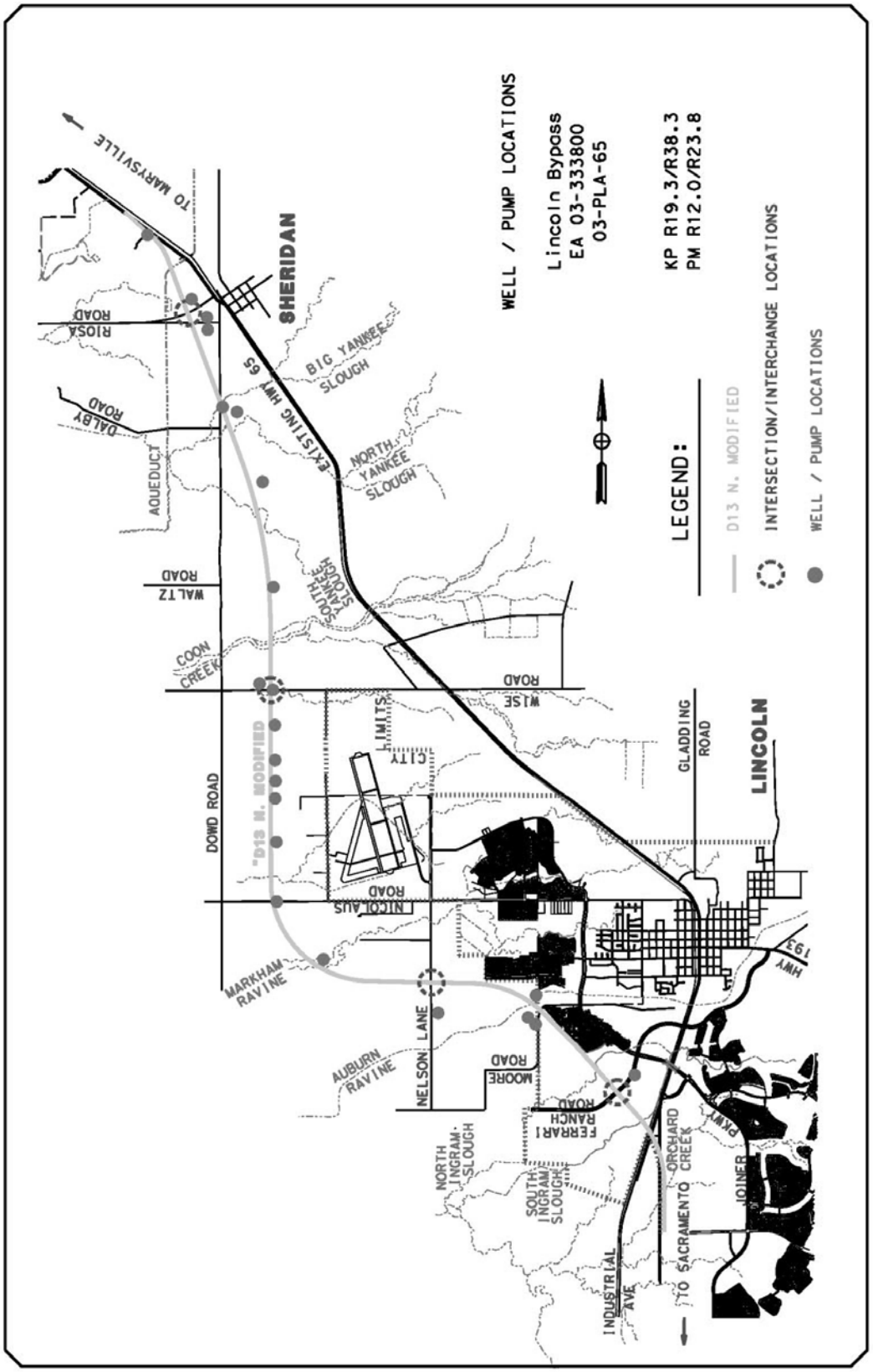
Markham Ravine originates in the rolling hills to the east of the project area. Markham Ravine is a narrow watercourse that meanders through the project area. Some eroding hillsides along the creek suggest greatly increased flows during the winter months. Markham Ravine also carries irrigation water, making flows higher than normal at some times of the year.

Coon Creek originates in the Sierra foothills, flowing westerly across the project area, draining into the Cross Canal and then into the Sacramento River. The creek is heavily wooded in some areas and only sporadic trees line the creek in other areas. Water is supplied to Coon Creek by canals and water is taken from Coon Creek by other canals. It is difficult to know how closely the current flows resemble natural flows.

Yankee Slough roughly parallels the Bear River, originating in the rolling hills east of the project. Yankee Slough flows into the Bear River and then to the Sacramento River. The slough does not have trees along its banks. Some of the water flowing in Yankee Slough comes for the Camp Far West canal, affecting seasonal flows.

Orchard Creek, Auburn Ravine, Markham Ravine, Coon Creek and Yankee Slough all receive water from an irrigation canal and/or provide water for irrigation. Consequently, flows no longer conform to natural flows. The watersheds for each of these creeks are relatively small, Coon Creek being the largest. Due to the seasonal nature of precipitation, flow fluctuates significantly from the high flow periods (October through May) to the dry summer months.

Figure 3-14 Location of Wells in Lincoln Area



3.5.2 Groundwater Hydrology

Available information indicates that groundwater elevation within the City of Lincoln is declining. A study conducted for the Coon Creek/Auburn Ravine watershed show that the average depth to groundwater has increased dramatically from only 7 m (22.9 ft) in 1929, to more that 18 m (59 ft) in 1967, due to over drafting for agricultural irrigation purposes. Present data indicates that groundwater levels have continued to drop at a rate of approximately 0.3 m (one foot) per year since 1967, or about 9 m (29.5 ft) (SACOG 1988b). Some agricultural wells may be affected by the proposed project. A map of wells in the proposed project impact area is shown in Figure 3-14.

3.5.3 Municipal Water Supply

Municipal water for the City of Lincoln is supplied through a long-term contract with the Placer County Water Agency (PCWA). Lincoln purchases treated water wholesale from PCWA and distributes the water through its own system. PCWA receives the water from Lake Spaulding and treats the water at PCWA's Sunset Treatment Plant. The plant has a capacity of 5.0 million gallons per day, and supplies water to both the City of Lincoln and the Sunset Industrial Park south of the city. In addition, the city has developed two wells east of the Lincoln Municipal Airport and expects to develop more wells as the demand increases (SACOG 1998a).

3.5.4 Beneficial Uses of the Water Resources

Beneficial uses are critical to water quality management in California. State law defines beneficial uses of California's waters that may be protected against quality degradation to include (but not limited to) "…domestic, municipal, agricultural and industrial supply, power generation, recreation, aesthetic enjoyment, navigation and preservation and enhancement of fish, wildlife and other aquatic resources or preserves" (Water Code Section 13050(f)). Protection and enhancement of existing and potential beneficial uses are primary goals of water quality planning (Regional Water Quality Control Board Central Valley Region 1998).

The beneficial uses, and abbreviations, listed below are the standard Basin Plan designations (RWQCBCVR 1998).

Municipal and Domestic Supply (MUN) - Includes uses of water for community, military, or individual water supply systems including, but not limited to, drinking water supply.

Agricultural Supply (AGR) - Includes uses of water for farming, horticulture, or ranching including, but not limited to, irrigation, stock watering, or support of vegetation for range grazing.

Industrial Service Supply (IND) - Includes uses of water for industrial activities that do not depend primarily on water quality including, but not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, or oil well re-pressurization.

Industrial Process Supply (PRO) - Uses of water for industrial activities that depends primarily on water quality.

Groundwater Recharge (GWR) - Includes uses of water for natural or artificial recharge of groundwater for purposes of future extraction, maintenance of water quality, or halting of saltwater intrusion into freshwater aquifers.

Freshwater Replenishment (FRSH) - Includes uses of water for natural or artificial maintenance of surface water quantity or quality (e.g., salinity).

Navigation (NAV) - Uses of water for shipping, travel, or other transportation by private, military, or commercial vessels.

Hydropower Generation (POW) - Uses of water for hydropower generation.

Water Contact Recreation (REC-l) - Includes uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and SCUBA diving, surfing, white water activities, fishing, or use of natural hot springs.

Non-Contact Water Recreation (REC-2) - Includes the uses of water for recreational activities involving proximity to water, but not normally involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tide pool and marine life study, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities.

Commercial and Sport Fishing (COMM) - Uses of water for commercial or recreational collection of fish, shellfish, or other organisms including, but not limited to, uses involving organisms intended for human consumption or bait purposes.

Aquaculture (AQUA) - Includes the uses of water for aquaculture or mariculture operations including, but not limited to, propagation, cultivation, maintenance, or harvesting of aquatic plants and animals for human consumption or bait purposes.

Warm Freshwater Habitat (WARM) - Includes uses of water that support warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish or wildlife, including invertebrates.

Cold Freshwater Habitat (COLD) - Includes uses of water that support cold water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish or wildlife, including invertebrates.

Estuarine Habitat (EST) - Uses of water that support estuarine ecosystems including, but not limited to, preservation or enhancement of estuarine habitats, vegetation, fish, shellfish, or wildlife (e.g., estuarine mammals, waterfowl, shorebirds).

Wildlife Habitat (WILD) - Includes uses of water that support terrestrial ecosystems including, but not limited to, preservation and enhancement of terrestrial habitats, vegetation, wildlife (e.g., mammals, birds, reptiles, amphibians, invertebrates), or wildlife water and food sources.

Preservation of Biological Habitats of Special Significance (BIOL) - Uses of water that support designated areas or habitats, such as established refuges, parks, sanctuaries, ecological reserves, or Areas of Special Biological Significance (ASBS), where the preservation or enhancement of natural resources requires special protection.

Rare, Threatened, or Endangered Species (RARE) - Includes uses of water that support habitats necessary, at least in part, for the survival and successful maintenance of plant or animal species established under State or Federal law as rare, threatened or endangered.

Migration of Aquatic Organisms (MIGR) - Uses of water that support habitats necessary, at least in part, for the survival and successful maintenance of plant or animal species established under State or Federal law as rare, threatened or endangered.

Spawning, Reproduction, and/or Early Development (SPWN) – Uses of water that support high quality aquatic habitats suitable for reproduction and early development of fish.

Shellfish Harvesting (SHELL) – Uses of water that support habitats suitable for the collection of filter feeding shellfish (e.g. clam, oysters, and mussels) for human consumption, commercial or sports purposes.

The beneficial uses of the Sacramento and Bear Rivers are listed in Table 3-17.

Table 3-17 Beneficial Uses

Surface Water Bodies	MUN	AGRI	AGRS	POW	REC-1	REC-2	WARM	COLD	MIGR(W)	MIGR(C)	SPWN(W)	SPWN(C)	WILD
Sacramento River Colusa Basin to I Street Bridge	E	E	~	E	E	E	E	E	E	E	E	E	E
Bear River	E	E	E	E	E	E	E	E	P	P	P	P	E

MUN = Municipal
AGR I = Agricultural Irrigation
AGR S = Ag. Stock Watering
POW = Industry Power
REC-1 = Recreation Contact
REC-2 = Other Non-Contact
WARM = Freshwater Habitat Warm
COLD = Freshwater Habitat Cold
MIGR(W) = Migration Warm
MIGR(C) = Migration Cold
SPWN(W) = Spawning Warm
SPWN(C) = Spawning Cold
WILD = Wildlife Habitat
E = Existing Beneficial Uses
P = Potential Beneficial Uses
Source: RWQCBCVR, 1999

3.5.5 Beneficial Uses for Groundwater

Unless otherwise designated by the Regional Water Board, all ground waters in the Region are considered as suitable or potentially suitable, at a minimum, for municipal and domestic water supply (MUN), agricultural supply (AGR), industrial service supply (IND) and industrial process supply (PRO) (RWQCBCVR, 1998).

3.5.6 Water Quality Objectives

The Basin Plan lists water quality objectives for a number of constituents. General water quality objectives for surface waters are presented in Table 3-18. Objectives for inorganic and organic chemicals are listed Table 3-19.

Table 3-18 General Water Quality Objectives for Surface Waters

Constituent	Description
Bacterio-logical	In no case shall coliform concentrations in waters of the Sacramento River Basin or the Bear River exceed the following: In waters designated for contact recreation (REC-1), the median fecal coliform concentration based on a minimum of not less than five samples for any 30 day period shall not exceed 200/100ml, not shall more than ten percent of total samples during any 30 day period exceed 400/1000ml.
Chemical Constituents	Waters designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the limits specified in the California Code of Regulation, Title 22 and listed in the Basin Plan. Waters designated for use as agricultural supply (AGR) shall not contain concentrations of chemical constituents in amounts that adversely affect such beneficial use. Numerical water quality objectives for individual waters are listed in the Basin Plan.

Constituent	Description
Dissolved Oxygen	Dissolved oxygen concentrations shall conform to those limits listed in the Basin Plan. The monthly median of the mean daily dissolved oxygen (D) concentration shall not fall below 85 % of saturation in the main water mass, and 95 percentile concentration shall not fall below 75 % of saturation. For waters not listed and where dissolved oxygen objectives are not prescribed, the dissolved oxygen concentrations shall not be reduced below the following minimum levels at any time: Waters designated COLD 7.0 ml/L Waters designated SPWN 7.0 ml/L Waters designated WARM 5.0 ml/L
Floating Material	Water shall not contain floating material in amounts that cause nuisance or adversely affect beneficial uses.
Oil and Grease	Waters shall not contain oils, waxes, or other materials in concentrations that cause nuisance, result in a visible film or coating on the surface of the water or on objects in the water or otherwise adversely affect beneficial uses.
Pesticides	No individual pesticide or combination of pesticides shall be present in concentrations that adversely affect beneficial uses. Discharges shall not result in pesticide concentrations in bottom sediments or aquatic life that adversely affect beneficial uses. Total identifiable persistent chlorinated hydrocarbon pesticides shall not be present in the water column at concentrations detectable within the accuracy of analytical methods approved by the Environmental Protection Agency or the Executive Officer. Pesticide concentrations shall not exceed those allowable by applicable anti-degradation policies (see State Water Resources Control Board Resolution NO. 68-16 AND 40 C.F.R. § 131.12. Pesticide concentrations shall not exceed the lowest levels technically and economically achievable. Waters designated for use as domestic or municipal supply (MUN) shall not contain concentration of pesticides in excess of the Maximum Contaminant Levels set forth in California Code of Regulations, Title 22, Division 4, Chapter 15.
pH	The pH shall not be depressed below 6.5 nor raised above 8.5
Radioactivity	Radionuclides shall not be present in concentrations that are harmful to human, plant, animal, or aquatic life nor result in the accumulation of radionuclides in the food web to the extent that presents a hazard to human, plant, animal, or aquatic life.
Sediment	The suspended sediment load and suspended sediment discharge rate of surface waters shall not be altered in such a manner as to cause nuisance or adversely affect beneficial uses.
Settleable Materials	Waters shall not contain substances in concentrations that result in the deposition of material that causes nuisance of adversely affects beneficial uses.
Suspended Solids	Waters shall not contain suspended material in concentration that cause nuisance or adversely affect beneficial uses.
Taste and Odor	Water shall not contain taste and odor producing substances in concentration that impart undesirable tastes or odors to domestic or municipal water supplies or to fish flesh or other edible products of aquatic origin, or that cause nuisance or otherwise adversely affect beneficial uses.
Temperature	The natural receiving water temperature of intrastate waters shall not be altered unless it can be demonstrated to the satisfaction of the Regional Water Board that such alteration in temperature does not adversely affect beneficial uses.

Constituent	Description
Toxicity	All waters must be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal or aquatic life. This objective applies regardless of whether the toxicity is caused by a single substance of the interactive effect of multiple substances. Analysis of indicator organisms, species diversity, population density, growth anomalies and biotoxicity tests of appropriate duration or other methods as specified by the Regional Water Board will determine compliance with this objective.
Turbidity	Waters shall be free of changes in turbidity that cause nuisances or adversely affect beneficial uses. Increases in turbidity attributable to controllable water quality factors shall not exceed the following limits: Where natural turbidity is between 0 and 5 Nephelometric Turbidity Units (NTUs), increases shall not exceed 1 NTU. Where natural turbidity is between 5 and 50 NTUs, increases shall not exceed 20%. Where natural turbidity is between 50 and 100 NTUs, increases shall not exceed 10%. Where natural turbidity is greater than 100 NTUs, increases shall not exceed 10%. In determining compliance with the above limits, appropriate averaging periods may be applied that beneficial uses will be fully protected.

Source: Regional Water Quality Control Board, Central Valley Region Basin Plan, 1998

Table 3-19 Water Quality Objectives for Inorganic and Organic Chemicals for the Bear River Hydrologic Unit

Chemical	Maximum contamin-ation Level	Detail
1,1,1-Trichloroethane	0.2 mg/L	NA
1,1,2,2-Tetrachloroethane	0.001 mg/L	NA
1,1,2-Trichloro-1,2,2-Trifloroet	1.2 mg/L	NA
1,1,2-Trichloroethane	0.005 mg/L	NA
1,1-Dichloroethane	0.005 mg/L	NA
1,1-Dechloroethylene	0.006 mg/L	NA
1,2,4-Trichlorobenzene	0.07 mg/L	NA
1,2-Trichlorobenzene	0.6 mg/L	NA
1,2-Dichloroethane	0.0005 mg/L	NA
1,2-Dichloropropane	0.005 mg/L	NA
1,3-Dichloropropene	0.0005 mg/L	NA
1,4-Dichlorobenzene	0.005 mg/L	NA
2,3,7,8-TCDD (Dioxin)	0.0000003 mg/L	NA
2,4,5-TP (Silvex)	0.05 mg/L	NA
2,4-D	0.07 mg/L	NA
Alachlor	0.002 mg/L	NA
Aluminum	1 mg/L	NA
Antimony	0.006 mg/L	NA
Arsenic	0.005mg/L	NA
Asbestos	7 MFL	NA
Atrizine	0.003 mg/L	NA
Barium	1 mg/L	NA

Chemical	Maximum contamin-ation Level	Detail
Bentazon	0.018 mg/L	NA
Benzene	0.001 mg/L	NA
Benzo(a)pyrene	0.0002 mg/L	NA
Beryllium	0.004 mg/L	NA
Cadmium	0.0005 mg/L	NA
Carbofuran	0.018 mg/L	NA
Carbon Tetrachloride		NA
Chlordane	0.0001 mg/L	NA
Chromium	0.05 mg/L	NA
Cis-1,2-Dichloroethylene	0.006 mg/L	NA
Copper	1.3 mg/L	NA
Cyanide 0.2	0.2 mg/L	NA
Dalapon	0.2 mg/L	NA
Diphthalate (2-ethylhexyl)	0.004 mg/L	NA
Dibromochloropropane	0.0002 mg/L	NA
Dichloromethane	0.005 mg/L	NA
Dinoseb	0.007 mg/L	NA
Diquat	0.02 mg/L	NA
Endothall	0.1 mg/L	NA
Endrin	0.002 mg/L	NA
Ethylbenzene	0.7 mg/L	NA
Ethylene Dibromide	0.00005mg/L	NA

Chemical	Maximum contamination Level	Detail
Fluoride	2.4 mg/L	<53.7F
Fluoride	2.2 mg/L	53.8F-58.3F
Fluoride	2 mg/L	58.4F-63.8F
Fluoride	1.8 mg/L	63-9F-70.6F
Fluoride	1.6 mg/L	70.7F-79.2F
Fluoride	1.4 mg/L	79.3F-90.5F
Glyphosate	0.7 mg/L	NA
Heptachlor	0.00001mg/L	NA
Heptachlor Epoxide	0.00001mg/L	NA
Hexachlorobenzene	0.001 mg/L	NA
Hexachlorocyclopentadiene	0.05 mg/L	NA
Lead	0.015 mg/L	NA
Lindane	0.0002 mg/L	NA
Mercury	0.002 mg/L	NA
Methoxychlor	0.04 mg/L	NA
Molinate	0.02 mg/L	NA
Monochlorobenzene	0.07 mg/L	NA
Nickel	0.1 mg/L	NA
Nitrate (as NO3)	45 mg/L	NA
Nitrate + Nitrate (sum as nitogen)	10 mg/L	NA
Nitrate (as nitrogen)	1 mg/L	NA
Oxamyl	0.2 mg/L	NA
PCBs	0.0005 mg/L	NA
Pentachlorophenol	0.001 mg/L	NA
Picloram	0.5 mg/L	NA
Selenium	0.05 mg/L	NA
Simazine	0.004 mg/L	NA
Styrene	0.1 mg/L	NA
Tetrachloroethylene	0.005 mg/L	NA
Thallium	0.002 mg/L	NA
Thiobencarb	0.07 mg/L	NA
Toluene	0.15 mg/L	NA
Toxaphene	0.003 mg/L	NA
trans-1,2-Dichloroethylene	0.01 mg/L	NA
Trichloroethylene	0.005mg/L	NA
Trichlorofluoro-methane	0.15 mg/L	NA
Vinyl Chloride	0.0005 mg/L	NA
Xylenes	1.75 mg/L	NA

Source: RWQCBCVR 1998
NA = Not Applicable

3.5.7 Existing Water Quality

The City of Auburn's Wastewater Treatment Plant (WWTP) had been operating under a cease-and-desist order since 1994 for discharging effluent that exceeded the WWTP's permit limitations into the Auburn Ravine. The WWTP was issued a new wastewater discharge permit on April 11, 2005. However, the WWTP is not able to meet the new discharge limits set by the RWQCB for discharging to the Auburn Ravine, and operates under a new cease and desist order. Recent water quality studies to assess the effects of the City of Auburn's WWTP discharge found that the effluent has little impact on ambient water quality in Auburn Ravine. Significant dilution and high capacity to assimilate organic matter are results of the high dissolved oxygen concentration maintained in the stream as it flows to Lincoln.

Water quality studies have been conducted on Auburn Ravine in conjunction with the City of Lincoln Wastewater Treatment and Reclamation Facility Draft Environmental Impact Report. Data collected between December 1998 through February 1999 at the Joiner Parkway Bridge in Lincoln showed that storm water runoff and higher flows

influence water quality. Although there was low biological oxygen demand, neutral pH, low hardness and dissolved oxygen (DO) typically above 7.0 mg/L, there was moderate turbidity that varied with stream flow conditions and rainfall. Data collected during the summer and fall 1995, shown in Table 3-20, reflect the influences of urban runoff, agricultural activities, septic tanks and other factors (Jones & Stokes, 1999).

Table 3-20 Concentrations of Conventional Constituents of Concern in Auburn Ravine

	BOD (mg/L)	**NO^3** (mg/L N)	**NH^3** (mg/L N)	**TKN** (mg/L N)	**TP** (mg/L P)	**TURB** (NTU)	**FC** (#/100 ml)	**pH**	**Temp** (ºC)	**DO** (mg/L)
Samples Collected from Auburn Ravine 7/24/95										
Above town	<3	0.13	<0.05	<0.5	<0.5	3.9	50	6.8-6.9	14.7-16.9	10.0-10.4
mid reach	<3	0.12	<0.05	<0.5	0.6	6.6	--	6.7-7.6	15.9-17.3	9.6-9.8
Lower reach	<3	<0.11	0.052	0.6	0.9	4.6	500	6.0-7.4	20.4-22.7	8.0-8.3
Samples Collected from Auburn Ravine 9/14/95										
Above town	<3	0.71	0.064	<0.5	0.04	1.8	50	--	--	--
mid reach	<3	0.93	0.053	<0.5	0.05	2.0	--	--	--	--
Lower reach	<3	0.58	0.064	<0.5	0.05	3.4	500	--	--	--
Samples Collected from Auburn Ravine 10/20/95										
Above town	<3	--	<0.05	<0.5	0.05	0.72	30	6.9-7.2	15.5-15.7	7.2-9.3
mid reach	<3	--	<0.05	<0.5	0.08	1.8	--	6.8-7.4	15.5-17.0	7.6-8.5
Lower reach	<3	--	<0.05	<0.5	0.09	4.7	90	7.2	17.0-17.0	6.2-7.0

BOD = biological oxygen demand
NO^3 = nitrates
TKN = total Kjehldahl nitrogen
DO = dissolved oxygen
FC = fecal coliform
TP = total Phosphorous
NH^3 = ammonia (un-ionized)
Temp. = Temperature
Turb = Turbidity

The city has recently undertaken an intensive sampling effort to gain a better understanding of the variability of the trace metal priority pollutants in Auburn Ravine (at Joiner Parkway Bridge). Several trace metals (i.e., cadmium, copper, lead, nickel, and zinc) were present during the various sampling periods at levels that exceed proposed water quality criteria. The May 1998 and January-February 1999 samplings were conducted immediately following storm events and the levels of pollutants in these samples may be characteristic of transient storm-related inputs of urban pollutants. More recent data using clean techniques show much lower values for dissolved metals, with none of the values exceeding proposed regulatory criteria (Jones & Stokes, 1999).

Sources of pollutants in the Auburn Ravine watershed include both point sources of pollutants (e.g., the City of Auburn's WWTP) and non-point sources of pollutants (e.g., agricultural and urban runoff). The City of Auburn's wastewater discharge constitutes the largest single known source of wastewater effluent entering directly into Auburn Ravine. The percentage contribution from Auburn's WWTP is lower in the dry season as a result of larger releases of water into the channel by PG&E and PCWA. In the dry season, Auburn's effluent has typically accounted for 6.8% of the flow in October and 1.8% in July (Jones & Stokes, 1999).

In the Sacramento Valley, there is a natural weather pattern of a long dry period from May to October. During this seasonal dry period, pollutants contributed by vehicle exhaust, vehicle and tire wear, crankcase drippings, spills and atmospheric fallout accumulate within a watershed. Precipitation during the early portion of the wet season (November to April) displaces these pollutants into the storm water runoff, resulting in high pollution concentrations in the initial wet weather runoff. A study conducted by the RWQCB in Sacramento, California (Larry Walker & Associates, 1990) revealed that during the rainy season, the first flush of heavy metals and hydrocarbons occurred during the first five inches of seasonal rainfall. Trace metal and hydrocarbon concentrations then remained largely static in subsequent storm events. Some sources of dry weather runoff constituent pollutants included commercial and domestic irrigation, general wash off, groundwater infiltration and illegal discharges (EIP Associates 1992a).

The State of California, in accordance with Section 303(d) of the Clean Water Act, has submitted to the State Water Resources Control Board a list of impaired waters. The 2002 list mentions the Lower Bear as having Diazinon as a pollutant, likely from agricultural sources with a medium Total Maximum Daily Loads (TMDL) priority. The Sacramento River from Red Bluff to Knights Landing has unknown toxicity from an unknown source with a low TMDL priority. There was no specific information on the Upper Coon or Upper Auburn watersheds.

For the section of the Sacramento watershed where the project is located, parameters of concern include unknown toxicity, mercury and Diazinon. The pollution sources were listed as agriculture and resource extraction.

3.6 FLOODPLAIN

Caltrans conducted a Floodplain Hydraulic Study (FHS) on the project area. The FHS was updated in December 1999. This document is available for review at 2389 Gateway Oaks Dr., Sacramento, CA 95833. The FHS concluded that the Lincoln Bypass floodplain encroachments are unavoidable due to the preferred alignment's north south

orientation crossing the east/west drainage patterns of the area. The existing SR65 passes through areas subject to 100-year floods and encroaches upon the 100-year floodplain at Auburn Ravine, Markham Ravine and Coon Creek. The Preferred Alignment crosses areas subject to 100-year floods at Auburn Ravine, Markham Ravine, Coon Creek and North Yankee Slough. Waterway crossings that are not within the floodplain boundaries include Ingram Slough, Airport Creek, South Yankee Slough, Big Yankee Slough and the South Sutter Water District Aqueduct. Ingram Slough has recently been divided into two reaches; these are North Ingram and South Ingram Slough. FEMA has mapped 100-year floodplains along most of the creeks in the project area. At the time of the study, the D13 North Modified alternative was not one of the alignments studied in the FHS, however, the D13 Alignment is very similar to D13 North Modified at the waterway crossings; therefore the information is applicable.

Caltrans conducted a Final Hydraulics Report (FHR) in September 2004. The FHR assists Caltrans in sizing the structures, determining scour elevations and identifying hydraulic problems that could impact the design and construction of the proposed bridges. The floodplains are shown in Figure 4-6 in Chapter 4. The flood plain widths and base-flood elevations at each of the proposed waterway crossings are shown in Table 3-21.

Table 3-21Widths and Base Flood Elevations

WATERWAY	FLOODPLAIN WIDTH (FHS)	WATER SURFACE ELEVATION (FHR) 100-Year event
South Ingram Slough	N/A	40.1m
North Ingram Slough	N/A	41.1m
Auburn Ravine	305m (1000 ft)	39.9m
Markham Ravine	92m (300 ft)	32.34m
Airport Creek	N/A	31.7m
Coon Creek	1128m (3700 ft)	32.3m
South Yankee Slough	N/A	29.3m
North Yankee Slough	213m (700 ft)	28.2m
Yankee Slough (Big)	N/A	28.2m
SSWD Aqueduct	Not in floodplain	N/A

Source: Hydraulic Study Update *Similar for D13 N. Mod

During times of high flows, water backs up along man made barriers such as the existing railroad and highway bridges on Auburn Ravine. The low area along the railroad tracks and SR 65 fills with water during wet winters. FEMA has mapped 100-year floodplains along all of the creeks in the project area (See Figure 4-6 in Chapter 4, for a map of floodplain encroachments.). The levee on the north side of Auburn Ravine, on the Scheiber Ranch, attests to the potential for flooding in the low sloping flat areas. In addition, the FEMA maps show SR 65 as a major impediment to the flow of water for

a 100-year flood event for Markham Ravine. Flooding may occur downstream in Sutter County during wet events (SACOG 1988b, FEMA maps).

Natural and beneficial floodplain values exist at Auburn Ravine and Coon Creek due to their perennial flow. These values are relatively diverse. The primary values that exist in the vicinity of the proposed project alternate alignments are as follows:

- Natural habitat for fish, wildlife, and native riparian vegetation
- Open space
- Recreation
- Ground water recharge
- Scenic beauty

These values also exist at Markham Ravine and Yankee Slough, but to a lesser degree due to the absence of significant surface flow during the summer and fall of most years.

3.7 NATURAL RESOURCES

A Natural Environment Study Report was completed for this project in August 2000. Copies of this report are available for review at the Department of Transportation, District 3 Sacramento office, 2389 Gateway Oaks Dr., Sacramento, CA.

3.7.1 Introduction

The Lincoln Bypass Study Area has been substantially altered during a long history of agricultural and industrial land use. Figure 3-15 outlines the Study Area. In 1998, about 9 % of the Study Area had been developed and about 43 % converted to some form of agricultural production (row crops, rice, orchards, etc.) Much of the drainage through the area have been channelized or otherwise altered. Levees have been constructed to contain floodwaters or to retain water for rice farming. Many drainages appear to be conveying supplemental irrigation water. Cattle grazing have also taken a toll on the natural environment in the Study Area.

More recently, residential development has accelerated in the project area, especially in the vicinity of Joiner Parkway. New housing is also under construction south of Nicolaus Road at the intersection of Lakeside Drive and north of Nicolaus Road to the east of Nelson Lane. Many areas now being developed as residential subdivisions were likely in some form of agricultural use previously.

3.7.2 Agency Coordination

This section summarizes the responsibilities of key agencies involved in the review of the Natural Environment Study Report (NESR) and related project documents for this project. Coordination with the agencies is also discussed. Copies of correspondence with the agencies are included in the Comments and Coordination Chapter, Chapter 7.

Environmental Protection Agency (EPA)

EPA has primary responsibility for administration of the Clean Water Act and oversight authority on 404 permitting issues. EPA's 404(b)(1) guidelines are the substantive criteria used by the Corps in evaluating discharges of dredged or fill material into waters of the United States. EPA is also a signatory agency to the 1993 NEPA/404 Integration Memorandum of Understanding (MOU).

EPA has been involved in the development of the draft Alternatives Analysis for the SR 65 Lincoln Bypass, and has concurred with the proposed project purpose and range of alternatives. The Alternatives Analysis identified the "Least Environmentally Damaging Practicable Alternative" (LEDPA). Written agreement that the preferred alternative is the LEDPA is required from USACE and EPA. The LEDPA concurrence was obtained from EPA on July 9, 2003.

EPA has reviewed the Draft Conceptual Mitigation and Monitoring Plan that was submitted in December 2004 and provided preliminary concurrence on December 12, 2004. The letter is included in Appendix E.

U.S. Army Corps of Engineers (USACE)

Under Section 404 of the Clean Water Act, the USACE regulates the discharge of dredged or fill material into waters of the U.S. A Section 404 permit from the USACE will be required for the project to authorize the discharge of dredged or fill material into vernal pools and other wetlands and regulated waters associated with roadway construction. The USACE is also a signatory agency to the NEPA/404 Integration MOU.

A wetland verification was completed for the project impacts, however, that verification expired in 1991. Caltrans met with the USACE and requested that the expired verification be adequate for use in comparing impacts until a preferred alternative is chosen. At that time, a new wetland delineation and verification would be performed. The USACE agreed to this approach. (Meeting with USACE on March 11, 1999). A new Wetland Delineation was submitted to the USACE in February 2004 and is awaiting final approval.

USACE concurred with the LEDPA on August 8, 2003 during the NEPA/404 process and has given concurrence on the Draft Habitat Mitigation and Monitoring Plan (HMMP) on December 27, 2004. (See Appendix E for copy of concurrences) Caltrans

submitted a revised Wetland Delineation to USACE in March 2004 for re-verification. The 404 permit was also submitted to USACE in March 2004 for review and comment. Caltrans will need to obtain concurrence on the final HMMP as well as a re-verification of the Wetland Delineation before USACE will issue a permit to Caltrans.

Regional Water Quality Control Board (RWQCB)

A Section 401 Water Quality Certification or Waiver from the RWQCB is required in conjunction with the Section 404 permitting process. A 401 certification or waiver will be required before the 404 permit is issued. Application to the RWQCB is generally made after the environmental document is complete.

U.S. Fish and Wildlife Service (FWS)

Under the Fish and Wildlife Coordination Act of 1958, Federal agencies are required to coordinate during project planning stages with FWS and with the State agency responsible for fish and wildlife resources on activities that modify any body of water. Under Section 7 of the Federal Endangered Species Act (FESA), Federal agencies are required to consult with FWS on any action that "may affect" a Federally listed threatened or endangered species or designated critical habitat. FWS is also a signatory agency to the NEPA/404 Integration MOU and has concurred with the proposed project purpose and range of alternatives evaluated for the project.

In February 2004, Caltrans began discussing the project and the Section 7 consultation with FWS. During the next several months Caltrans, FHWA and FWS worked towards satisfying the requirements of the Section 7 consultation process. FWS issued a Biological Opinion (BO) on February 2, 2005 (Appendix J). The BO outlines requirements to avoid jeopardizing the continued existence of those species that are impacted by the project.

California Department of Fish and Game (CDFG)

CDFG, through provisions of Sections 1602 of State of California Administrative Code, is empowered to issue agreements for any alteration of a river, stream or lake where fish or wildlife resources may adversely be affected. Streams (and rivers) are defined by the presence of a channel bed and banks, and at least an intermittent flow of water. CDFG regulates wetland areas only to the extent that those wetlands are part of a river, stream or lake as defined by CDFG.

Coordination with CDFG will be necessary under the Fish and Wildlife Coordination Act, as described above, and under the California Endangered Species Act for potential impacts to State listed species. In addition, a Section 1602 Streambed Alteration Agreement will be required from CDFG to authorize work in streams and other water bodies. CDFG will also be involved in the review of project environmental

documents and in the 404 permitting process as a reviewing agency on the USACE Public Notice.

National Oceanic and Atmospheric Administration (NOAA)

Under Section 7 of the Federal Endangered Species Act, Federal agencies are required to consult with NOAA Fisheries on any action that "may affect" a Federally listed threatened or endangered species or designated critical habitat for which NOAA has responsibility. For the Lincoln Bypass project, NOAA has responsibility for reviewing project effects to anadromous fish.

A "may affect, not likely to adversely effect" determination for the threatened Central Valley steelhead under Section 7 of the Endangered Species Act was made by Caltrans. In addition, Caltrans determined that the project would "not adversely affect" and Essential Fish Habitat pursuant to the provisions of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) These determinations were submitted to NOAA Fisheries on May 10, 2004 and Caltrans received concurrence on May 19, 2004.

3.7.3 Fish and Wildlife

The plant communities in the Study Area provide habitat for a variety of fish and wildlife resources. The following sections describe the wildlife habitats and species expected to occur in these habitats. A complete list of fish and wildlife species observed in the project area can be found in Appendix F.

Aquatic Habitat

Aquatic habitats in the Study Area include open water associated with creeks, reservoirs and stock ponds, flooded rice fields, backwater sloughs, vernal pools/marshes and permanent/seasonal marsh and irrigation canals. The best-developed aquatic habitat in the Study Area is associated with the large marsh complexes at the west end of Markham Ravine and Bull Marsh, and along the primary drainages (Auburn Ravine, Markham Ravine, Coon Creek, Yankee Slough). The hydrology of most of the aquatic habitats in the Study Area is influenced to some degree by agricultural diversions, irrigation pumping, return flows, and wastewater discharges.

Vertebrate species observed, or expected to occur, in aquatic habitats in the Study Area include beaver, river otter, muskrat, northern pond turtle, common garter snake, Pacific tree frog and bullfrog. Aquatic habitats in the Study Area also support a resident warm water fishery including both introduced and native species. Based on sampling conducted by Beak in 1990, Auburn Ravine and Coon Creek are dominated by native fish species including Sacramento squawfish and Sacramento sucker. Green sunfish, carp and Pacific lamprey were also recorded. Markham Ravine, Ingram Slough and Yankee

Slough support a primarily introduced fishery including mosquito fish, green sunfish, carp and bigscale logperch.

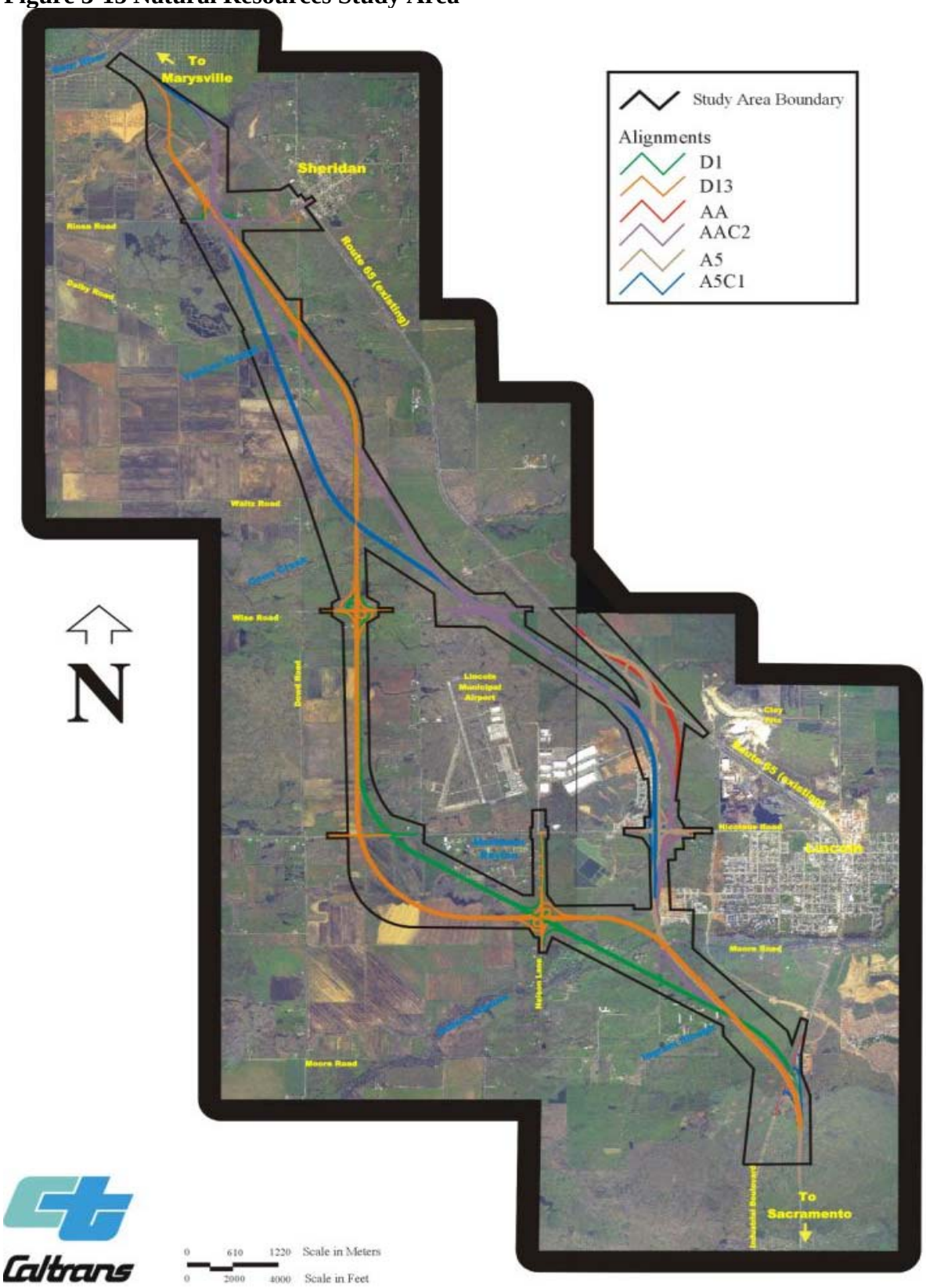
Freshwater marsh is important for many wildlife species, particularly waterfowl and shorebirds. Freshwater marsh and flooded rice fields in and near the Study Area provide habitat for thousands of migrating waterfowl during the winter. Biologists observed between 15,000 and 20,000 birds, primarily ducks, in these areas during the early March 2000 surveys. Marsh areas are also important in nutrient absorption functions that improve water quality.

Small numbers of chinook salmon were observed in Auburn Ravine, Coon Creek and Ingram Slough. Although believed to be stocked fish, it is possible that fall run chinook salmon and Central Valley steelhead migrate through the Study Area. The Study Area does not provide suitable spawning habitat (gravel beds) for these species.

Terrestrial Habitat

Terrestrial habitats in the Study Area include buildings and other structures, agricultural fields, rice fields, orchards, grasslands, oak woodlands and mixed riparian forest. Structures, buildings and landscaped areas provide low-quality wildlife habitat, primarily exploited by those species adapted to human disturbances. Barns and other outbuildings may provide habitat for bats (big brown bat, Mexican free-tailed bat) and barn owls, while a variety of structures provide nesting sites for swallows.

Figure 3-15 Natural Resources Study Area



Agricultural land provides habitat for small mammals and birds, including many of the species listed above. Once harvested, agricultural fields provide foraging opportunities for raptors, such as northern harrier, white-tailed kite and Swainson's hawk. Rice fields, which are extensive both within and west of the project area, pond large areas of water and provide good quality waterfowl and wading bird habitat. Orchards may provide cover and foraging habitat for many bird species also commonly found in woodlands and other habitats in the Study Area, however, mowing, plowing, spraying, and harvesting are activities which will deter normal cover and foraging by bird species.

Wildlife use of non-native grasslands is similar to agricultural lands, providing habitat for a wide variety of small mammals, songbirds, raptors and reptiles. Mixed oak woodland provides high-value wildlife habitat for a variety of bird species and some mammals.

Mixed riparian forest, especially where well developed, is one of the most important habitats for wildlife in the project area. The structural complexity of the habitat provides a variety of foraging, resting and nesting opportunities for many species, including a number of special status species. Many of the species found in oak woodlands also occur in the riparian forest.

The riparian communities along Auburn Ravine and Coon Creek provide relatively unobstructed wildlife corridors through the Study Area. These corridors are likely used by a number of wildlife species for crossing through the developed areas around Lincoln. Existing SR 65, the UPTC tracks and a number of secondary roads and farm roads cross these corridors. Existing SR 65 is immediately adjacent to the UPTC tracks through most of the Study Area. The main drainage: Auburn Ravine, Markham Ravine and Coon Creek, run under the highway and railroad via culverts.

3.7.4 Plants

Table 3-22 provides a breakdown of the plant communities and other land uses occurring in the overall Study Area as of 1998. The percentage of each community relative to the total acreage within the Study Area is also given. A list of all plant species observed in the Study Area is included in AppendixF. Figure 3-16 provides an aerial overview of the plant communities in the Study Area.

Table 3-22 Plant Communities Occurring in the Study Area

Comm-unity	Area in Hectares *(acres)*	% of Study Area	Description
Developed Disturbed	175.0 ha *432 ac*	8.7 %	Included in this category are developed areas such as roadways, buildings and other structures, adjacent lots as well as undeveloped areas that have been severely disturbed by grading or other earth-disturbing activity. Vegetation is typically limited to ruderal species.
Agricultural Lands	855.0 ha *2,111 ac*	42.7 %	Agricultural land, a dominant community type in the Study Area, includes all row crops, rice fields and orchards. Also included in this category are irrigation canals, ditches, small reservoirs, ponds, and similar areas directly associated with production of rice or other crops. Fallow fields are included in this community provided they are obviously part of an ongoing agricultural operation. Agricultural land occurs throughout the project area with the largest contiguous expanses located west of the Lincoln Airport and north of Wise Road.
Nonnative Grassland	257.3 ha *635 ac*	12.8 %	Nonnative grassland is common in the Study Area. Vegetation in nonnative grassland is dominated by annual grasses and forbs including wild oats, soft chess, ripgut brome, medusa grass, filaree and yellow star thistle. Included in this community type are fallow agricultural fields that have been fallow for so long as to be indistinguishable from nonnative grassland. Annual grassland that contains vernal pools and vernal pool complexes are not included in this category.
Mixed Oak Woodland	49.5 ha *122 ac*	2.5 %	Valley oak and blue oak are the dominant trees, with interior live oak also common. Mixed oak woodland in the project area is generally open and contains an understory of nonnative grassland. These woodlands are often found on high terraces near drainage features, but also occur independent of any significant water source. The largest contiguous oak woodland in the Study Area occurs just west of Joiner Parkway, both north and south of Nicolaus Road. Oak woodland also occurs further west along Nicolaus Road and south of Auburn Ravine near Moore Road.
Mixed Riparian Forest	22.6 ha *60 ac*	1.1 %	The major drainage in the project area (Auburn Ravine and Coon Creek) support a mixed riparian forest typically dominated by valley oak but also including several other tree species, often as codominants. Dominant overstory species include valley oak, California black walnut and Goodding's willow. Other tree species include English walnut, Fremont cottonwood, black cottonwood, white alder, interior live oak, sandbar, arroyo and red willow. Understory species in the mixed riparian forest include Himalayan blackberry, mugwort, creeping wildrye, California wild grape, Baltic rush, buttonwillow, California rose and others. The vegetative complexity of the riparian community depends on the structural complexity of the floodplain, which often varies along the drainages. Where stream banks are deeply incised (typical in many reaches); oaks, walnuts and other trees typically occur in a narrow band along upper banks with nominal understory; the streambed supports little vegetation in these areas. In reaches with well-developed terraces, sandbar and other willows typically occupy the lower terraces with a variety of riparian species on the middle terraces and oaks along the upper banks. These areas generally support a well-developed understory. Riparian corridors in the project area are heavily used by cattle, and the plant community reflects this use. In the more intensively grazed areas, the understory is significantly reduced and few seedling trees occur. Deeply incised banks may also be a result of cattle grazing. None of the riparian corridors are free of impacts; Auburn Ravine appears to be the most highly degraded.

Comm-unity	Area in Hectares *(acres)*	% of Study Area	Description
Valley Freshwater Marsh	56.0 ha *138 ac*	2.8 %	Perennial or nearly perennial slow moving or standing water is the common element of all freshwater marsh habitat. In deeper water areas, this community is dominated by cattail and bulrush, often associated with floating mats of water primrose. In shallower water, and on saturated banks, several species of rush, spikerush and sedge are common along with nutsedge, smartweed, dallis grass and Bermuda grass. Thickets of willow occur occasionally within marsh areas and are considered part of the marsh habitat. Valley freshwater marsh intergrades with open water in deeper waterbodies and with vernal marsh in shallower water areas. Valley freshwater marsh habitat in the project area occurs naturally in slow-moving creeks and sloughs (e.g., Yankee Slough), ponds, irrigation and roadside ditches and backwater areas of the larger drainages. The most extensive areas of valley freshwater marsh occur in Markham Ravine south of Nicolaus Road and at Bull Marsh in the northwest portion of the project area. Due to the long history of grazing and water diversions in the project area, much of the valley freshwater marsh habitat is degraded and thoroughly invaded by nonnative plant species. Portions of the Study Area support vegetation characteristic of valley freshwater marsh but are truly agricultural lands or disturbed areas that support this vegetation due to artificial water sources. Areas fitting this description were mapped as agricultural land or disturbed areas since they are not true valley freshwater marsh communities.
Great Valley Willow Scrub	1.1 ha *2.8 ac*	0.06 %	Great Valley willow scrub only occurs in a few locations within the project area. Vegetation in this community generally consists of thickets of willow and Fremont cottonwood with little to moderate understory. Understory vegetation can include annual grasses and forbs, as well as shrub cover such as California rose and California blackberry. This community is always associated with a water source and often occurs adjacent to valley freshwater marsh.
Grassland/ Northern Hardpan Vernal Pool Complex	561.4 ha *1,386 ac*	28.0 %	Vernal pools are seasonal wetlands that pond water for short periods during the winter and early spring due to an impermeable, subsurface layer that retards percolation. Vernal pools generally occur in nonnative grassland as part of a complex that includes the pools and contributing watershed interconnected through a series of vernal swales. They support plant and wildlife species specially adapted to the seasonal fluctuations such as the Federally threatened vernal pool fairy shrimp (*Branchinecta lynchi*) and Federally endangered vernal pool tadpole shrimp (*Lepidurus packardi*). Two types of vernal pools occur in the project area, northern hardpan vernal pools and volcanic mudflow vernal pools. The impermeable layer in northern hardpan vernal pools consists of an iron-silicate cemented hardpan. This type of vernal pool is by far the most common in the project area. Northern hardpan pools are generally associated with iron oxidized soils such as San Joaquin series. Dominant vegetation in northern hardpan vernal pools includes annual hairgrass, coyote thistle, downingia and popcorn flower. The largest concentrations of northern hardpan vernal pools in the project area are located in the extreme southern end between SR 65 and Industrial Boulevard and in the eastern portion of the project area between Nicolaus Road and Wise Road.
Grassland/ Northern Volcanic Mudflow Vernal Pool Complex	4.7 ha *11.7 ac*	0.2 %	Northern volcanic mudflow vernal pools are created by cemented volcanic mudflows forming an impermeable layer. They are much less common than northern hardpan vernal pools and are limited to the Exchequer soil series within the project area. Volcanic mudflow pools are typically smaller and shallower than hardpan pools. As a result, they dry up sooner than hardpan pools and the flowering times are usually several weeks earlier. Typical plant species in northern volcanic mudflow vernal pools include yellow carpet, Fremont goldfields, coyote thistle and wooly marbles. Northern volcanic mudflow vernal pools only occur in two locations within the project area. One complex is located northeast of existing SR 65 between Nicolaus Road and Wise Road. A second, smaller complex is located in the southern portion of the project area, between SR 65 and Industrial Boulevard.

Comm-unity	Area in Hectares *(acres)*	% of Study Area	Description
Vernal Marsh	10.0 ha *24.7 ac*	0.5 %	Vernal marsh is a community type transitional between vernal pools and valley freshwater marsh. Vernal marsh areas are generally deeper, and stay wet longer, than vernal pools. Consequently, many typical vernal pool plant species do not occur in vernal marshes. Vernal marsh areas typically dry out in the summer; thus, many of the typical freshwater marsh species described previously are precluded. Common species found in vernal marshes include rushes and spike rushes in the deeper areas and vernal buttercup and popcorn flower in the shallows.
Open Water	11.4 ha *28.2 ac*	0.6 %	Open waters are unvegetated areas of ponds, channels or other aquatic areas that are not included in another natural community. Open water is typically associated with valley freshwater marsh communities in the deeper water where marsh species cannot grow. The largest expanse of open water is located in Markham Ravine south of Nicolaus Road where the drainage has been partially dammed.
Total	**2,004.0 hectares (4,948.3 acres)**		

Source: Mapping/GIS - LSA Associates, Inc., 1999
Base Photo - Andregg, Inc,. March 1999

Plant Communities

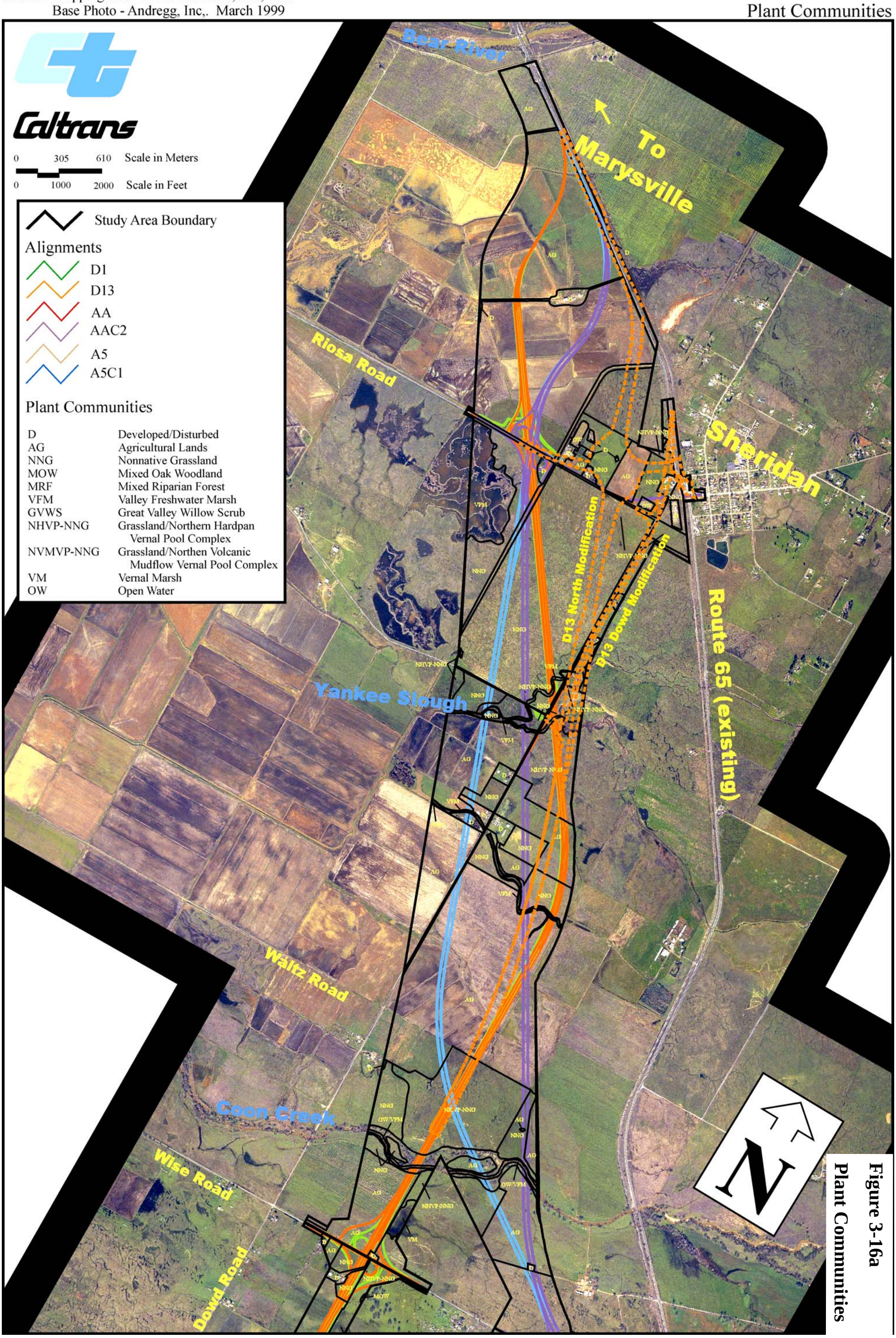
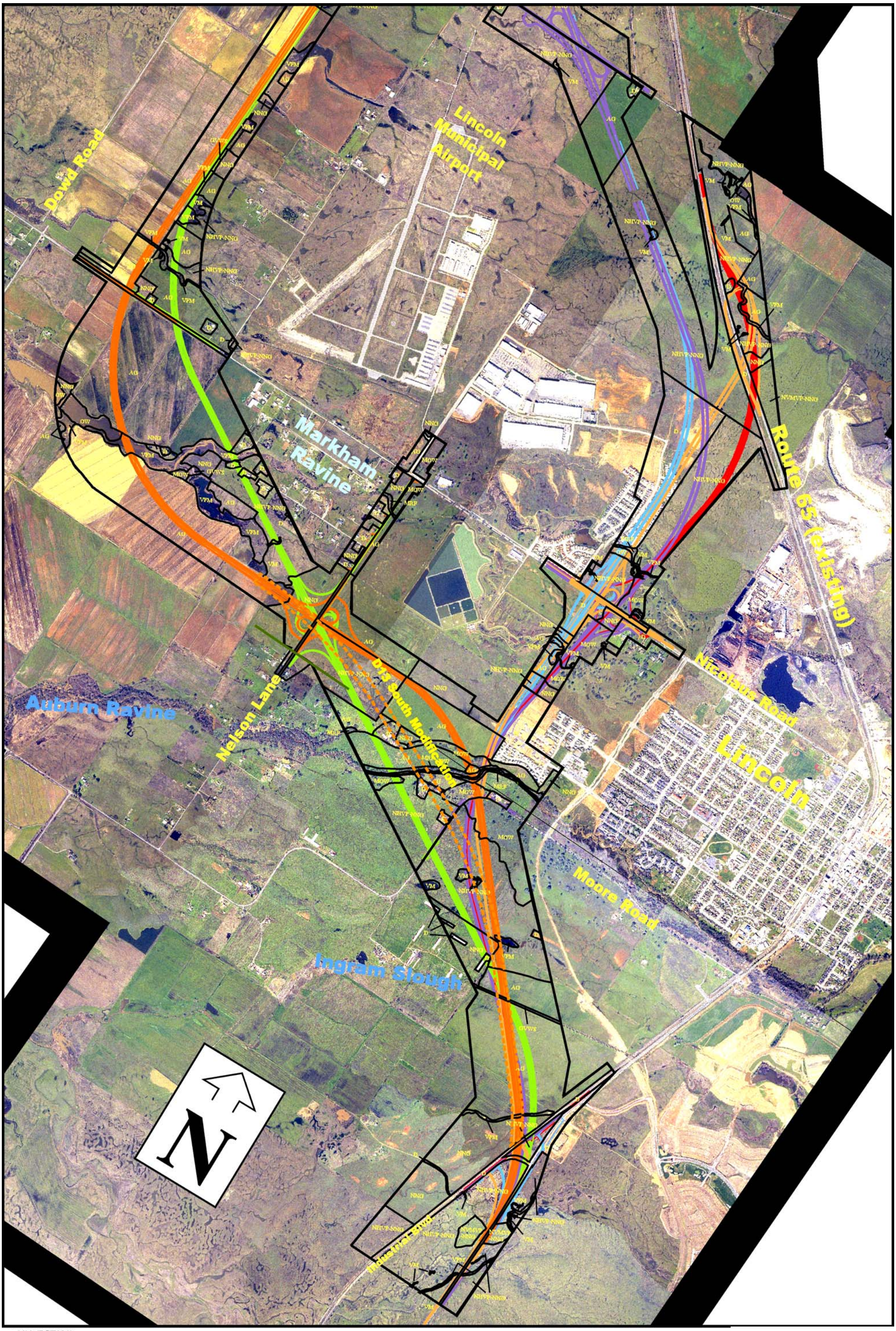


Figure 3-16a
Plant Communities



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ource: Mapping/GIS - LSA Associates, Inc., 1999
Base Photo - Andregg, Inc,. March 1999

Figure 3-16b

Plant Communities

3.7.5 Special Status Species

An annotated list of special status species potentially occurring in the project area was generated based on California Natural Diversity Data Base (CNDDB), California Native Plant Society (CNPS) and FWS lists coordination with agency biologists, review of previous project documents and input from biologists. A 2003 list was obtained for Section 7 purposes dated August 5, 2003. The annotated list is included in Table 3-23.

Table 3-23 Special Status Species Potentially Occurring in the Project Area

Common Name *Latin Name*	Status	Potential in Project Area / Results of Previous Studies	Notes
Mammals			
River otter *Lutra canadensis*	Protected furbearer	River otters have been observed in Markham Ravine, and it is expected that this species periodically occurs in the Study Area.	This uncommon species occurs along streams and lake borders throughout the Central Valley. Although primarily aquatic, otters will travel several kilometers over land to reach another stream or lake.
Spotted bat *Euderma maculatum*	FSC CSC	Suitable roosting habitat does not occur in the project area. This species is not expected to occur.	The spotted bat occupies a wide range of habitats, from arid deserts and grasslands to coniferous forest. Spotted bats need cliff crevices or caves for roosting.
Greater western mastiff bat *Eumops perotis californicus*	FSC CSC	This species was not observed during previous surveys, but could potentially occur in the project area since suitable roost trees are most likely present.	This species occurs in a variety of arid to semi-arid habitats including grassland, chaparral and deciduous woodlands, and is known to utilize trees as roost sites.
Small-footed myotis bat *Myotis ciliolabrum*	FSC	Could potentially occur. Buildings in project area may provide roost sites. Not observed during previous surveys.	This species utilizes buildings as roost sites and could potentially occur in the project area.
Long-eared myotis bat *Myotis evotis*	FSC	Although not observed during previous surveys, the long-eared myotis bat may utilize buildings for nursery or roost sites and may occur in the project area.	This species occurs in a wide variety of habitats to 2,743 m (9,000 ft) elevation, but prefers coniferous woodlands and forests.
Fringed myotis bat *Myotis thysanodes*	FSC	Although not observed during previous surveys, the fringed myotis bat may occur in the project area.	This species occurs in a wide variety of habitats and may utilize buildings as nursery or roost sites.
Long-legged myotis bat *Myotis volans*	FSC	This species was not observed during previous surveys. Suitable roost trees are most likely present in the project area; as a result, this species could potentially occur.	It is most common in woodland and forest habitats above 1,219 m (4,000 ft).
Yuma myotis bat *Myotis yumanensis*	FSC CSC	Could potentially occur. Buildings in project area may provide roost sites. Not observed during previous surveys.	This species occurs in open forests and woodlands, and its distribution is strongly tied to water sources. Although not observed during previous surveys, buildings in the project area may provide roost or nursery sites and this species could potentially occur.

Common Name *Latin Name*	Status	Potential in Project Area / Results of Previous Studies	Notes
Pale Townsend's big-eared bat *Plecotus townsendii pallescens*	FSC CSC	Although not observed during previous surveys, the pale big-eared bat could potentially occur in the project area, as existing buildings could be utilized as roost sites.	This species occurs in a variety of habitats.
Pacific western big-eared bat *Plecotus townsendii townsendii*	FSC CSC	Although not observed during previous surveys, Townsend's western big-eared bat may utilize buildings in the project area as roost sites, and consequently could potentially occur.	This species occurs in a variety of habitats
San Joaquin pocket mouse *Perognathus inornatus*	FSC	Although not observed during previous surveys, the San Joaquin pocket mouse could potentially occur in the project area.	This species occurs in grassland and blue oak savanna.
Birds			
Cooper's hawk *Accipiter cooperii*	CSC	Cooper's hawks have been observed foraging in the project area. No nests were identified during previous surveys; however, nesting habitat does occur on the project site.	This species occurs in woodlands and generally nests in riparian communities.
Sharp-shinned hawk *Accipiter striatus*	CSC	Sharp-shinned hawks have been observed foraging in the project area. Nesting habitat is present in the project area, but no nests have been identified.	This species breeds in coniferous and riparian deciduous forests, and prefers riparian areas.
Swainson's Hawk *Buteo swainsoni*	ST	At least eight Swainson's Hawks were observed in and around the project area during a two-day survey in May 1999. At least three of the eight hawks were observed within the Study Area. The other observations were outside of the project area, but within an approximate 16.1 km (10 mi) radius of the project area.	This species requires fields or grasslands for foraging and breeds in stands with few trees in juniper-sage flats, riparian areas and oak savanna. Swainson's Hawk nesting habitat in, and in the vicinity of, the project area consists of the taller trees in the Coon Creek, Auburn Ravine and Pleasant Grove Creek riparian corridors. The grasslands and fallow agricultural lands that are not planted in rice or orchards provide suitable foraging habitat.
American peregrine falcon *Falco peregrinus anatum*	SE; State Fully Protected, MNBMC	Although some potential foraging habitat occurs in the project area, no nesting habitat is present. This species is not expected to occur in the project area.	This species nests on high cliffs or human-made structures and generally forages near water.
Prairie falcon *Falco mexicanus*	CSC	Prairie falcons have been observed in the project area. No nesting habitat present.	This species forages in dry, open country and nests on cliffs. Foraging habitat for prairie falcon occurs in the project area but no nesting habitat is present.
Bald eagle *Haliaeetus leucocephalus*	FT SE State Fully Protected	Some potential foraging habitat is present but no bald eagle nesting habitat occurs in the project area, and this species is not expected to occur.	This species occurs near ocean shorelines, lake margins and rivers where it forages. Bald eagles nest in tall trees or on cliffs near large bodies of water.

Common Name ***Latin Name***	**Status**	**Potential in Project Area / Results of Previous Studies**	**Notes**
Tricolored blackbird *Agelaius tricolor*	FSC CSC MNBMC	Suitable nesting habitat (i.e., freshwater marsh) occurs in the project area. Tricolored blackbirds have been observed in the project area but no nesting colonies have been identified.	This species nests colonially, usually in cattail and tule marshes, but is also known to nest in thistle and blackberry patches and other dense vegetation.
Golden eagle *Aquila chrysaetos*	Federally Protected; CSC, State Fully Protected	Although no nesting habitat is present, golden eagles have been observed foraging in the project area.	This species forages in open country and nests in trees or on cliffs.
Northern harrier *Circus cyaneus*	CSC	Northern harriers have been observed foraging in the project area, and one nest was identified.	Suitable habitat for this species includes coastal salt marsh, fresh-water marsh and open grassland, where it both forages and nests.
White-tailed kite *Elanus caeruleus*	State Fully Protected, MNBMC	White-tailed kites have been observed foraging in the project area, and one nest was identified.	This species occurs in open groves, river valleys, marshes and grasslands.
Double-crested cormorant *Phalacrocorax auritus*	CSC	This species was observed in the project area near Markham Ravine. Nesting habitat occurs in the project area, but no nesting colony has been identified.	This species nests colonially on coastal cliffs and offshore islands, and along lake margins in the interior of the state.
Aleutian Canada goose *Branta canadensis leucopareia*	FT	Wintering (foraging) habitat is present in the project area for Aleutian Canada goose, and this species could occur	This species breeds in the Aleutian Islands and winters in lower latitudes including areas of the U.S. This species generally winters on or near lakes or other bodies of fresh water, often foraging in pastures or fields.
Mountain plover *Charadrius montanus*	FTP CSC MNBMC	This species could potentially forage in the project area during the winter.	The mountain plover breeds in short-grass prairie in the mid-western U.S. and winters in semi-arid and arid grasslands and agricultural areas in the southwestern U.S. and Mexico.
Western burrowing owl *Athene cunicularia hypugea*	FSC CSC MNBMC	Although not observed in the Study Area, suitable habitat for the burrowing owl is present, and this species could potentially occur.	The burrowing owl inhabits open, dry grasslands, deserts and scrublands with low-growing vegetation and is commonly observed in agricultural areas. The burrowing owl nests below ground, utilizing abandoned burrows of other species, especially ground squirrels.
Ferruginous hawk *Buteo regalis*	FSC CSC MNBMC	Ferruginous hawks could potentially forage in the project area during the winter.	This species breeds in the Great Plains region from the mid-western U.S. to southern Canada. Ferruginous hawks winter in open grasslands, sagebrush flats, desert scrub and other open country in the southwestern portion of their breeding range and extending into the southwestern U.S. and Mexico.
White-faced ibis *Plegadis chihi*	FSC CSC MNBMC	Although not observed during surveys, the white-faced ibis could utilize marsh habitat within the project area for breeding and/or foraging.	This species occurs in freshwater marsh habitats.

Common Name *Latin Name*	Status	Potential in Project Area / Results of Previous Studies	Notes
California horned lark *Eremophila alpestris actia*	CSC	Observed on the project site during previous surveys. Suitable nesting habitat present; no nesting observed.	This species nests in grassland.
Grasshopper sparrow *Ammodramus savannarum*	FSC MNBMC	Grasshopper sparrows have been observed in the project area but no nests were identified.	They occur in dense grasslands, lowland plains, and in valleys and on hillsides on lower mountain slopes. The project area could support breeding populations of this species.
Lark sparrow *Chondestes grammacus*	FSC	Although not observed during surveys, suitable habitat for the lark sparrow is present in the project area and this species could occur.	The lark sparrow occurs in pastures, farmlands and roadsides.
American bittern *Botaurus lentiginosus*	FSC, MNBMC	This species has been observed in the project area but no nesting was observed.	They occur in freshwater and slightly brackish marsh habitat, as well as coastal saltwater marsh. Suitable nesting habitat for the American bittern occurs in the project area.
Amphibians			
Foothill yellow-legged frog *Rana boylii*	FSC CSC State Protected	The foothill yellow-legged frog is thought to be extinct in the Sacramento Valley and is not expected to occur in the project area.	This species occurs in shallow, partly-shaded streams and riffles with rocky substrates. This frog prefers substrates that are at least cobble-sized and requires open areas where it can bask on rocks.
Mountain yellow-legged frog *Rana muscosa*	FSC CSC State Protected	No suitable habitat is present in the project area, and this species is not expected to occur.	This species occurs in montane habitats, often in riparian areas.
California red-legged frog *Rana aurora draytonii*	FT CSC State Protected	This species has not been observed in the Study Area and there are no records for the project vicinity. Although suitable habitat for the California red-legged frog is present in the project area, due to the presence of large numbers of non-native predators (i.e., bullfrog, crayfish, largemouth bass, etc.), this species is not expected to occur.	The red-legged frog inhabits lowlands and foothills in or near permanent sources of deep water. The frog prefers ponds or creeks with extensive shoreline vegetation but will disperse 1.6 km (1 mi) or more during and after rain events.
Western spadefoot toad *Scaphiopus hammondii*	FSC CSC State Protected	Suitable habitat for the western spadefoot occurs in the project area, and this species could potentially occur.	Spadefoots occupy a variety of lowland habitats including washes, alluvial fans and river floodplains. Areas of sandy soil and open vegetation are preferred.
California tiger salamander *Ambystoma californiense*	FC CSC State Protected	Suitable habitat for California Tiger Salamander is present in the project area, but the project area is well north of its known range. Consequently, this species is not expected to occur.	This species occurs near water sources in grasslands and open woodland habitats.

Common Name *Latin Name*	Status	Potential in Project Area / Results of Previous Studies	Notes
Reptiles			
Northwestern pond turtle *Clemmys marmorata marmorata*	FSC CSC State Protected (full species)	Northwestern pond turtles have been observed in the project area.	This species occurs in permanent or nearly permanent bodies of water in a variety of habitats.
California horned lizard *Phrynosoma coronatum frontale*	FSC CSC State Protected	Although not observed during previous surveys, this species occurs in a wide variety of habitats and could potentially occur in the project area.	A variety of habitats.
Giant garter snake *Thamnophis gigas*	FT ST State protected	Suitable giant garter snake habitat is present in the project area, but the project is well east of its known distribution. The giant garter snake is not expected to occur in the project area.	It occurs in freshwater marsh and low gradient streams and has adapted to similar habitat provided by drainage canals and irrigation ditches.
Fish			
Chinook salmon *Oncorhynchus tshawytscha*	The chinook salmon (*Oncorhynchus tshawytscha*) is an anadromous species that spends part of its life in freshwater and part in salt water. These species spawn in small, freshwater streams where the young remain for a time before migrating to the ocean. Adults return to their natal streams to spawn and complete their life cycle. Chinook salmon require clean gravel beds in which to spawn. The reaches of the drainages that flow through the project area do not contain suitable spawning habitat for chinook salmon. However, upstream reaches of Auburn Ravine and Coon Creek do contain potential spawning habitat. In addition, drainages and tributaries within the project area could provide non-natal rearing habitat for salmon fry in early stages of development.		
Winter-run chinook salmon	FE SE	Winter-run salmon have not been observed in the project area, and are not expected to occur.	
Central Valley spring-run chinook salmon	FT	Spring run salmon have not been observed in the project area, and are not expected to occur.	
Central Valley fall-run chinook salmon	FC	Fall-run chinook salmon have been observed in low numbers in Auburn Ravine, Coon Creek and Ingram Slough.	
Delta smelt *Hypomesus transpacificus*	FT ST	No suitable habitat for this species occurs in the project area and it is not expected to occur.	It occurs in sloughs and backwater areas of the Sacramento-San Joaquin Delta.
Central Valley steelhead *Oncorhynchus mykiss*	FT	The Central Valley steelhead could potentially spawn in upstream reaches of Auburn Ravine or Coon Creek, and consequently could occur in the project area.	Like the chinook salmon, this species is anadromous and migrates from the ocean to its spawning grounds. Its spawning habitat requirements are similar to those of salmon.
Sacramento splittail *Pogonichthys macrolepidotus*	FT CSC	Sacramento splittail has not been observed in the Study Area and is not expected to occur due to absence of suitable habitat.	This species occurs in slow-moving sections of large river systems.
Green sturgeon *Acipenser medirostris*	FSC CSC	It has not been observed in the Study Area and is not expected to occur.	This species is only known to spawn in the Sacramento and Klamath Rivers.

Common Name *Latin Name*	Status	Potential in Project Area / Results of Previous Studies	Notes
Longfin smelt *Spirinchus thaleichthys*	FSC CSC	This species has not been observed in the Study Area and is not expected to occur.	Longfin smelt occur in sloughs and backwater areas of the Sacramento-San Joaquin Delta.
River lamprey *Lampetra ayresi*	FSC CSC	The river lamprey has not been observed in the Study Area but could potentially occur.	This species occurs in the lower Sacramento River, San Joaquin River, and Russian River, and in coastal streams north of the San Francisco Bay.
Pacific lamprey *Lampetra tridentata*	FSC	This species has been identified in the Study Area.	The Pacific lamprey in known from most coastal streams from Alaska south to southern California.
Invertebrates			
Vernal pool fairy shrimp *Branchinecta lynchi*	FT	Vernal pool fairy shrimp have been identified in vernal pools throughout the project area.	This species inhabits vernal pools in grasslands in the Central Valley and central and southern coast mountains.
Vernal pool tadpole shrimp *Lepidurus packard*	FE	Although not previously recorded in the Study Area, vernal pool tadpole shrimp are known to occur at the west edge of the project and could potentially occur in the project area.	This species inhabits vernal pools and swales in the Sacramento Valley.
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	FT	Elderberry plants occur in the Study Area, and Valley elderberry longhorn beetle could potentially be present.	This species occurs only in the Central Valley in close association with blue elderberry (*Sambucus mexicana*). The larvae of the beetle feed and mature within the stems of elderberry plants with a diameter of one inch or greater.
Plants			
Slender Orcutt grass *Orcuttia tenuis*	FT SE CNPS 1B	Slender Orcutt grass was not recorded during previous focused surveys or during 1999 sampling. There are no known records from the project vicinity.	This species occurs in vernal pools from Sacramento County in the south to Siskiyou County.
Sacramento Orcutt grass *Orcuttia viscida*	FE Se CNPS 1B	Could potentially occur. Associated with Bogg's Lake hedge-hyssop, which was identified on the project site. Not identified during previous surveys.	This species is only known from vernal pools in Sacramento County.
Ahart's dwarf rush *Juncus leiospermus var. ahartii*	FSC CNPS 1B	This species was observed in ungrazed pools in the "A" alignments northwest of Lincoln during previous surveys. Ahart's dwarf rush could potentially occur elsewhere in the Study Area.	Ahart's dwarf rush occurs in vernal pools.
Hispid bird's-beak *Cordylanthus mollis ssp. hispidus*	FSC CNPS 1B	The closest known occurrence of this species is approximately 6.4 km (4 mi) southeast of the project area. Hispid bird's beak was not observed in the project area during previous surveys, but could potentially occur.	This species occurs in damp, alkaline soils in meadows, playas, and valley and foothill grasslands.
Red Bluff dwarf rush *Juncus leiospermus var. leiospermus*	CNPS 1B	This species was not recorded in the Study Area during previous focused surveys.	This species occurs in margins of vernal pools and in wet places in chaparral and woodland communities.

Common Name *Latin Name*	Status	Potential in Project Area / Results of Previous Studies	Notes
Bogg's Lake hedge-hyssop *Gratiola heterosepala*	SE CNPS 1B	Bogg's Lake hedge-hyssop was observed in one vernal pool east of the "A" alignments and could occur elsewhere within the Study Area.	This species occurs in vernal pools and freshwater marshes and swamps.
Dwarf downingia *Downingia pusilla*	CNPS 2	Dwarf downingia was observed in the deeper vernal pools throughout the Study Area.	This species occurs in vernal pools and roadside ditches in valley and foothill grasslands.
Big-scale balsam root *Balsamorhiza macrolepis var. macrolepis*	CNPS 1B	Could potentially occur. Not identified during previous surveys.	This species occurs in valley and foothill grassland habitat.
Legenere *Legenere limosa*	FSC CNPS 1B	Legenere was not recorded in the Study Area during previous focused surveys but has been recorded in the general vicinity.	This species occurs in wet areas and vernal pools.
Valley oak *Quercus lobata*	Protected by Senate Concurrent Resolution No. 17		Riparian areas and isolated stands.

Federal
FE - Endangered
FT - Threatened
FPE - Proposed Endangered
FPT - Proposed Threatened
FC - Candidate
FSC - Species of Concern
MNBMC - Migratory Nongame Birds of Management Concern

State
SE – Endangered
ST – Threatened
CSC - Species of Concern
California Native Plant Society
CNPS 1B – Rare or Endangered in California and elsewhere
CNPS 2 - Rare or Endangered in California, more common elsewhere

Endangered (state and federal): A species that is in danger of extinction throughout all or a significant portion of its range.

Threatened (state and federal): A species that that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Proposed Threatened or Endangered (federal): Any species that is proposed in the Federal Register to be listed under Section 4 of the Endangered Species Act.

Candidate (federal): Species for which the FWS has on file sufficient information on biological vulnerability and threat(s) to support issuance of a proposal for listing, but issuance of a proposed rule is currently precluded by higher priority listing actions.

Species of Concern (federal): A species that was a former federal Category 2 Candidate for listing, which is a species for that the FWS has concerns about, but has insufficient information on file on vulnerability and threats to support issuance of a proposal for listing.

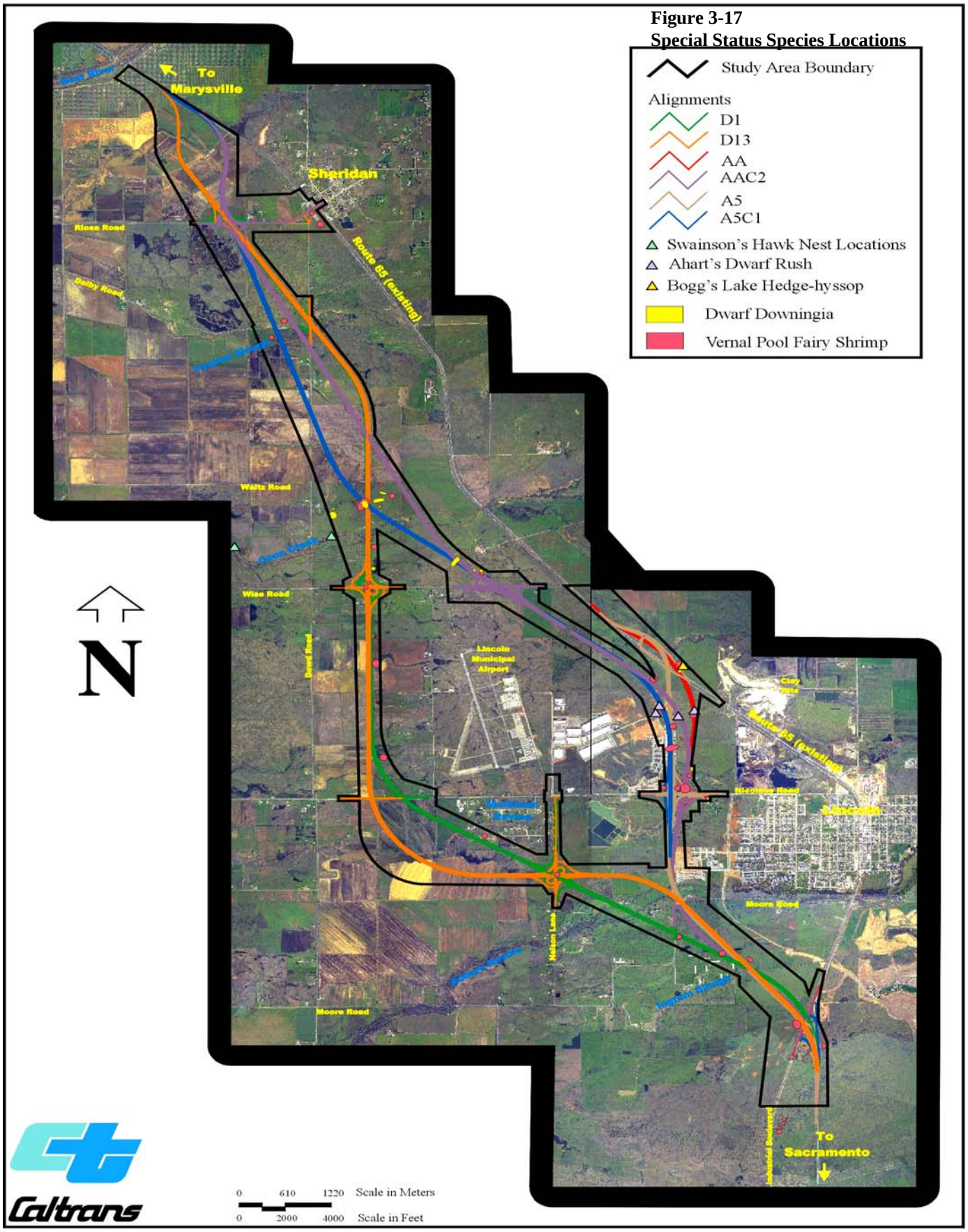
Species of Concern (state): California species of special concern are those that the California Department of Fish and Game is concerned about because of declining population levels, limited ranges, and/or continuing threats have made them vulnerable to extinction.

Migratory Nongame Birds of Management Concern: Species of migratory nongame birds that are considered to be of concern in the United States because of: 1) documented or apparent population declines; 2) small or restricted populations, or; 3) dependence on restricted or vulnerable habitats.

CNPS List 1B: Plants that the California Native Plant Society (CNPS) considers to be rare, threatened or endangered in California and elsewhere.

CNPS List 2: Plants that the CNPS considers to be rare, threatened or endangered in California, but are more common elsewhere.

Figure 3-17
Special Status Species Locations



10/20/99(PCT830)

Source: Mapping/GIS - LSA Associates, Inc., 1999
Base Photo - Andregg, Inc.. March 1999

Special Status Species Locations

Figure 3-17 shows locations where special status species have been recorded in the Study Area. Letters documenting coordination with the U.S. Fish and Wildlife Service are located in Chapter 7.

This section provides an overview of the special status species that are known to occur, or may potentially occur, within the Study Area. Additional detailed information on State and Federal listed species potentially affected by this project is included in the Natural Environment Study, available by request. The streams present within the project site will likely be considered Critical Habitat for the Central Valley steelhead. Because the fall/late fall-run chinook salmon is a candidate for listing as threatened or endangered, Critical Habitat, and Essential Fish Habitat, could be designated for this ESU if it is listed prior to implementation of the project.

3.7.6 Wetlands/Jurisdictional Waters Assessment

Wetlands and waters of the U.S. (streams and lakes) that are subject to California Department of Fish and Game and/or U.S. Army Corps of Engineers jurisdiction present in the project study area are summarized in Table 3-24.

California Department of Fish and Game (CDFG)

CDFG, through provisions of Sections 1602 of the California Administrative Code, is empowered to issue agreements for any alteration of a river, stream or lake where fish or wildlife resources may be adversely affected. The presence of a channel bed and banks, and at least an intermittent flow of water define streams (and rivers). The agreement generally includes, within the jurisdictional limits of streams and lakes, any riparian habitat present. In most situations, wetlands associated with a stream or lake would fall within the limits of riparian habitat.

For purposes of this evaluation, CDFG waters include mixed riparian forest habitat associated with Auburn Ravine and Coon Creek, willow scrub and marsh habitat (most of which is associated with drainages or ponds) and other waters (primarily ponds). Vernal pools and swales are not included, as these features are not regulated by CDFG.

The project will result in the alteration of lakes and streambeds subject to CDFG regulation. Consequently, a Section 1602 Streambed Alteration Agreement will be required. Notification to CDFG is generally made after the environmental process is complete and final plans are being prepared.

Table 3-24 Jurisdictional Waters Occurring in the Study Area

Jurisdictional Waters	Area *(acres in italics)*	Percentage of total wetlands
USACE – Wetlands		
Willow scrub	1.9 ha (4.7 *ac)*	1.76%
Freshwater marsh	61.47 ha (*151.9 ac)*	57.02%

Jurisdictional Waters	Area *(acres in italics)*	Percentage of total wetlands
Vernal marsh	10.32 ha *(25.5 ac)*	9.57%
Vernal pool	31.24 ha (77.2 *ac)*	28.98%
Vernal swale	2.87 ha (7.1 *ac)*	2.67%
Total - USACE Wetlands		107.81 ha (*266.4 ac)*
USACE – Non-wetlands (Open water)		11.33 ha (*28.0 ac)*
Total - USACE Wetlands and Waters of the U.S.		119.14 ha (*294.4 ac)*
CDFG Jurisdictional Waters (Estimated)		92.55 ha (*228.7 ac)*

Revised Alternatives Analysis 9/24/02

U.S. Army Corps of Engineers (USACE)

Creeks, marshes, vernal pools and other waters within the Study Area are subject to USACE permitting authority under Section 404 of the Clean Water Act. A Section 404 permit from the USACE is required for discharges of dredged or fill material into vernal pools and swales, creeks, marshes and other regulated waters of the U.S. These discharges will occur as a result of roadbed construction, bridge and culvert construction and other similar activities. Based on preliminary impact determinations, an individual 404 permit will likely be required. Riparian communities may not fall under USACE jurisdiction unless they are below the ordinary high water mark (OHWM) or classified as wetlands.

Both NEPA and Section 404 of the Clean Water Act require a thorough evaluation of project alternatives as part of the review process. NEPA regulations require that an EIS "rigorously explore and objectively evaluate all reasonable alternatives." EPA regulations, which apply to USACE permitting authority under Section 404, stipulate that only the least environmentally damaging practicable alternative (LEDPA) may be permitted. The NEPA/404 Integration MOU was adopted in 1993 in order to improve interagency coordination and integrate the NEPA and Section 404 procedures. Section 404(b)(1) requires an Alternatives Analysis in order to document the evaluation and identification of the LEDPA.

The project is subject to the NEPA/404 Integration Memorandum of Agreement (MOU); consequently, coordination with the USACE regarding permitting requirements has been ongoing for some time. Documentation of the NEPA/404 coordination can be found in Chapter 7. An Alternatives Analysis, pursuant to Section 404(b)(1) requirements, also has been prepared and is available for review at the Caltrans' District 3 Sacramento office, 2389 Gateway Oaks Dr. Sacramento, CA.

Through the NEPA/404 process, the LEDPA was identified (D13 North Modified). Concurrence was received on the Draft Mitigation and Monitoring Plan in December 2004 for

the project and a final concurrence from the USACE will be pursued after final design has been completed. Letters are included in Appendix E, NEPA/404 Communication.

California Regional Water Quality Control Board

As part of the 404 permitting process, a Section 401 Certification from the Regional Water Quality Control Board is required. Application to the Regional Board is generally made after the environmental document is complete. A 401 Certification will be required before the 404 permit is issued.

Federal Wetland Delineation

The wetland delineation consists of a review and updating of the previous wetland delineation that was completed in 1994. The most recent wetland delineation was submitted to USACE in March 2004, and has not yet been verified. The delineation is preliminary and intended to support the evaluation of project alternatives. A wetland delineation has been prepared and submitted to the regulatory agencies and is awaiting approval. In order to be considered a jurisdictional wetland by the USACE and therefore subject to regulatory authority under Section 404 of the Clean Water Act, an area must possess three wetland characteristics: hydrophytic vegetation, wetland hydrology and hydric soils. Wetland vegetation, hydrology and soils each have specific criteria that must be satisfied in order for that particular wetland characteristic to be met. There are, however, exceptions to requirement of satisfying all three parameters, especially for atypical wetlands and "problem wetlands."

Wetland Value Assessment

Wetlands and other waters in the Study Area provide a variety of functions and values typical of these aquatic ecosystems. The objective of the wetland value assessment is to provide a useful means for comparing project alternatives based on the relative quality of wetland resources present.

There are two primary wetland types in the Study Area: vernal pool/swale complexes and freshwater marsh. Separate evaluation factors were developed for each type. The acreage of other wetland types such as willow scrub and vernal marsh is relatively limited; consequently, a value assessment of these types was not performed. Locations of the wetlands evaluated are shown in Figure 3-18.

Source: Mapping/GIS - LSA Associates, Inc., 1999
Base Photo - Andregg, Inc,. March 1999

Wetlands and Other Regulated Waters

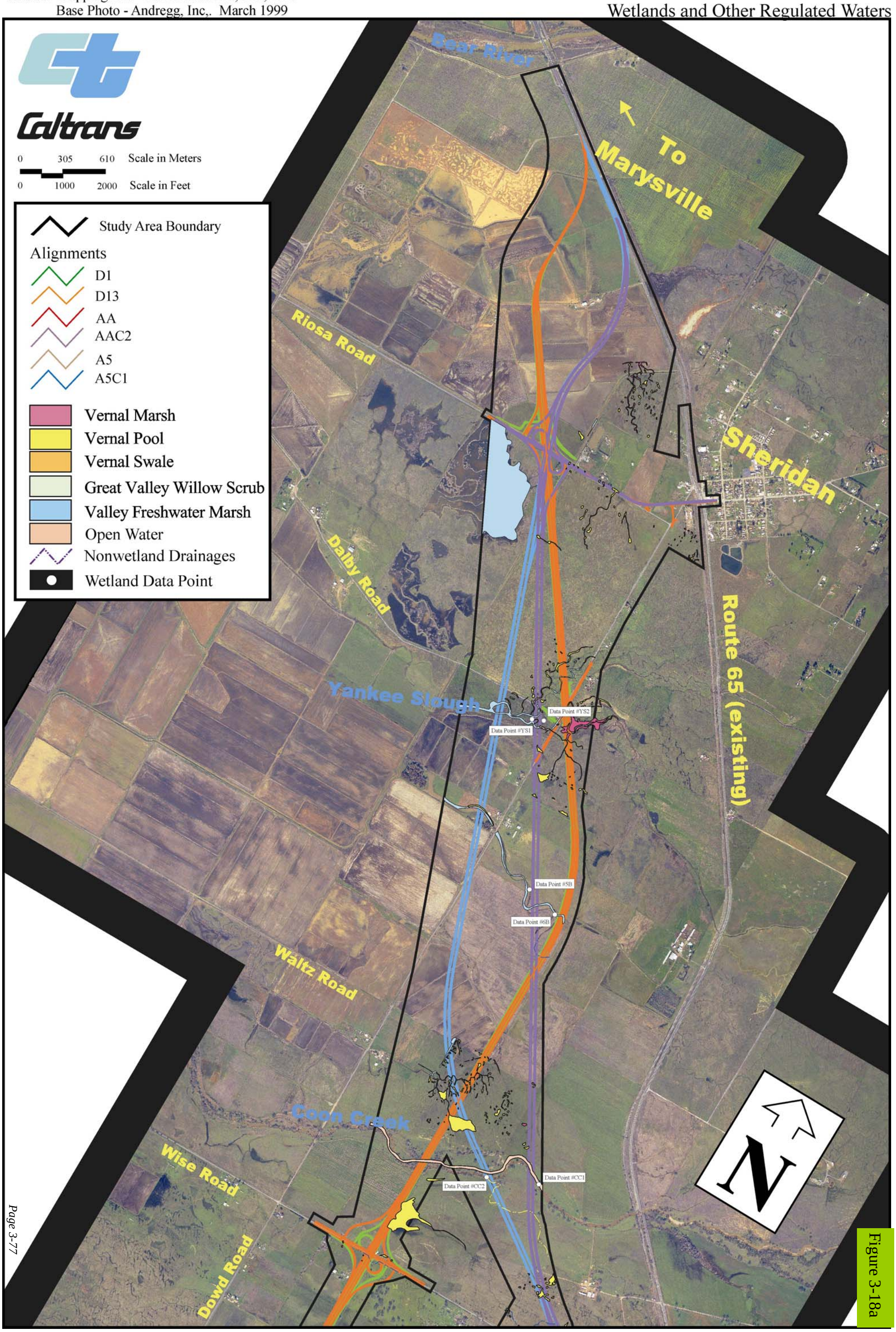
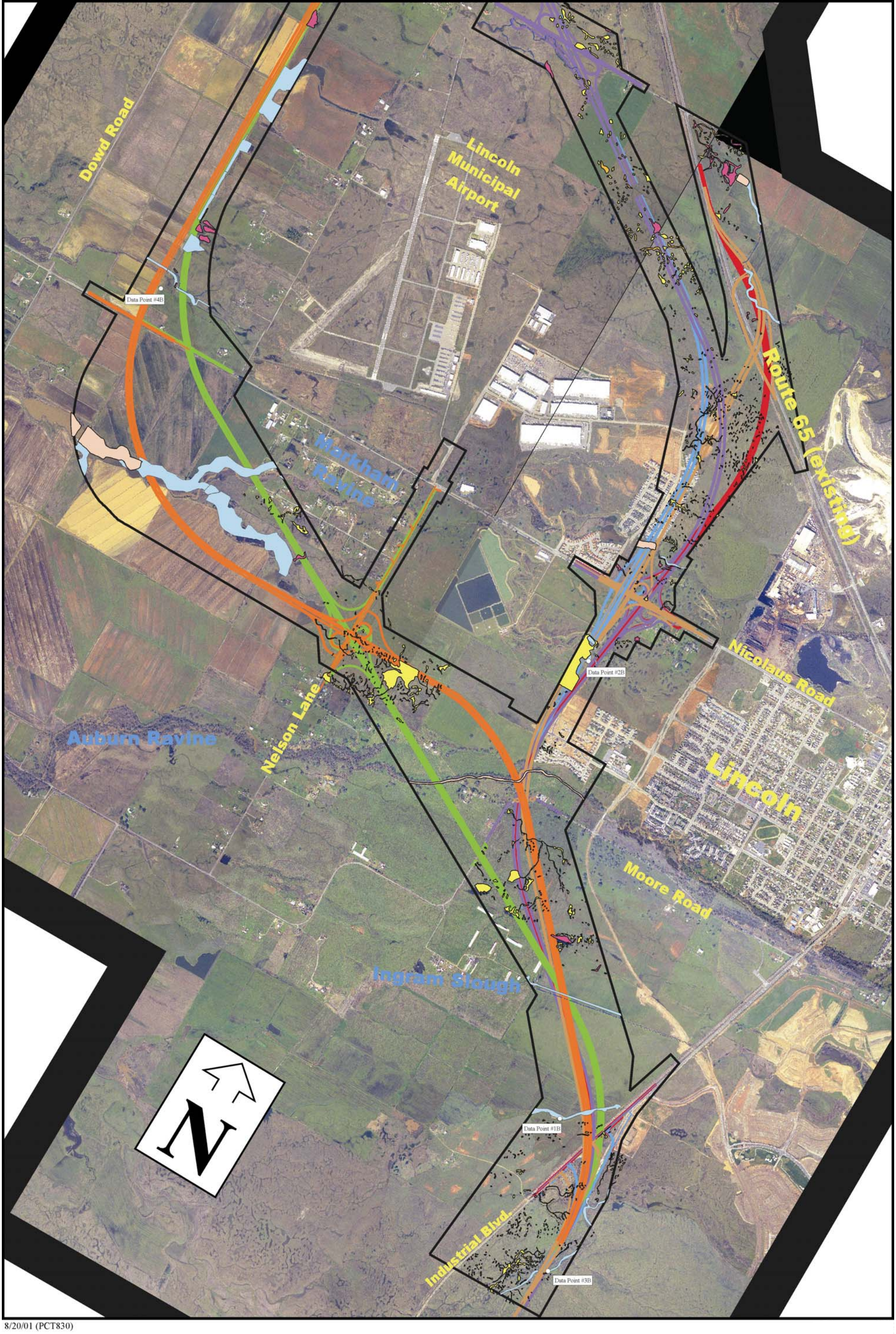


Figure 3-18a



8/20/01 (PCT830)

Source: Mapping/GIS - LSA Associates, Inc., 1999
Base Photo - Andregg, Inc,. March 1999

Wetlands and Other Regulated Waters

Figure 3-18b Wetlands and Other regulated waters

Vernal Pool/Swale Complexes

These wetlands are characterized by a seasonal cycle of flooding and saturation during the winter and early spring and desiccation during the summer and fall. Most vernal pool wetlands support specialized plant and invertebrate communities adapted to this hydrologic regime. Vernal pools often occur in complexes consisting of a number of pools interconnected by swales. The wetland value assessment for the vernal pool complexes depicted in Figure 3-18 is presented in Table 3-25.

Evaluation Factors: Factors considered most important for vernal wetlands, generally based on the criteria developed by U.S. Fish and Wildlife Service (FWS), include the following:

Size of vernal pool complex - larger complexes are more likely to exhibit a greater diversity of soils, vernal pool types, plant species, etc. and are more resistant to disturbances. Larger complexes are generally considered to have greater value than small complexes.

Vernal pool density - vernal pool complexes with more wetland acreage (i.e., higher pool density) are considered to have greater value.

Vernal pool type - less common vernal pool types (i.e., volcanic mudflow vernal pool complexes) are considered to have greater value.

Occurrence of special status species - vernal pools supporting State or Federally listed or proposed species, or species with some other special status, are considered to have greater value.

Condition of wetlands - the general condition of the site and level of degradation. Vernal pool complexes in good condition are considered to have higher value.

Table 3-25 Wetland Value Assessment for Vernal Pool Complexes

Complex #	Location	Pool Density[1]	Complex Size[2]	Vernal Pool Type	Special Status Species		Condition	Comments
					Observed in Complex	Potentially Occurring		
All Alignments (A5C1, AAC2, D1, D13)								
1	South end of Study Area	2.2 %	120-400 ha *300-1000 acres*	Northern hardpan and volcanic mudflow	vernal pool fairy shrimp, CA linderiella	vernal pool tadpole shrimp, dwarf downingia, Ahart's dwarf rush, Bogg's Lake hedge-hyssop, legenere	Good	Large, diverse, relatively undisturbed complex; includes some tracts of high quality and density pools (outside of Study Area); all alignments cross the east edge of complex, which is moderately disturbed (fair condition)

Complex #	Location	Pool Density[1]	Complex Size[2]	Vernal Pool Type	Special Status Species		Condition	Comments
					Observed in Complex	Potentially Occurring		
2	North of Ingram Slough, adjacent to Moore Road	3.3 %	40-120 ha *100-300 acres*	Northern hardpan	vernal pool fairy shrimp, CA linderiella	vernal pool tadpole shrimp, dwarf downingia, Ahart's dwarf rush, Bogg's Lake hedge-hyssop, legenere	Fair	Smaller complex surrounded by development and disturbance; has some very large pools; all alignments bisect this complex.
7	North of Coon Creek	7.0 %	40-120 ha *100-300 acres*	Northern hardpan	vernal pool fairy shrimp, CA linderiella, dwarf downingia	vernal pool tadpole shrimp, Ahart's dwarf rush, Bogg's Lake hedge-hyssop, legenere	Fair	Smaller complex with high density of pools; generally surrounded by agricultural land; all alignments bisect this complex.
8	Yankee Slough area	1.7 %	> 400 ha *1000 acres*	Northern hardpan	vernal pool fairy shrimp, CA linderiella	vernal pool tadpole shrimp, dwarf downingia, Ahart's dwarf rush, Bogg's Lake hedge-hyssop, legenere	Fair	Very large complex, extending well east of Study Area; includes scattered development and agricultural uses; some tracts of high quality pools remain; all alignments cross west edge of complex.
Eastern Corridor (A5C1, AAC2)								
5	West of clay pits and Sierra Pacific, adjacent to SR 65	2.9 %	40-120 ha *100-300 acres*	Northern hardpan and Volcanic mudflow	vernal pool fairy shrimp, CA linderiella, dwarf downingia, Ahart's dwarf rush, Bogg's Lake hedge-hyssop	vernal pool tadpole shrimp, legenere	Good	Diverse complex; includes some areas of high quality pools; complex is crossed by existing Rt. 65 and residential development is encroaching on the west; eastern alignments bisect this complex
6	Airport area	3.9 %	> 400 ha *1000 acres*	Northern hardpan	vernal pool fairy shrimp, CA linderiella, dwarf down-ingia	vernal pool tadpole shrimp, Ahart's dwarf rush, Bogg's Lake hedge-hyssop, legenere	Fair	Large, diverse complex; although affected by extensive development, including airport, some large tracts of high quality pools remain; eastern alignments bisect east edge of this complex
Western Corridor (D1, D13)								
3	North of Auburn Ravine, adjacent Nelson Lane	17.2 %	< 40 ha *100 acres*	Northern hardpan	vernal pool fairy shrimp, CA linderiella	vernal pool tadpole shrimp, dwarf downingia, Ahart's dwarf rush, Bogg's Lake hedge-hyssop, legenere	Good	Small, isolated complex with very high pool density; relatively undisturbed; complex bisected by both western alignments

Complex #	Location	Pool Density[1]	Complex Size[2]	Vernal Pool Type	Special Status Species		Condition	Comments
					Observed in Complex	Potentially Occurring		
4	Markham Ravine area	7.0 %	< 40 ha *100 acres*	Northern hardpan	vernal pool fairy shrimp, CA linderiella	vernal pool tadpole shrimp, dwarf downingia, Ahart's dwarf rush, Bogg's Lake hedge-hyssop, legenere	Poor	Small complex includes several residences and is generally degraded; D1 alignment crosses western portion of this complex

[1] Density of overall complex estimated based on density within Study Area.
[2]Total complex size, including portions extending outside of Study Area.

Analysis

The eight vernal pool complexes vary widely in the attributes considered in this evaluation. Complex size ranges from about 50 acres (Complex 4) to over 2,000 acres (Complex 8). Vernal pool density ranges from 1.7 % (Complex 8) to 17.2 % (Complex 3), average density is 5.7 %. Complex condition ranges from good (Complexes 1, 3 and 5) to poor (Complex 4). All of the complexes showed some level of disturbance; consequently, none were considered to be in excellent condition.

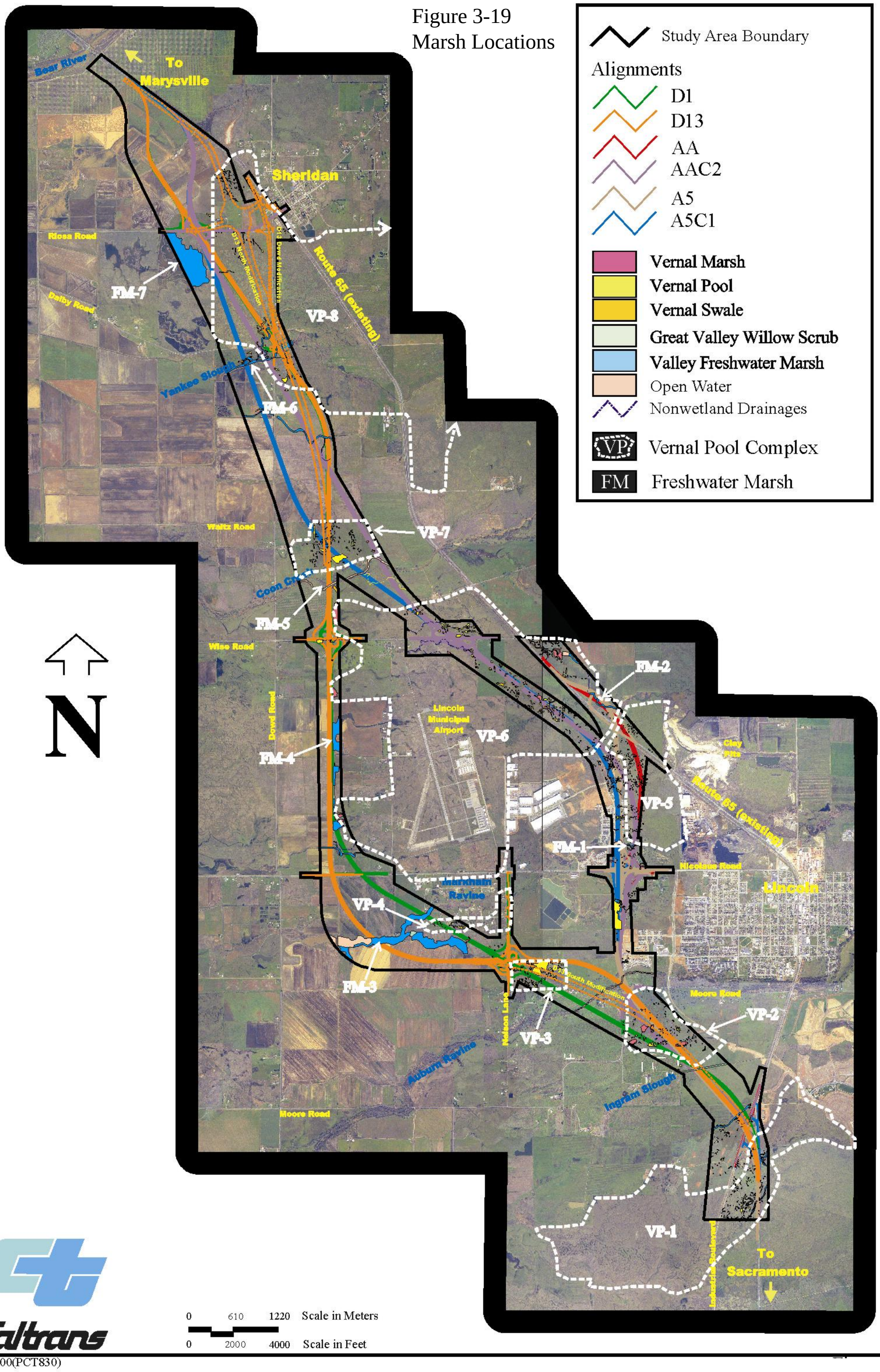
In order to compare the various complexes, they were assigned one of three relative value categories (High, Moderate or Low) based on the factors described above.

Complex 4 is clearly the lowest value complex in the Study Area due to its small size and poor condition. Complex 5 is probably the highest value due to the presence of two pool types and large number of observed special status species. Most of Complex 1, which also includes two pool types, is outside of the Study Area and has not been surveyed for special status species.

Freshwater Marsh Complexes

Freshwater marsh is the most abundant wetland type in the Study Area (See Figure 3-19). This habitat is highly variable in configuration, habitat composition and overall quality.

Figure 3-19
Marsh Locations



8/14/00(PCT830)

Source: Mapping/GIS - LSA Associates, Inc., 1999

Evaluation Factors. Factors considered most important for freshwater marsh wetlands include the following:

Size of marsh complex - larger complexes are more likely to exhibit a diversity of habitat types, be resistant to disturbances and provide greater opportunities for wildlife use.

Complexity of habitat - marsh wetlands supporting several habitat types (e.g., open water, emergent wetlands, willow scrub, overstory canopy) are considered to have greater value.

Occurrence of special status species - wetlands supporting State or Federally listed or proposed species, or species with some other special status, are considered to have greater value.

Condition of wetlands - the general condition of the site, including the diversity of wetland and upland habitats and level of degradation. Wetlands in good condition are considered to have higher value.

The value assessment for freshwater marsh is presented in Table 3-26. The following ratings were assigned to seven freshwater marsh complexes:

Complex Size: Actual wetland area

Habitat Complexity: High, Moderate or Low

Special Status Species: Species recorded or expected to occur

Condition: Excellent, Good, Fair or Poor

Table 3-26 Wetland Value Assessment for Freshwater Marsh

Wetland No.	Location	Wetland Acreage[1]	Habitat Complexity	Potential Special Status Species	Condition	Comments
All Alignments						
5	Coon Creek	0.7 ha 1.9 ac	Moderate	River otter, double-crested cormorant, northwestern pond turtle, chinook salmon, Central Valley steelhead, river lamprey, Pacific lamprey	Fair	Herbaceous marsh occurs in small, discontinuous patches along low terraces of creek; subject to regular scour; wildlife value enhanced by presence of riparian community
6	Yankee Slough	3.6 ha 9.0 ac	Moderate	Tricolored blackbird, white-faced ibis, American bittern, northwestern pond turtle	Fair-Good	Primarily herbaceous marsh with cattail and tule thickets interspersed with open water and willow scrub

Wetland No.	Location	Wetland Acreage[1]	Habitat Complexity	Potential Special Status Species	Condition	Comments
Eastern Corridor (A5C1, AAC2)						
1	Markham Ravine, west of Sierra Pacific	0.3 ha 0.7 ac	High	Tricolored blackbird, double-crested cormorant, Aleutian Canada goose, white-faced ibis, American bittern, northwestern pond turtle	Good	Marsh consists of a small pond and adjacent wetlands; high diversity with open water, mudflats, cattail/tule thickets and willow/riparian scrub
2	Adjacent to existing SR 65, west of clay pits	1.7 ha 4.1 ac	Low	Tricolored blackbird, northwestern pond turtle	Fair	Small, ephemeral marsh associated with low gradient drainage; minimal habitat development
Western Corridor (D1, D13)						
3	West end of Markham Ravine	22.4 ha 55.2 ac	High	River otter, tricolored blackbird, double-crested cormorant, Aleutian Canada goose, white-faced ibis, American bittern, northwestern pond turtle	Good to Excellent	Large marsh complex including a significant amount of open water; high diversity and good habitat development
4	West of airport	11.3 ha 28.0 ac	Low	Tricolored blackbird, northwestern pond turtle	Fair	Marsh consists of low-lying areas that impound water due to blockage by ricefield berm; limited habitat development
7	Duck ponds, Dowd and Riosa Rds.	19.7 ha 48.6 ac	High	Tricolored blackbird, double-crested cormorant, Aleutian Canada goose, white-faced ibis, American bittern, northwestern pond turtle	Good	Marsh primarily consists of man-made duck ponds; total area of marsh estimated at over 200 ac; this marsh is largely avoided by the western alignments

[1]Acreage within Study Area.

Analysis

Similar to the vernal pool complexes evaluated previously, the seven marsh complexes vary widely in the attributes considered in this evaluation. Wetland acreage within each complex ranges from less than one acre (Wetland 5) to over 55 acres (Wetland 3). Complexity ranges from low to high, and condition ranges from fair to good/excellent. All of the complexes showed some level of disturbance.

In order to compare the various marsh complexes, they were assigned to one of three value categories (High, Moderate or Low) based on the factors described above.

Table 3-27 Value Assessment of Marsh Complexes

High Value:	Marsh 3 - relatively large marsh complex; high diversity and good condition; habitat for several special status species Marsh 7 - very large marsh complex, most of which is outside Study Area; high diversity; good condition; habitat for several special status species
Moderate Value:	Marsh 1 - small in area and close to development but otherwise high quality due to complexity and condition of habitats; potential habitat for several special status species Marsh 6 - relatively small and linear, but with pockets of good herbaceous marsh habitat
Low Value:	Marsh 2 - small in area with low complexity, possibly ephemeral water supply and located close to development Marsh 4 - moderately large marsh complex, but with low complexity and somewhat degraded; limited habitat for special status species Marsh 5 - Although Coon Creek supports a valuable riparian community and provides high quality wildlife habitat, the marsh wetlands associated with the creek are small and discontinuous

Marsh 2 is the lowest value complex in the Study Area due to its small size, limited complexity and fair condition; Marsh 4 is similar but significantly larger. Marsh 3 is probably the highest value in the Study Area due to its large size, diversity of habitats and good to excellent condition.

3.8 CULTURAL RESOURCES

The National Historic Preservation Act of 1966, as amended, established the Advisory Council on Historic Preservation (ACHP) and set precedents and policies for the protection and preservation of historic and cultural resources. Section 106 of this Act mandates that Federal agencies with jurisdiction over a proposed undertaking consider the effects of that project upon any property that is included in, or eligible for inclusion in the National Register of Historic Places (NRHP).

In order to ensure that the requirements of Section 106 are met, FHWA follows procedures contained in 36 CFR 800, a set of regulations issued by the ACHP. Cultural resource investigations performed pursuant to these statutes are documented in a Historic Property Survey Report (HPSR), February 1991, copies of which are on file at Caltrans, District 3 Sacramento, 2389 Gateway Oaks, Sacramento, CA 95833.

Documentation of the Caltrans coordination with the State Historic Preservation Office can be found in Chapter 7 and Appendix D.

The cultural resource evaluation begins with the delineation of the Area of Potential Effects (APE). The APE is generally defined as the geographic area or areas within

which an undertaking may cause changes in the character or use of historic properties, if any such properties exist. The APE for this project consisted of the existing and proposed right-of-way. Field reviews and surveys of the APE, as well as archaeological record checks and examinations of historic records and archives, were conducted by qualified Department specialists. The following inventories and archives were consulted in preparing the survey reports.

- *National Register of Historic Places,* Through December 1989
- *California Historical Landmarks,* 1976
- *California Inventory of Historic Resources,* 1976
- *History of Placer County, California with Illustrations and Biographical Sketches of it's Prominent Men and Pioneers,* Thompson and West, Oakland, 1882
- *History of Placer and Nevada Counties, California,* by W.B. Lardner, and M. J. Brock, Historic Record Company, Los Angeles, 1924
- *California Place Names,* by E.G. Gudde, University of California Press, Berkeley, 1967
- *Historic Spots in California,* by M. B. Hoover, H.E. Rensch and E.G. Rensch, Stanford University Press, Stanford. 1966
- *Gold Districts of California,* by W.B. Clark, California Division of Mines and Geology, Bulletin 193, Sacramento, CA 1979
- *California Archaeological Inventory,* North Central Information Center, California State University, Sacramento
- *Grantee/Grantor Books* 1-8 Placer County Recorders Office, Auburn
- *Deed Books,* E, F, G, H, I, K, M, P, Q, EE, MM, QQ, 51, 54 and 168 on microfilm, Placer County Recorders Office, Auburn

In addition, a number of people and entities were interviewed and contacted via mail for information supporting the HPSR, including the Placer County Historical Society, the Placer County Museum, the California Native American Commission, Northern Sierra Indians, Inc., Placer Indian Association and others.

Approaches to resource identification and evaluation varied with respect to archeological (both historic and prehistoric) and historic architectural properties. Archeological properties were subject to "survey level" treatment, i.e., boundaries and features mapped, surface assemblages characterized and disturbances noted. No subsurface testing or controlled surface collections were attempted. As such, assessments of site structure, chronology, integrity etc. must be viewed as preliminary providing more

direction for further evaluation, rather than a definitive statement of significance. In contrast, the historic architectural survey results are more comprehensive, incorporating complete field and archival documentation and ultimately NRHP recommendations for each resource.

3.8.1 Prehistoric Resources

The archaeological surveys identified eleven pre-historic archaeological properties within the Area of Potential Effects (APE), two of which required further study. These two prehistoric archaeological sites requiring further study included some midden deposit, concentrations of lithic debris and flaked and ground stone tools. In addition, four archaeological properties immediately adjacent to the project area were investigated. No further study will be needed because the sites are not within the footprint of the preferred alternative.

3.8.2 Historic Period Resources

The Historic Architectural Survey Report (HASR) and the supplemental HASR (completed in 1989 and 1990) evaluated a total of eight properties, two of which were determined to be potentially eligible for listing in the NRHP: the Fickewirth Ranch and the Sheridan Cash Store (a.k.a. Country Store). Two additional properties in the vicinity of the project have been listed on the National Register since 1990; the Lincoln Public Library at 590 Fifth Street (listed 12/10/90) and the Women's Club of Lincoln at 499 E Street (listed 5/30/01). Both of these buildings are within the town of Lincoln and not affected by the project.

In the Supplemental HASR (dated August 1990), 39 properties were treated in accordance with the December 20, 1989 "Memorandum of Understanding Regarding Evaluation of Post-1945 Buildings, Moved Pre-1945 Buildings, and Altered Pre-1945 Buildings." Of the 39 properties, 21 do not predate 1957 and thus require no further study. The remaining eighteen properties predate 1957 and were evaluated in a Supplemental HASR dated September 2002. The application of "The Department's Interim Policy for the Treatment of Buildings Constructed in 1957 or Later" were documented in a statement of findings in the September 2002 Supplemental HASR that updates the August 1990 Supplemental HASR. None of these additional buildings were found to be eligible for the National Register.

Fickewirth Ranch

The property consists of a residence, tankhouse, windmill, long shed, timber-framed hay barn, one-time blacksmith shop and several small sheds. The buildings on the property have been maintained in their original form with little or no modification. It

is one of the oldest intact residences remaining in the local area. This property appears to meet the criterion for inclusion in the National Register under Criterion C-1, as an embodiment of its time, period and method of construction. All of the structures on the property, in their form and function contribute to this determination. The State Historic Preservation Officer (SHPO) concurred with this finding on October 21, 1991.

Country Store

The Sheridan Cash Store, presently called the Country Store, is a one story, six course American Bond Brick structure that sports an Italianate Commercial False Front consisting of a stepped parapet with a denticular cornice, which hides a corrugated metal gable roof. It is the sole survivor of a fire that destroyed the town in 1891. This property appears eligible for inclusion in the NRHP under Criterion A for its association with Sheridan's economic development and under Criterion C. It was designated a Point of Historical Interest by the California Historic Resources Commission on August 3, 1990.

3.9 HAZARDOUS WASTE

Environmental Assessors Inc. performed an Initial Site Assessment (ISA) in August 1994 for all the alignments being analyzed within the project area to assess the potential for encountering hazardous materials during the construction of the project. In February 1999, Caltrans performed an updated ISA and subsequent site assessments have been conducted since then. Copies of these reports are available for review at the Department of Transportation, District 3 Sacramento office, 2389 Gateway Oaks Dr., Sacramento, CA.

The majority of the parcels were determined to be free of significant hazardous waste. Some of the factors being taken into account were industrial manufacturing activities within the alignment areas, suspected asbestos containing materials, industrial wastewater generation, recorded or observed cases of hazardous waste/materials mismanagement practices on the subject property, pesticide use, and potentially PCB-containing electrical devices.

Evaluation of other factors such as neighboring land use and the presence of listed hazardous waste sites potentially within one mile of the subject area were used to identify potential hazardous waste issues. The following databases were consulted:

Table 3-28 Databases Searched

Name of Database	Types of Records	Agency
Contaminated Environmental Response Compensation and Liability Information System (CERCLIS)	Contaminated Sites under CERCLA (1980)	US EPA

Name of Database	Types of Records	Agency
National Priorities List (NPL)	Federal Superfund sites	US EPA
Liens	Filed Notices of Superfund liens	US EPA
Cortese	Hazardous Waste and Substances Site List	CAL EPA
CAL-Sites/Annual Work Plan (AWP)	Contaminated sites listed on the Annual Work Plan, cleanup sites under the Bond expenditure Plan	CAL EPA
Border Zone Properties(BZP)	Sites designated as Border Zone Properties (Deed restrictions)	CAL EPA
CAL-Sites/Abandoned Site Program Information System (ASPIS)	Actually or potentially contaminated sites under the Abandoned Site Program	CAL EPA
Hazardous Waste Information System (HWIS)	Hazardous Waste Generators, treatment Storage and Disposal Facilities	California Integrated Waste Management Board
Solid Waste Information System (SWIS)	Active and Inactive Sanitary landfills and Disposal Facilities	California Integrated Waste Management Board
Leaking Underground Storage Tanks (LTANK), Underground Tanks (UTANK)	Reported leakage of hazardous substances from underground storage tanks	California Regional Water Quality Control Board, Central Valley Region
Annual Work Plan (AWP)	All verified hazardous waste sites that are or will be targeted for abatement by the CAL EPA under the Hazardous Substance Cleanup Bond Act of 1984 and the Hazardous Substances Account.	Dept. of Toxic Substances Control
Leaking Underground Storage Tanks (LUST)	Leaking Underground Storage Tanks	California Regional Water Resources Control Board

The following agencies were contacted regarding underground and aboveground storage tanks, landfills and hazardous waste:

- Placer County Department of Public Works Special Districts Division (Martin, June 1994)
- Placer County Dept. of Public Works Division of Environmental Health (Buck, June 1994)

In addition, the following sources were reviewed in order to identify potential sites of concern:

- Voluntary Registered Heating and Agricultural Tanks Exempt from California Tank Regulations, as of September 25, 1985 and,
- Hazardous Materials Handlers, UST and Site Litigation (Open/Active/Closed/Temporarily Closed Facilities) as of June 30, 1994.
- Aerial Photographs

The following numbers of parcels were reviewed during the alternatives analysis and initially were determined to warrant further investigation.

Table 3-29 Parcels Possibly Requiring Further Investigation

Type of Site	Number of Parcels
Abandoned equipment with potential impacts	2
Listed on SPL	1
Existing UST+ Potential leaking	6
Surface staining, AST & UST, waste oil containers	3
Storage & Use of pesticides and fuel	3
Collection of discarded batteries	1
WECO Aerospace & Infinity Aviation questionable disposal practices	1
Municipal Sewer treatment plant	1

AST = Above Storage Tanks; UST = Underground Storage Tank; SPL= State Priority List, is the State equivalent of the Federal Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS list).

In addition, any building or other structure to be acquired will be evaluated for the presence of asbestos and lead-based paint. Due to the agricultural nature of the area, many of the parcels contain above ground storage tanks, which will require a Preliminary Site Investigation (PSI).

Due to the former use of waste oil potentially containing polychlorinated biphenyls (PCBs) to control dust in the railroad right of way, the railroad areas within the alignment could contain PCB affected soil as well as lead and/or diesel. These areas will require a PSI.

3.9.1 Hazardous Waste/Materials

The primary federal laws regulating hazardous waste/materials are the Resource Conservation and Recovery Act of 1976 (RCRA) and the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA). The purpose of CERCLA, often referred to as Superfund, is to clean up contaminated sites so that public health and welfare are not compromised. RCRA provides for "Cradle to Grave" regulation of hazardous waste.

In addition to the acts listed above, Executive Order 12088, Federal Compliance with Pollution Control, mandates that necessary actions be taken to prevent and control environmental pollution when federal activities or federal facilities are involved.

Hazardous waste in California is regulated primarily under the authority of the federal Resource Conservation and Recovery Act of 1976, and the California Health and Safety Code. Other California Laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup and emergency planning.

Worker health and safety and public safety are issues when dealing with hazardous materials that may affect human health and the environment. Proper disposal of hazardous material is vital if it is disturbed during project construction.

Title 8, Division 1, Chapter 4, Subcharter 4, Section 1532.1, of the California Code of Regulations requires addressing Aerially Deposited Lead (ADL). Until 1986 when

EPA banned the use of lead as an additive, gasoline and emissions from automobiles contained lead for more than 60 years. During that period of time approximately 50 % of lead (Pb) released from motor vehicles was deposited within 100 ft of the roadway. Lead concentration decreases with distance from the road and increases with traffic volume, particularly along heavily traveled highways. Although gasoline no longer contains lead, accumulations persist adjacent to existing older roadways.

3.9.2 Lead

The Unites States Environmental Protection Agency (EPA) recognizes that Aerially Deposited Lead (ADL) may be encountered near-surface soils within 50 feet of major highways due to lead additives in commercially available gasoline, the use of which is now banned. Accordingly, new roadways constructed following the elimination of lead gasoline should not require screening for ADL.

Samples are collected to determine the presence for ADL at projects that have a Peak Month or Average Annual Daily Traffic (AADT) volume of 10,000 vehicles or greater. To date, all projects sampled with AADT above 10,000 vehicles have contained hazardous levels of ADL.

The preferred alternative (D13 North Modified) is located in a rural area of no concern for ADL, where sampling and analysis will not be performed. However, the project connects into two segments of existing SR 65 and may require ADL sampling and analysis at those two connections.

Based on 1985 traffic volume data from Caltrans Traffic Census Department, the Peak Month Volume at the south connection of the project near Industrial Avenue is 11,600 vehicles, and the average annual daily traffic (AADT) is 10, 500 vehicles (Table 3-30)

Table 3-30 Aerially Deposited Lead 1985 Traffic Volume Data

Location	Average Annual Daily Traffic (AADT)	Peak Month
PM R12.2 North of Industrial Ave.	10,500	11,600
PM 24.26 Placer County Line	8,000	8,800

Hazardous Waste Storage Sites

The preferred alternative (D13 N-Mod) requires the acquisition of several parcels that were evaluated for hazardous waste. A hazardous waste evaluation consisted of an Updated Initial Site Assessment (ISA), a record search dated January 5, 2004 and the updated report of the Initial Site Assessment performed by Professional Service Industries (PSI) dated February 26, 1999. With the exception of two parcels, no

hazardous waste storage sites or releases are known to exist within the project corridor. Access was denied to the parcels in question. Therefore, clean-up costs are estimated between $0 and $1 million.

3.10 VISUAL IMPACTS

Improvement of the visual quality of highways, as with many aspects of the environment, has been a matter of increasing concern in recent years. The Federal-Aid Highway Act of 1968 states that "a special effort should be made to preserve the natural beauty of the countryside." Similarly, NEPA states, "it is the continuous responsibility… to assure for all Americans safe, healthful, productive, aesthetically and culturally pleasing surroundings."

A Visual Impact Assessment (VIA) Report was completed to comply with this policy in July 1994, and is available for review at the Department of Transportation District 3, Sacramento office, 2389 Gateway Oaks Dr., Sacramento, CA. The following information was summarized from that report.

3.10.1 Definition of the Visual Assessment Study Area

Definition of the Study Area and all identification, inventory and evaluation of visual resources was accomplished by field inspection, including photography and visual surveys of the site. The Study Area's visual analysis includes that area from 0 to 4.8 km (0-3 mi) from the location of all alignments, and contains both natural elements and built environments. The majorities of these areas are undeveloped and comprise a rural visual environment. A smaller area is influenced by urban development around Lincoln and Sheridan.

3.10.2 General Description of Existing Landscape

Terrain within the Study Area is generally flat with rolling grasslands and elevations range from 26 to 61 m (85 to 200 ft). Open grasslands dominate the area. Perennial and intermittent creeks lined with riparian vegetation (including oak stands) traverse from east to west. The general region is rural with vistas of wide, open, non-native grasslands dotted with seasonal wetlands and occasional oak stands. Rural areas tend to be agricultural with individual homes and ranches, whereas Lincoln and Sheridan have developed residential and industrial areas.

3.10.3 Visual Assessment Units

To provide a focused analysis, the Study Area is divided into three distinct visual assessment units, each approximately 6.4 km (4 mi) long (see Figure 3-20). The South Lincoln visual assessment unit, from Orchard Creek to Auburn Ravine, is rural but

planned for mixed-use development (see Figure 3-21). The Lincoln visual assessment unit ranges from Auburn Ravine to Coon Creek, including the City of Lincoln and area to the west. This unit has the majority of existing and proposed development (see Figure 3-22). The third unit is the Sheridan visual assessment unit, which contains rural areas from Coon Creek to the Bear River, just north of Sheridan. Extensive development is not planned for this unit (see Figure 3-23). These three visual assessment units provide the basis for assessing impacts of each proposed alignment. To provide an overview of the existing visual landscape, and draw attention to any outstanding visual resources, these three visual units are described briefly below.

Similarities are common throughout all three visual assessment units. Due to relatively flat terrain, the scale of the project area seems huge. Wide, expansive views and the almost never-ending sky panorama makes trees, buildings, vehicles and other elements on the ground seem relatively tiny. Due to this large scale, there is a lack of variation. This continuous thread of non-dramatic visual elements occasionally appears monotonous. Non-native grassland prevails and basic visual elements, such as creeks and related trees, flatlands and rolling foothills, repeat throughout the project area, leading to a lack of drama and variety. However, in scattered locations, glimpses of the Sierra Nevada and the Sutter Buttes can be seen in the background.

South Lincoln Visual Assessment Unit

Terrain east of the Lincoln Bypass' southerly connection with existing SR 65 consists of rolling hills. Middle ground views are prevalent, such as Telegraph Hill to the east. The most dominant foothill is located adjacent to Orchard Creek, with an elevation of 119 m (390 ft). Even though it is not visible to northbound travelers, southbound travelers have outstanding views of this undeveloped, pristine foothill. Background views, including crests of the Sierra Nevada, can be seen from a few locations. Trees associated with Auburn Ravine are visible on the horizon to the north and west. Remaining terrain is generally flat with occasional depressions around Orchard Creek. Since Orchard Creek does not support a heavily tree-lined riparian habitat, views extend through it to the southern horizon line. The southern horizon line on clear days is not visually appealing. Radio towers provide stark vertical accents against horizontal grasslands. The Placer County Sanitary Landfill with its huge towering mounds of refuse will be visible to southbound travelers and detracts from the visual quality. Equally obtrusive is the Ultrapower Rocklin Biomass Power Plant. Tall machinery and towering smokestacks provide man-made dominance over the surrounding middle-ground rural agricultural areas. At night, this well-lit machinery and processing equipment provide a mass of light, accenting the horizon. This same area has many high intensity industrial

developments such as auto wreckers, junkyards, silica plants, concrete mix distributors, and transport truck storage yards that lessen the visual quality and character.

Ingram Slough, a freshwater marsh, passes through the South Lincoln visual assessment unit and contains occasional tall trees and grasses. There are two small areas of oak woodland near Auburn Ravine with less than 4 ha (10 ac) each; one is between Auburn Ravine and Moore Road, and the other parallels the southern side of Moore Road. Great valley oak riparian forest follows Auburn Ravine its entire length within this visual unit. Vernal pools are prevalent throughout non-native grasslands and agricultural land.

This visual unit also contains several home sites and a large ranch. Home sites are primarily located adjacent to Moore Road. Cattle are present throughout the area. Horse ranches and extensive rice fields are scattered throughout the southwestern side of this visual assessment unit. However, future development within the south Lincoln visual assessment unit will change the visual character dramatically. Recent developments include Three-D, Lincoln Crossing, Twelve Bridges and Sterling Pointe.

Viewer Quality

Overall quality of the existing visual setting for the South Lincoln visual assessment unit is good. Topography offers some vertical relief by contrasting rolling hills with flat areas. Vegetative and wetland features are vivid in wet months of the year. Home sites are sparse and do not disrupt the integrity of the setting. General visual effects of ranches can improve a visual environment.

Lincoln Visual Assessment Unit

This area contains the majority of existing development, including the City of Lincoln and the area west of Lincoln. Existing developments include Lincoln Airpark and Joiner Ranch specific plan areas, two rural subdivisions near Nelson Lane, and the Lincoln Municipal Airport along with its surrounding commercial industries. In addition, much of the previously non-developed area in the Lincoln visual assessment unit is slated for development or already developed.

Auburn Ravine and its great valley oak riparian forest flow from east to west. Vernal pools are visible in certain locations. The Lincoln Airpark Specific Plan Area and Lakeside Drive is visible to the left. The lumber processing plant and multiple clay pits are located just outside of Lincoln proper.

Viewer Quality

Overall quality of the Lincoln visual assessment unit is more interesting than the South Lincoln visual assessment unit due to the larger diversity of natural elements, such

as creeks and vernal pools. Expansive and unified views throughout agricultural areas provide harmony. Topography creates interest while ranches provide focal points. Occasional tree farms provide thick, colorful vertical elements, which contrast with the plainness of the surrounding agricultural uses. The long, large berms of the wastewater treatment plant are visible east of Nelson Drive. These slopes range up to fifteen feet high and block views to the east of the City of Lincoln and the riparian corridor along Markham Ravine. Industrial complexes around the Lincoln Municipal Airport are unsightly, unattractive and ill proportioned to the surrounding rural atmosphere. In addition, the clay pits near existing SR 65 disrupt the intactness and unity of this area. Clay pits are the largest visual encroachments within the Lincoln visual assessment unit.

Sheridan Visual Assessment Unit

The Sheridan visual assessment unit is approximately 8 km (5 mi) long, extending from Coon Creek on the south to the Bear River on the north. This area includes the rural community of Sheridan, which has no plans for development in the near future.

Ranches are sparsely located along rural roads. Curving, winding tributaries, vernal pools and vast acreage of pheasant clubs dominate these expansive views. The large stand of trees is visible along the Bear River.

Terrain in the Sheridan visual assessment unit is the most varied and exciting of all the visual assessment units. A few low-lying hills exist with elevation differences ranging from 8-16 m (25-50 ft). One unique, mile-wide rolling foothill with five saddles is located between Dalby and Riosa Roads. This particular area has the most complete panoramic view of the entire project area, including views of the Sutter Buttes, Sierra Nevada and the Central Valley. Great valley riparian oak forest provides visual corridors for Coon Creek on the south and the Bear River on the north. The majority of land in the Sheridan visual assessment unit is agricultural, especially on the east side of Dowd Road. To the west of Dowd Road is non-native grassland.

Viewer Quality

The Sheridan visual assessment unit has the best visual setting due to its mixture and variety of appealing components. The overall rural feeling of quaint ranches, large spreads of expansive land, creek corridors, elevation changes and panoramic views help define the excellence of this visual experience. Due to the lack of existing and future planned development, this area may remain free of encroaching development. Panoramic views from the top of the unique mile-wide foothill between Dalby and Riosa Roads exhibit the compositional harmony and visual coherence of the Sheridan visual assessment unit.

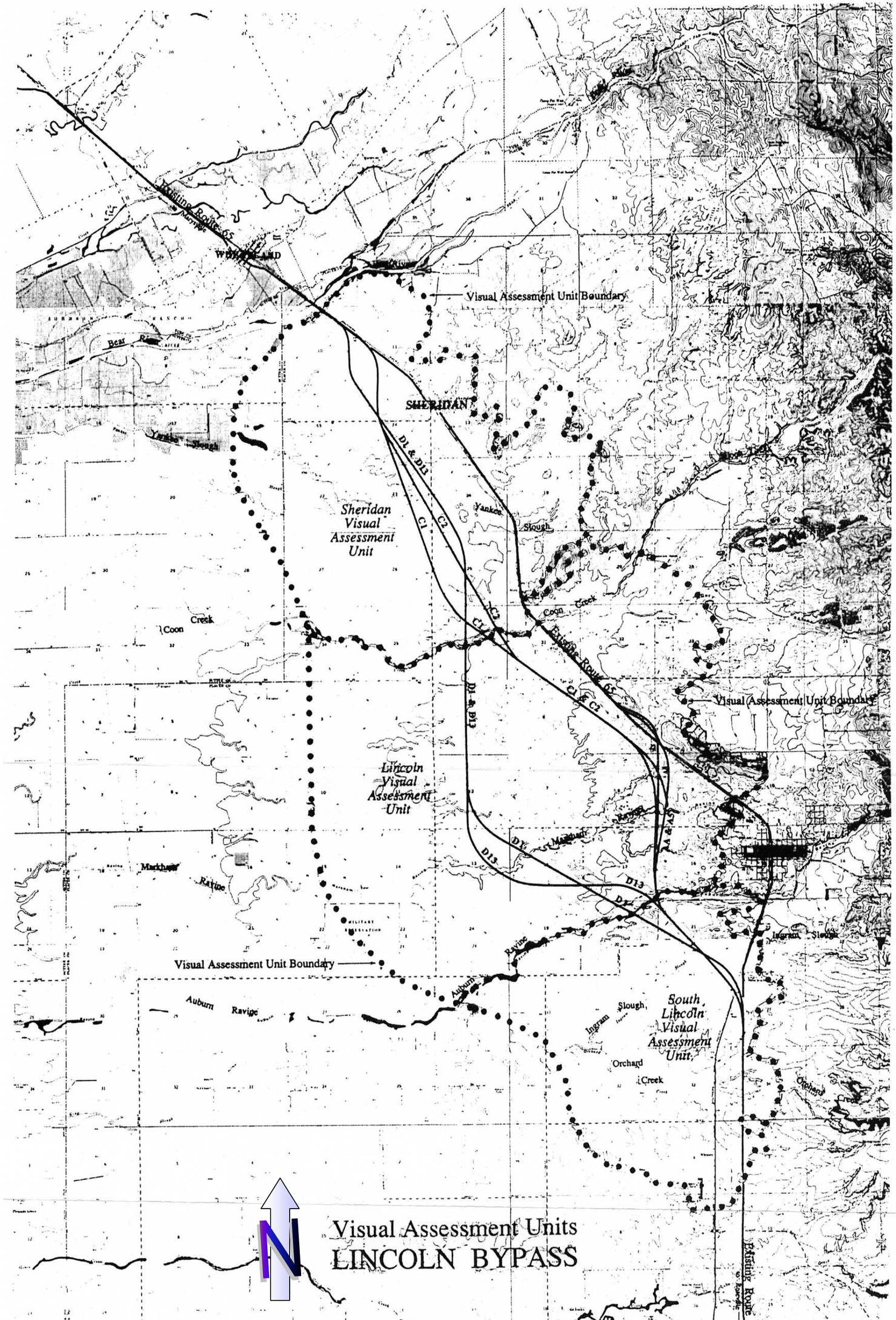


Figure 3-20

Visual Assessment Units

Figure 3-21 South Lincoln Visual Assessment Unit



Figure 3-22 Lincoln Visual Assessment Unit



Figure 3-23 Sheridan Visual Assessment Unit



4 ENVIRONMENTAL CONSEQUENCES

This chapter describes the probable impacts of each alternative. The chapter is divided by type of resource affected such as geology, air quality, noise impacts, water quality, natural environment, cultural resources and visual impacts. The following technical studies from which these sections are derived are incorporated by reference into this Final Environmental Impact Report/Statement and are available for viewing at the Department of Transportation, District 3, Sacramento Office, 2389 Gateway Oaks Drive, Sacramento.

Air Quality Report (amended 5/2006)
Noise Impact Report
Location Hydraulic Study
Water Quality Report
Visual Impact Assessment
Initial Site Assessment
Initial Site Assessment Update
Revised Alternatives Analysis
Community Impact Assessment
Natural Environment Study
Historic Properties Survey Report
Historic Architecture Survey Report
Finding of No Effect
Traffic Studies
Final Relocation Impact Report

In some cases, such as with air quality and geography, impacts to the resource will be looked at in general terms rather than by specific alternatives. For resources where impacts vary by alternative, then the impacts are evaluated by alternative.

4.1 SOCIOECONOMIC IMPACTS

4.1.1 Land Use Impacts

Land use impacts are evaluated in terms of consistency of the proposed project alternatives with local plans. The City of Lincoln's General Plan has a policy to pursue the construction of a SR 65 Bypass. The original proposed SR 65 Bypass, adopted by the California Legislature in 1964, was intended to be located west of the existing SR 65 alignment. In the intervening years, since no right-of-way had been purchased, development has precluded the viability of the adopted alignment as the proposed route. The circulation element of Lincoln's General Plan, updated in 1988, designated the future location of the Bypass along the AC corridor between Joiner Parkway and the Lincoln Airport. Since that time, the updated Circulation Element (1994) has designated the D13 alternative as the location of the future bypass. In addition, the City is currently updating the General Plan and will designate the D13 North Modified as the preferred alternative.

The following sections describe the potential effects of the project by subject.

Agricultural Impacts

Agricultural land is the dominant community type in the Study Area, with approximately 42.4 percent of the Study Area classified as agricultural land in the Natural Environment Study (NES). The impacts to agricultural land vary from 51 ha (126 ac) for the AAC2 alternative up to 102.11 ha (252.3 ac) for the D13 alternative.

All of the alternatives will impact prime, unique, statewide, and locally important farmlands. Completion of the Farmland Impact Rating (See Chapter 7, Comments and Coordination and Appendix D, Farmland Impact Rating Form) showed that alternatives, A5C1 and AAC2 had point values of 158, and 157. The D1 and D13 point values were 162 and 161, respectively. The D13 South and North Modified Alternatives values were both 147.

Table 4-1 shows the amount of agricultural land in the study area. The D13 North Modified Alternative impacts 234 acres of various agricultural land. This represents 0.01 percent of the total area within a 4-mile buffer around project, which would not be a significant impact under CEQA.

Table 4-1 Agriculture in Study Area

Use or type of land	Farmland within Four-mile Areas	% Of Total Four-mile Areas
Grazing Land	3,356 acres	12.6%
Farmland of Local Importance	12,534 acres	46.9%
Prime farmland	3,398 acres	12.7%
Farmland of Statewide Importance	833 acres	3.1%
Unique Farmland	2,706 acres	10.1%
Other	1,441 acres	5.4%
Total Farmland and Other	24,268 acres	100.0%
Williamson Act Parcels	6,638 parcels	86.4%
Non-Renewed Williamson Act	1,042 parcels	13.6%
Total Parcels in Four-mile Areaa	7,680 parcels	100.0%

Residential

The Placer County general plan has a policy to promote the concentration of new residential development in higher-density residential areas located along major transportation corridors and transit routes. Although alternatives D1 and D13 North and South Modified would have rerouted the SR 65 alignment away from both Lincoln and Sheridan and alternatives A5C1 and AAC2 would have rerouted SR 65 away from Sheridan, the preferred alignment, D13 North Modified, runs relatively parallel to the two towns' western borders.

The City of Lincoln's goal and supporting policies generally address the need to ensure sufficient residential development to meet community needs while discouraging

leapfrog or premature development. By implementing the use of planned development projects, Lincoln has ensured that development would proceed with the needs of the community. The recent population growth in the Sacramento region has generated a demand for housing in the surrounding areas. According to the California Dept. of Finance and SACOG, there are currently 9,964 housing units in Lincoln with 24,964 projected for the year 2025. Lincoln has begun to accommodate this housing and has recently constructed and permitted several developments within the City. The City of Lincoln is also proposing in their draft 2050 General Plan to expand the sphere of influence out past Dowd Road to the west. The proposed project does not have an impact on Lincolns current housing situation.

Similar to Lincoln, Sheridan has also adopted the goal to provide adequate housing for its residents although currently it is under a moratorium on new construction due to their inability to meet sewage and water needs. None of the alternatives would impact Sheridan's current housing situation.

Industrial

Placer County, Lincoln and Sheridan have all adopted the goal to designate adequate land for industrial development to meet the present and future needs of all Placer County residents. There will not be any industrial units displaced by the project.

Despite Lincoln's historically modest industrial development, it appears that as new nationally recognized industries move into the Roseville/Rocklin area, Lincoln has also been receiving attention as a market prime for industrial expansion. With approximately 605 ha (1,494 ac) of vacant industrial land available there will not likely be any impacts caused by the construction of the Lincoln Bypass to industrial land uses currently defined in the general plan. Moreover, construction of the Lincoln Bypass will improve travel conditions along SR 65 that will meet the demands of anticipated industrial growth.

Commercial

Similar to the industrial land use goal, commercial land use goals and policies for Placer County, Lincoln and Sheridan are to designate adequate land for commercial development to meet the present and future needs of all Placer County residents. Five of the nine mixed-use planned developments have set aside commercial land totaling 107.6 ha (266 ac).

The Draft Relocation Impact Report (DRIR) identified two businesses that would be impacted by the D1 and D13 alternatives; a well drilling business and a duck club, each of which have one to three employees. The A5C1 and AAC2 alternatives would displace the duck club.

The final Relocation Impact Report (FRIR) for the preferred alternative (D13 North Modified) has identified three businesses that would be impacted: a well drilling business, nursery and duck club.

4.1.2 Growth Inducement

Growth inducement is also discussed in the Indirect and Cumulative Impact Analysis, which can be found in Appendix I. The analysis includes information on land use, general plans, city and county policies on growth, current zoning and possible changes that can be reasonably foreseen to impact growth.

The following section addresses the direct or indirect ways in which the project may foster economic or population growth or the construction of additional housing in the surrounding area. Factors that influence growth include the cost of land, local government plans and policies, articulated public attitudes, cost and labor pool, land use and terrain, commute time, access, infrastructure and facility constraints. The effect of transportation improvements on growth is not easy to measure since it is only one element of the many factors influencing growth. Generally, Caltrans responds to a need that usually shows up as congestion or an increase in accidents in an area. Therefore, Caltrans does not directly cause growth- growth is already happening, causing congestion and decreased safety, which causes Caltrans to propose a solution to the congestion or safety issue.

That being said; as one of the factors that influence growth, transportation projects can have an indirect effect on growth. Studies have shown that development will likely occur when new roads allow access to land previously inaccessible and the area is prime for development. A new roadway may create additional market pressure for growth because one constraint for development has been lifted. However, whether or not the project will induce unplanned growth depends on political, physical and socioeconomic constraints as well. The proposed project is intended to meet the existing and/or projected traffic demand based upon the current local land use plans. At the present time, other constraints limiting growth are in place such as zoning and General Plan elements that express a desire to retain the agricultural element in the project area.

The City of Lincoln has been one of the fastest growing areas in the State and is accommodating this growth with their plans and policies. This growth has occurred regardless of the transportation infrastructure not keeping pace with the need. Factors that have contributed to the growth occurring in this area are lower housing prices, proximity to job centers, the rural quality of the town and a positive economic climate.

The following paragraphs contain a summary of the factors that can influence growth in an area. With the exception of facility constraints, the decision making involved is by the local agencies, and not within Caltrans purview.

Cost of Land

Lincoln is included in SACOG's list of fastest growing communities that also includes Rancho Cordova, Vineyard, Cosumnes and West Sacramento. The City of Lincoln is projected to have a population of 33,211 in 2025, up from 26,661 in the year 2005 (http://sacog.org/demographics/projections). The fastest growing housing markets in the Sacramento metro region are in the communities of Laguna, Rancho Cordova, Vineyard, Lincoln and Roseville. According to the California Dept. of Finance and SACOG, there are currently 9,964 housing units in Lincoln with 24,964 projected for the year 2025. The City of Lincoln's housing prices has been consistently lower than the surrounding communities of Rocklin, Roseville and Auburn, which has been a factor for people choosing to locate in Lincoln.

Although Placer County, as a whole, has land values higher than other counties in the region, the higher cost of land would not likely create a hindrance to unplanned development. Furthermore, accessibility to undeveloped land could cause minor shifts of economic development that would have otherwise have been built elsewhere in the same region. Nevertheless, development of the undeveloped agricultural areas would also rely on any existing farmland contracts and local policies set by governmental officials.

Local government plans and policies

Caltrans projects are designed to accommodate current and future traffic demand in accordance with local plans. Decision-makers in the City of Lincoln believe that growth and the accompanying increase in traffic is inevitable, and has developed strategies to manage it so Lincoln may retain the qualities of life that its citizens desire.

Local approvals for mixed-use developments up to this point have not been contingent upon the construction of the Lincoln Bypass. It is possible that portions of the Lincoln Bypass could be funded by approved and built developments; consequently, the Bypass would be a response to the growth planned by the City of Lincoln.

The City of Lincoln is currently in the process of updating its General Plan to designate areas where development will occur. The City of Lincoln is considering annexing a portion of the county located to the west of Lincoln and along the preferred alignment. In the 1988 update of the General Plan the City determined that the adoption of the proposed Land Use Element would cause significant growth inducing impacts, resulting in levels of population and urban development in excess of that which would otherwise occur within the existing city limits under the former General Plan. The

distribution and concentration of population would also be increased by adoption of the Land Use Element. These impacts were found to be both significant and un-mitigatible.

Placer County has placed a moratorium on development in the rural area northwest of Lincoln and considers Lincoln's provision of an urban level of service adjacent to agricultural lands to have the likely effect of placing development pressures on these rural areas. The "Build" alternatives could contribute to development pressures on the agricultural lands northwest of Lincoln by way of providing better accessibility than is provided by the current circulation system. By contributing to the necessary infrastructure, A5C2, AAC1, D1, D13, D13 South Modified and D13 North Modified, could indirectly influence the location, distribution and density of future development in both Lincoln and rural areas surrounding Lincoln's sphere of influence.

Portions of agricultural land adjacent to the bypass are owned by investors and hence are more likely to develop if conditions within the City allow for such development. The majorities of investors are located within the City of Lincoln or are within the proposed future annexation of the City. The remaining investors are within close proximity to the bypass but are in areas currently zoned agricultural land and not within the City or the proposed annexation. Development could potentially occur as the City of Lincoln grows and if zoning is changed in the area. Nevertheless, local officials ultimately influence changes in land use distribution through amending general plans and approval of development permits.

Land Use and Terrain

Lincoln's existing land use controls involving design and property development standards have not been a constraint to area development. Even with the "No Build" alternative, significant growth in the City of Lincoln is projected. Regardless of the alternative chosen, any growth beyond the City of Lincoln would require the approval of Placer County officials and/or additional area to be adopted within Lincoln's sphere of influence.

The Study Area's prominent agricultural influence is partly due to the abundance of relatively level ground with a variety of soil types. Historically, developing areas have had few natural obstacles to impede growth and development with the exception of some prominent ravines. Rocklin and Roseville located to the south, Sheridan to the north and the foothills to the east direct this growth naturally to the west towards the airport. At this time, the area west of the bypass is zoned as agricultural. Development projects must coordinate with the respective responsible resource agencies to comply with environmental laws and regulations. Although compliance with environmental laws and

regulations may be lengthy and delay projects, development projects in the Study Area generally have few other barriers.

Articulated Public Attitudes

The concern over development pressure that will be occurring over the next 20 years and the possibility of losing County natural resources prompted the creation of Placer Legacy by Placer County. Placer Legacy was established in 1998, using three working groups to provide input from a variety of stakeholders. These groups consisted of a Citizens Advisory Committee, an Interagency Working Group and a Scientific Working Group. Placer Legacy has identified County trends, resource conflicts and possible strategies to address growth pressures. Strategies currently being pursued are land acquisitions and conservation easements, agency coordination, education and incentives. In November of 2002, Placer Legacy was actively negotiating purchases with property owners for approximately 526 ha (1,300 ac) of conservation easements west and north of the proposed Lincoln Bypass to limit growth-inducing impacts. That number has risen to 834 ha (2,060 ac) of land protected in the Sierra Nevada, Sierra Nevada foothills and Central Valley. In addition, the Placer Legacy is involved in the Miners Ravine Restoration project at the Miners Ravine Reserve site in Granite Bay, the Auburn Ravine/Coon Creek Ecosystem Restoration Plan and the American River Fuel Load Reduction Plan as well as engaging in ongoing coordination with the Agricultural Commissioner's Office on matters related to agricultural conservation.

Placer Legacy's funding comes from a variety of sources including grants, general funds, mitigation funds, donations, acquisition funds, resource agencies and other miscellaneous sources. Voters defeated a ¼ cent sales tax proposed to provide a secure source of funding for Placer Legacy. However, the County and Placer Legacy are initiating a public outreach program in order to promote the Placer Legacy in the community with the goal of re-introducing the measure to the voters.

Although grass roots efforts are forming to address growth issues in the area, the majority of the residents are in favor of the Bypass due to the increased congestion occurring along the existing SR 65 through the middle of the City. Based on the comments from the Open House held for Lincoln Bypass on Dec 18, 2001, the majority of the Lincoln residents in attendance were in support of the D13 North Modified Alternative.

Sheridan is a rural community beyond Lincoln's sphere of influence that will be affected by all the alternatives by way of bypassing the town. However, Sheridan's economic stability is not reliant on the existing alignment. The surrounding farming community, albeit small, also represents the rural community beyond Lincoln and will be

impacted by all the alternatives with the loss of farmland. Letters in protest of the alternatives have been received from some of the affected landowners because these alignments will impact their land. Many of the smaller farms have been passed on from generation to generation and are dependent on farming the land for their livelihood. Not only would the segregation of their land impact their normal farming activities, encroachment of potential urban development in the area would disrupt their lifestyle.

Cost and Labor Pool

Projections from SACOG's Final Interim Metropolitan Transportation Plan 2005/2007 show that the fastest growing employment markets will be in Roseville, Downtown Sacramento, West Sacramento, Rancho Cordova and Laguna, near Elk Grove. Much of the job growth will come in office and manufacturing jobs in these suburban areas. These suburban job centers will increase the demand upon transportation infrastructure and will place additional pressure on interregional travel options. Lincoln's proximity to Roseville and their own desire to capture retail and other types of employment will increase the demand on the housing stock and increase the pressure to develop further.

The Lincoln Bypass has been conceived to facilitate the planned growth of Lincoln and the anticipated expansion of the local workforce while providing for inter-regional travel. However, the City of Lincoln's plans and policies do not address the growth impacts from a growing workforce on the rural areas outside of the City's Sphere of Influence.

Commute Time

Travel time between geographic points may influence the redistribution of economic development and population. The current SR 65 alignment serves both local traffic and through traffic, whereas, the Bypass would divert the through traffic from the core of Lincoln where delays occur due to traffic signals and cross traffic. With the "no build" alternative, future planned development in Lincoln would strain the capacity for the existing roadway system to move traffic efficiently. Therefore, each build alternative will ease traffic congestion on the local system by diverting traffic from Lincoln's downtown business district. As Lincoln's planned developments are constructed, the bypass could also serve as an alternative route between Lincoln's northwestern and southern areas. However, the bypass will also provide direct travel access to undeveloped agricultural lands north and west of Lincoln. Consequently, increased access to undeveloped lands may attract a greater number of commuters willing to sacrifice the shorter commutes to live in rural areas.

Access

Access to the transportation system is one of several important factors affecting the development of land. In order to provide for expected growth in Lincoln, ultimately interchanges will be constructed at Industrial Avenue, Nelson Lane, Wise Road and Riosa Road. (See Traffic Summary, Chapter 1, section 3). The Riosa Road interchange would be necessary to serve as access to the Sheridan community. The Wise Road interchange would potentially serve as access for the rural community between Lincoln and Sheridan as well as Lincoln's northern region and would provide access to trucks in the area. In addition, the interchange at Wise Road would allow access to the airport, which the City is planning to expand. Although access to a major transportation system is critical to farm communities, a major interchange at Wise Road could add development pressures in this area.

The potential for development pressure led Caltrans to evaluate options that would relieve some of the pressure. Working in coordination with the regulatory agencies, Placer County and the City of Lincoln, a strategy to purchase conservation easements in the vicinity of the Coon Creek Watershed and Wise Road was developed. This conservation easement is now a part of the project description per the NEPA/404 MOU process.

Infrastructure

Lincoln is attempting to direct future growth in an orderly manner by building primarily around the downtown area and projecting outward to avoid leapfrog development that could result in inadequate infrastructure. Proposed developments in Lincoln will be reviewed by the city to determine if the existing developed areas are adequate or if urban reserves would be locations that are more appropriate. The Lincoln Public Facilities Element, as part of the General Plan, has mapped out the services and physical improvements that would be necessary for transportation, parks and recreation, schools, sewage treatment, police and fire, and city government for future planned developments and would be funded through developer's fees.

The City of Lincoln has built a wastewater treatment and reclamation facility off Moore and Fiddyment Road. The old wastewater treatment facility, currently located west of the City of Lincoln near Nicolaus Road and Nelson Lane, will be dismantled. The new facility will serve customers currently using the old wastewater treatment plant as well as the residents of the new subdivisions. Other minor infrastructure improvements include well sites for back-up water and peak demand purposes.

Many of the local road improvements are being planned to accommodate the expected growth under the new general plan. Local officials have indicated that many

local roads are currently being heavily used to bypass the congestion in the city. In the unincorporated areas, the lack of urban services such as water and sewer treatment will likely deter unplanned development.

4.1.3 Social Impacts

Title VI and Environmental Justice

Executive Order 12898, *Federal Actions to Address Environmental Justice (EJ) in Minority and Low-Income Populations*, signed by the President on February 11, 1994, directs Federal agencies to take the appropriate and necessary steps to identify and address disproportionately high and negative effects of Federal projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law. No minority or low income populations have been identified that would be negatively impacted by the proposed project as determined above. The proposed project will not result in disproportionate impacts to minority or low income populations.

It is the policy of the California Department of Transportation, in accordance with the Civil Rights Act of 1964, the Civil Rights Restoration Act of 1987, 49 CFR 21 and related statutes and regulations that no person in the state of California shall, on the grounds of race, color, sex, age, national origin, religion, or disabling condition, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity administered by the Department.

Section 3.1.5 describes the demographics of the project area. Some minorities, elderly and physically challenged persons may potentially be relocated depending on the alternative ultimately chosen. However, considering the relatively low total numbers of people that may be affected, the overall impact to these groups will be minimal.

Census 2000 shows the following blocks as having a high percentage of minorities: 213.03, 213.04 and 214.02. This area is located in close proximity to the existing alignment but is not expected to incur impacts from any of the proposed alignments.

Census tract 214.02 was identified to have the highest population of persons below poverty level, consisting of 15.8 % of the population in the census tract. Since the 1990 census data has been collected, a portion of census tract 214 has been planned for new development. Since it is assumed that low-income people will not be buying these higher priced new homes, it is predicted that the mean percentage of low-income people will decrease. The project will not have a disproportionate impact on minorities or low-income families. This project will also not discriminate, exclude from participation or deny benefits to any person on the grounds of race, color, sex, age, national origin, religion, or disabling condition.

Community Cohesion

Table 4-2 shows that all of the proposed alternatives would impact residential neighborhoods. The alternatives AAC2 and A5C1 would have had the greatest impact on people living in single-family residences with direct impacts amounting to 461 and 469 respectively. The considerable amount of displacements expected for alternatives AAC2 and A5C1 would largely be due to the recently planned and constructed developments.

Table 4-2 Residential Displacement Properties for Each Alternative

Type of Residence	A5C1	AAC2	D1	D13	D13 North Modified
Single Family	458	466	14	6	4
Mobile Home	3	3	6	4	4

The AC alternatives have a much greater community impact than the D alternatives. During the ten years between concurrence on the range of alternatives and the present, growth in Lincoln has skyrocketed. Several developments have been approved or are already built within the AC alignment. A recent count of residences affected by the project shows that the A5C1 alternative would have impacts to approximately 461 residents and the AAC2 alternative would have impacted 469 residents. The AC alternatives would have split established communities as well as recently constructed communities such as the Foskett Ranch and run adjacent to a proposed elementary school, separating it from the communities it would serve on the other side of the highway. Purchasing right-of-way and relocation efforts would have caused the project costs to escalate by at least $16,000,000.

Comments voiced during open houses from the public in the existing community along the AC alternatives have voiced a passion towards their choice in moving to a smaller, more rural community that allows for a more intimate atmosphere among neighbors. The communities that would have been impacted by the AC alternatives belong to neighborhood watch programs. A neighborhood watch program is an example of a group that is committed to a community and demonstrates cohesiveness.

An alternative that would separate the community, pose safety problems, place a barrier to mobility between neighborhoods and increase noise to the level that would require soundwalls, may have an impact to the "intimate" feel that has attracted these residents to Lincoln.

Long-term effects on property values can occur when a transportation project cuts through existing communities. Many factors are considered when determining the extent of the impact on property values of a freeway or major highway such as the character of the neighborhood, supply and demand of homes, community services and other socioeconomic factors. Generally, properties abutting freeways do not appreciate in price and in some cases are priced 0.5% to 16% lower than properties further removed from the highways.

CEQA

Community impacts are often hard to measure due to the lack of analytical information. There are no standards or formulas that can be used to compute short and long-term impacts when an alternative divides a community and determining significance is often subjective. The CEQA guidelines provide some questions to ask when determining whether a project impact is significant. The degree to which the question can be answered affirmatively dictates the level of significance.

Will the project:

- Disrupt or negatively affect a property of cultural significance to a community or ethnic social group,
- Induce substantial growth or concentration of population,
- Cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system,
- Displace a large number of people,
- Disrupt or divide the physical arrangement of an established community;
- Conflict with established recreational, educational, religious or scientific uses of the area,
- Convert prime agricultural land to nonagricultural use or impair the agricultural productivity of prime agricultural land, or
- Interfere with emergency response plans or emergency evacuation plans.

In determining impacts to community cohesion and effects on property values, certain characteristics may provide insight as to whether or not a significant effect will occur. For example, a community is considered cohesive if it is determined that the residents have a "sense of belonging," whether they have a level of commitment to the residents of the community and neighbors, groups and institutions. Significant impact need not be determined by the length of time a community has been in existence but may be determined by the level of shared activities, ethnic group clusters and personal contact in addition to other social factors.

Although an exact determination cannot be made on the long-term impacts of the property values, it can be reasonably stated that since the AC alternatives and the D1 alternative divides existing communities, this may pose long-term socioeconomic impacts, which would change the dynamics of the existing community and could lead to a decrease in desirability of the neighborhoods. Therefore, the AC alternative would pose a significant effect under CEQA.

In contrast, the D13 South and North Modified alternative would not divide any existing communities. Although the D13 South and North Modified alternative would result in impacts to other resources, as would the AC alternative and the D 1 alternative, the overall impacts to resources and socioeconomic factors are less damaging when compared with the D 13 South and North Modified alternatives. The D 13 North Modified would not have a significant impact under CEQA.

Access and Circulation

The construction of the bypass will limit the amount of access points from cross streets. All of the alignments will create a barrier from central Lincoln to the surrounding planned developments and the outlying areas within the study area. However, access will be provided by constructing overpasses, interchanges or intersections at existing or proposed major roads. Table 4-3 outlines the overpasses and interchanges proposed for each alignment. Furthermore, the bypass will improve operations by bypassing the railroad crossing in Sheridan.

If the project were not built, congestion in the City of Lincoln would continue to worsen. Additional traffic from growth associated with development along the study corridor would create substantial delays and long queues for motorists trying to utilize the existing highway system. Circulation within the city would be difficult. Operational improvements would continue, including additional signals or widening for turn lanes for added capacity in some areas. However, additional signals would cause further delay and congestion to what is already being experienced.

Table 4-3 Overpasses and Interchanges at Local Streets

Cross Street	Alternatives					
	A5/C1	**AA/C2**	**D1**	**D13**	**D13 South Modified**	**D13 North Modified**
Industrial Ave.	I/C	I/C	I/C	I/C	I/C	I/C
Ferrari Ranch Rd.	O/C or U/C	O/C or U/C	O/C or U/C	U/C	U/C	U/C
Moore Road	CDS	CDS	CDS	CDS	CDS	CDS
Nelson Lane	N/A	N/A	I/C	At Grade Intersection (I/C planned by City)	At Grade Intersection (I/C planned by City)	At Grade Intersection (I/C planned by City)
Nicolaus Road	I/C	I/C	O/C	O/C	O/C	O/C
Wise Road	I/C	I/C	I/C	I/C	I/C	I/C
Dowd Road	O/C or CDS + FR	O/C or CDS + FR	O/C or CDS + FR	O/C or CDS + FR	O/C or CDS + FR	CDS + FR
Dalby Road	CDS	CDS	N/A	N/A	N/A	N/A
Riosa Road	I/C	I/C	I/C	I/C	I/C	I/C

I/C=interchange O/C=overcrossing N/A=not applicable; alignment does not cross road CDS=Cul de Sac FR=Frontage Road
(All alternatives include a partial interchange at Industrial Boulevard and at-grade intersections with right-of-way for future full interchanges)

Parking Impacts

No parking impacts are anticipated with the construction of any of the alignments. In fact, by bypassing the existing alignment through the City of Lincoln it is expected that parking will be easier for shoppers within the City of Lincoln. Furthermore, relinquishment of the existing alignment would also allow the City of Lincoln to reconfigure parking to provide extra spaces if desired.

4.1.4 Relocation Impacts

As shown in Table 4-4 all of the proposed alternatives would have some impact on residential neighborhoods. Alternative AAC2 would have the greatest impact on people living in single-family residences with impacts to housing amounting to 469 homes. Similarly, the A5C1 alignment would also have impacts to 461 residences. The considerable amount of displacements expected for both these alternatives is largely due to the significant amount of planned and newly constructed residential developments that have occurred in these corridors over the last two to three years.

Table 4-4 Residential & Business Displacement Properties for Each Alternative

Type of Residence	Alternative					
	A5C1	**AAC2**	**D1**	**D13**	**D13 S**	**D13 N**
Residences	461	469	20	10	10	8
Businesses	5	2	6	3	1	3
R/W Cost estimate (year 2006 $)	$72.7 million	$46.4 million	$29.4 million	$31.7 million	$31.7 million	$36.0 million*

*Since the selection of the LEDPA, D13 North Modified, a Final Relocation Impact Report has been prepared for only this alternative. The approximate cost of right-of-way is currently estimated at $60 million. Table 4-4 shows the right of way costs at a comparable level of design. Refining design for the D 13 North Modified has resulted in an increase in right of way costs. Since the other alternatives have not been designed to the degree that the D13 North Modified has, it is no longer appropriate to compare right of ways costs.

Although Lincoln's future planned developments expect to add approximately 16,000 additional housing units, the Draft Relocation Impact Report states that the A5C1 and AAC2 alternatives will impact the City of Lincoln's housing stock and may be disruptive to the City's General Plan.

The Department's Relocation Assistance Program, required by Federal and state law, provides each displaced resident with help in finding replacement housing. There are eight residences and three businesses requiring relocation. Of the eight residences, four are single-family residences and four are mobile homes. Payments would include moving expenses and payments to enable displaced residents to obtain comparable decent, safe, and sanitary housing within their financial means. No residential occupant will be displaced unless replacement housing is available. If the mobile homes cannot be relocated at the time of displacement, due to age and condition, the occupants may be eligible for assistance in purchasing either a new mobile home or a conventional single-family residence. With respect to those residential properties involving a partial acquisition, owners of property appraised as having an uneconomic remnant may request relocation assistance. Adequate housing stock is expected to be available for those requiring relocation.

The relocations will be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, and Title VI of the Civil Rights Act of 1964. Title VI prohibits discrimination based on race, color, religion, sex, disabilities, age and national origin in providing services and benefits on Federally assisted projects. The Department's Relocation Assistance Advisory Service can be found in Appendix G.

Both businesses affected by the proposed project are expected to find suitable replacement locations. Business displacement problems can be minimized by way of the Department's' early purchase of business properties and leaseback arrangements. This would allow time for business property relocation and any construction needed while existing facilities are kept in operation. Displaced businesses are eligible for relocation

assistance including payment for moving and possible other expenses. Displaced businesses that are unable to relocate, or are expected to suffer a substantial loss of existing patronage, could be eligible for up to $20,000 "in lieu" payment through the Relocation Assistance Program.

4.1.5 Housing Impacts

The area located along the south side of Nicolaus Road, just west of Joiner Parkway is developing as residential and public (school and community center) uses. This development is adjacent to the location where the A5C1 and AAC2 alignments intersect Nicolaus Road and a possible future interchange may be constructed.

The large amount of displacements from the A5C1, and AAC2 alternatives would impact the City of Lincoln's housing stock, impact the newly built communities and may be disruptive to the City of Lincoln's general plan. The additional impacts to housing from the "AC" alternatives would have also increased the right-of-way costs considerably. The D1 and D13 alternatives are anticipated to have no negative impact on the Lincoln community. All relocations associated with this project would be subject to the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 as amended 1987.

4.1.6 Community Facilities and Services Impacts

Each of the alternatives analyzed, except the "No Build" alternative, would not reduce the accessibility to public services in the Study Area. All the proposed alternatives would reduce response times for emergency vehicles due to the improved circulation expected. All of the alignments would also remove the obstacle of the at-grade railroad crossing at Sheridan. The "No Build" alternative would increase response time due to congestion.

4.1.7 Traffic Impacts

Traffic congestion would be alleviated within the Lincoln city limits by removing inter-regional travelers.

4.1.8 Economic Impacts

Regional Economic Impacts

The estimated tax revenue lost to local government resulting from the right-of-way purchase of the ultimate alternative chosen, including the removal of residences and businesses from the tax base, is expected to be negligible. Revenue losses would be partially offset by the decrease in costs to the city and county associated with providing services to residential properties. In addition, past studies indicate most property values

may increase in those areas near the new facility because of increased access. This will net the city and county additional property tax revenue when the properties resale.

Project construction dollars would generate jobs and income over a two to three year construction period. In the 1980's, FHWA determined that a $1 million investment would directly generate ten on-site, full-time construction jobs. When other jobs are considered as part of the formula, such as off-site, construction related or service industry related jobs, the total number of jobs created amount to approximately 23 for each $1 million investment. It has not been determined how these numbers would translate considering the current economic climate; however, these figures are not expected to change significantly.

Impacts on Local Businesses and Industry

The existing commercial shopping and services area in Lincoln and Sheridan are generally located on and adjacent to SR 65. Some businesses in the Lincoln community have expressed concern that the construction of the Bypass may result in the decline of patronage.

It is difficult to predict the economic impacts of a bypass on businesses that are normally located on the main thoroughfare due to the number of variables affecting the local economy. Some businesses that may be negatively affected by the Bypass include motels, cafés, fast-food restaurants, and gas stations since much of their services are provided to pass through motorists. Although there are several commercial businesses that serve the motoring public, a large segment of the business activity in the downtown Lincoln area cater to local residents. In fact, the rerouting of traffic may result in an increase in sales and income to some businesses as the community members find it more convenient to shop downtown because pedestrian safety is enhanced and more parking is available for local residents.

Since the Bypass is predicated on future development, the downtown business climate should improve due to the increase in the local population growth. Furthermore, the Lincoln Redevelopment Agency has been promoting the concept of developing the downtown business district as "Old Towne." Lincoln's long-range effort to attract tourists and local residents to shop in the central business district is to capitalize on the historic fabric of the area.

The Bypass is likely to enhance the access to and availability of regional commercial centers existing or planned in Roseville. However, the ten-mile distance from Lincoln is currently not a major obstacle. Furthermore, the businesses that local residents would most likely seek in Roseville are generally not available in Lincoln.

Land Use Impacts

After the completion and approval of the environmental document, the CTC will select and adopt a corridor alignment to be reserved for the ultimate construction of the Lincoln Bypass. The Placer County General Plan, the City of Lincoln General Plan and the Sheridan General Plan will be revised, as necessary, to reflect the corridor alignment.

Economic Impacts

Economic impacts to the local economy with the construction of any of the alternatives are minimal. Although a few businesses may experience short-term impacts due to the Lincoln Bypass, long-term impacts are not expected. Furthermore, with the large amount of commercial development anticipated for the area, businesses will have the opportunity to relocate near the new alignment.

4.2 BICYCLE AND PEDESTRIAN IMPACTS

No negative impacts to bicyclists are anticipated with this proposed project. There are no accommodations for bicycles on the Lincoln Bypass; however, the existing SR 65 will remain as a bicycle route.

The diversion of "through" traffic from the downtown business district will likely promote pedestrian circulation from nearby residential areas. The proposed project will have crosswalks and push buttons at all signalized intersections and all pedestrian crossings will be ADA compliant. The Ferrari Ranch undercrossing, to be approved and constructed by the city, and the future interchange will provide a full pedestrian facility. On some portions of Industrial Avenue, sidewalks and ADA compliant ramps are included.

4.3 GEOGRAPHY AND TOPOGRAPHY

None of the proposed alternatives will substantially change the topography within the project area. The proposed bypass will be designed to provide for an all-weather route to ensure safe passage of emergency vehicles and serve as an emergency evacuation route. The minimum roadway profile grade elevation will be 1.43 meters (4.7 ft) above the existing ground elevation. This profile grade will ensure that the proposed bypass will be above potential floodwaters and provide coverage for future drainage features. The drainage features will maintain the existing hydrology of the area to the greatest extent possible.

The soils in the area present no particular problems with construction. The project will be designed to withstand seismic activity that could be expected in the area.

Reclamation of Minerals

A large amount of fill will be required for this project. Locating the fill will be the responsibility of the contractor. Reclaiming minerals from the fill will also be the responsibility of the contractor.

4.4 AIR QUALITY

This section evaluates air quality impacts that could result from the implementation of the proposed project. Air pollutant emissions associated with the construction of the project, such as fugitive dust from grading/site preparation and equipment exhaust could occur over the short-term during construction. Long-term emissions could result from the use of the proposed highway/freeway, primarily from vehicular traffic. The proposed project is not expected to generate additional traffic. Traffic would be rerouted from other area roadways to the proposed SR 65. Regional traffic trips would remain similar. Therefore, no new long-term regional emissions would result from implementation of the proposed project.

The proposed bypass route will improve traffic movement in the general vicinity, thereby lowering the concentration of pollutants emitted by motor vehicles. Consequently, no significant regional or local air quality impacts are anticipated. The following sections discuss the possible emission generating activities associated with the proposed project and their significance.

4.4.1 Naturally Occurring Asbestos

Naturally occurring asbestos (NOA) can be found in serpentinite and asbestos bearing ultramafic rocks, and can be released when that rock is broken or crushed. At the point of release, the asbestos fibers may become airborne, causing air quality and human health hazards. Placer County is on the Office of Planning and Research's list of counties that have been identified as being particularly abundant with these types of rocks. However, the predominant rock type in the project location is from the Mehrten Formation that does not contain asbestos. The California Department of Mining and Geology (CDMG) Map (Open File Report 2000-19, August 2000) shows no areas of NOA.

Asbestos has also been used in the construction of older buildings and highway structures. Demolition of these older structures could cause asbestos contamination. Comprehensive inspections that meet the requirements of current EPA and OSHA regulations are recommended before any demolition activities associated with structures in the proposed alignment corridor. Any component that will be impacted by demolition activities should be characterized to ensure proper handling and disposal.

4.4.2 Long-term Microscale Projections

Each build alternative has its own layout and configuration; therefore, the air pollutant emissions level will be different for each alternative and thus are analyzed separately. In order to make a comparison, the same receptor locations are used throughout all alternatives and the results are compared to determine the difference in impact. Receptor locations are illustrated in Figure 3-12, located in Chapter 3. Receptor locations were determined by locating the nearest residents to each proposed alignment. In the case of planned development, receptors were estimated using maps provided by the City of Lincoln.

Carbon Monoxide (CO)

Local CO emissions level was assessed with the California Air Resources Board (CARB) approved CALINE4 air quality model, which allows microscale CO concentrations to be estimated along roadway corridors or near intersections. This model is designed to identify localized concentrations of CO, often termed "hot spots." The highest CO concentrations typically occur during peak traffic hours and volume, which represents a worst-case scenario for the calculation of CO emissions. Traffic volumes generated by the Departments' traffic analysis report for all the alternatives for the years 2015 and 2025 were used in the model (Caltrans, December 1999).

CO concentrations were calculated for the one-hour averaging period and compared to the State one hour CO standard of 20 ppm. CO eight-hour averages were calculated from the one-hour CO calculations, using techniques outlined in the Department's Carbon Monoxide Protocol. A persistent factor of 0.7 was used for the conversion of one-hour CO level to the eight-hour CO level. Concentrations are expressed as parts per million (ppm) at each receptor location.

Data in Table 4-5 illustrates the different impact levels of carbon monoxide (CO) concentration in the general vicinity of the project for the year 2015 and 2025, respectively. No significant impact on local air quality is expected from the proposed project in the years 2015 or 2025. The increases in CO concentrations are equal to or less than 0.1 ppm (particle per million) for both the one-hour and the eight-hour occurrences, which is considered minor and negligible. In addition, the CO concentrations are below the State and Federal standards, and no CO hot spots were identified. No nearby sensitive receptors would be affected by project related local air quality impacts. Therefore, implementation of the project would not have a negative impact on local air quality in the years 2015 and 2025.

Table 4-5 CO Concentration for 2015 and 2025

Receptor	1 Hour CO Conc.[1] (ppm)	8 Hour CO Conc[2] (ppm)	Exceeds Federal Standards 1 hr		Exceeds State Standards 1 hr		Receptor	1 Hour CO Conc.[1] (ppm)	8 Hour CO Conc.[2] (ppm)	Exceeds Federal Standards 1 hr		Exceeds State Standards 1 hr	
							A5C1 2015						
REC1	4.2	2.4	No	No	No	No	**REC14**	4.2	2.4	No	No	No	No
REC2	4.2	2.4	No	No	No	No	**REC15**	4.2	2.4	No	No	No	No
REC3	4.2	2.4	No	No	No	No	**REC16A**	4.3	2.5	No	No	No	No
REC4	4.2	2.4	No	No	No	No	**REC16B**	4.2	2.4	No	No	No	No
REC5	4.2	2.4	No	No	No	No	**REC17**	4.2	2.4	No	No	No	No
REC6	4.2	2.4	No	No	No	No	**REC18**	4.2	2.4	No	No	No	No
REC7	4.2	2.4	No	No	No	No	**REC19**	4.2	2.4	No	No	No	No
REC8	4.2	2.4	No	No	No	No	**REC20**	4.2	2.4	No	No	No	No
REC9	4.2	2.4	No	No	No	No	**REC21**	4.2	2.4	No	No	No	No
REC10A	4.2	2.4	No	No	No	No	**REC22**	4.2	2.4	No	No	No	No
REC10B	4.2	2.4	No	No	No	No	**REC23**	4.2	2.4	No	No	No	No
REC13	4.2	2.4	No	No	No	No	**REC24**	4.2	2.4	No	No	No	No
							REC25	4.2	2.4	No	No	No	No
							AAC2 2015						
REC1	4.2	2.4	No	No	No	No	**REC15**	4.2	2.4	No	No	No	No
REC2	4.2	2.4	No	No	No	No	**REC16A**	4.2	2.4	No	No	No	No
REC3	4.2	2.4	No	No	No	No	**REC16B**	4.2	2.4	No	No	No	No
REC4	4.2	2.4	No	No	No	No	**REC17**	4.2	2.4	No	No	No	No
REC5	4.2	2.4	No	No	No	No	**REC18**	4.2	2.4	No	No	No	No
REC6	4.2	2.4	No	No	No	No	**REC19**	4.3	2.5	No	No	No	No
REC7	4.2	2.4	No	No	No	No	**REC20**	4.2	2.4	No	No	No	No
REC8	4.2	2.4	No	No	No	No	**REC21**	4.2	2.4	No	No	No	No
REC9	4.2	2.4	No	No	No	No	**REC22**	4.2	2.4	No	No	No	No
REC10A	4.2	2.4	No	No	No	No	**REC23**	4.2	2.4	No	No	No	No
REC10B	4.2	2.4	No	No	No	No	**REC24**	4.2	2.4	No	No	No	No
REC13	4.2	2.4	No	No	No	No	**REC25**	4.2	2.4	No	No	No	No
REC14	4.2	2.4	No	No	No	No							
							D1 2015						
REC1	4.2	2.4	No	No	No	No	**REC12**	4.2	2.4	No	No	No	No
REC2	4.2	2.4	No	No	No	No	**REC13**	4.2	2.4	No	No	No	No
REC3	4.2	2.4	No	No	No	No	**REC14**	4.2	2.4	No	No	No	No
REC4	4.2	2.4	No	No	No	No	**REC15**	4.2	2.4	No	No	No	No
REC5	4.2	2.4	No	No	No	No	**REC17**	4.2	2.4	No	No	No	No
REC6	4.2	2.4	No	No	No	No	**REC18**	4.2	2.4	No	No	No	No
REC7	4.2	2.4	No	No	No	No	**REC19**	4.2	2.4	No	No	No	No
REC9	4.2	2.4	No	No	No	No	**REC20**	4.2	2.4	No	No	No	No
REC10B	4.2	2.4	No	No	No	No	**REC21**	4.3	2.5	No	No	No	No
REC11	4.2	2.4	No	No	No	No							
							D 13 2015						
REC1	4.2	2.4	No	No	No	No	**REC12**	4.2	2.4	No	No	No	No
REC2	4.2	2.4	No	No	No	No	**REC13**	4.2	2.4	No	No	No	No
REC3	4.2	2.4	No	No	No	No	**REC14**	4.2	2.4	No	No	No	No

Receptor	1 Hour CO Conc.[1] (ppm)	8 Hour CO Conc[2] (ppm)	Exceeds Federal Standards 1 hr	8 hr	Exceeds State Standards 1 hr	8 hr	Receptor	1 Hour CO Conc.[1] (ppm)	8 Hour CO Conc.[2] (ppm)	Exceeds Federal Standards 1 hr	8 hr	Exceeds State Standards 1 hr	8 hr
REC4	4.2	2.4	No	No	No	No	**REC15**	4.2	2.4	No	No	No	No
REC5	4.2	2.4	No	No	No	No	**REC17**	4.2	2.4	No	No	No	No
REC6	4.2	2.4	No	No	No	No	**REC18**	4.2	2.4	No	No	No	No
REC7	4.2	2.4	No	No	No	No	**REC19**	4.2	2.4	No	No	No	No
REC9	4.2	2.4	No	No	No	No	**REC20**	4.2	2.4	No	No	No	No
REC11	4.2	2.4	No	No	No	No	**REC21**	4.2	2.4	No	No	No	No
A5C1 2025													
REC1	4.2	2.4	No	No	No	No	**REC15**	4.2	2.4	No	No	No	No
REC2	4.2	2.4	No	No	No	No	**REC16A**	4.3	2.5	No	No	No	No
REC3	4.2	2.4	No	No	No	No	**REC16B**	4.3	2.5	No	No	No	No
REC4	4.2	2.4	No	No	No	No	**REC17**	4.2	2.4	No	No	No	No
REC5	4.2	2.4	No	No	No	No	**REC18**	4.2	2.4	No	No	No	No
REC6	4.2	2.4	No	No	No	No	**REC19**	4.2	2.4	No	No	No	No
REC7	4.2	2.4	No	No	No	No	**REC20**	4.2	2.4	No	No	No	No
REC8	4.2	2.4	No	No	No	No	**REC21**	4.2	2.4	No	No	No	No
REC9	4.2	2.4	No	No	No	No	**REC22**	4.2	2.4	No	No	No	No
REC10A	4.2	2.4	No	No	No	No	**REC23**	4.2	2.4	No	No	No	No
REC10B	4.2	2.4	No	No	No	No	**REC24**	4.2	2.4	No	No	No	No
REC13	4.2	2.4	No	No	No	No	**REC25**	4.2	2.4	No	No	No	No
REC14	4.2	2.4	No	No	No	No							
AAC2 2025													
REC1	4.2	2.4	No	No	No	No	**REC15**	4.2	2.4	No	No	No	No
REC2	4.2	2.4	No	No	No	No	**REC16A**	4.2	2.4	No	No	No	No
REC3	4.2	2.4	No	No	No	No	**REC16B**	4.2	2.4	No	No	No	No
REC4	4.2	2.4	No	No	No	No	**REC17**	4.2	2.4	No	No	No	No
REC5	4.2	2.4	No	No	No	No	**REC18**	4.2	2.4	No	No	No	No
REC6	4.2	2.4	No	No	No	No	**REC19**	4.3	2.5	No	No	No	No
REC7	4.2	2.4	No	No	No	No	**REC20**	4.2	2.4	No	No	No	No
REC8	4.2	2.4	No	No	No	No	**REC21**	4.2	2.4	No	No	No	No
REC9	4.2	2.4	No	No	No	No	**REC22**	4.2	2.4	No	No	No	No
REC10A	4.2	2.4	No	No	No	No	**REC23**	4.2	2.4	No	No	No	No
REC10B	4.2	2.4	No	No	No	No	**REC24**	4.2	2.4	No	No	No	No
REC13	4.2	2.4	No	No	No	No	**REC25**	4.2	2.4	No	No	No	No
REC14	4.2	2.4	No	No	No	No							
D1 2025													
REC1	4.2	2.4	No	No	No	No	**REC11**	4.2	2.4	No	No	No	No
REC2	4.2	2.4	No	No	No	No	**REC12**	4.2	2.4	No	No	No	No
REC3	4.2	2.4	No	No	No	No	**REC13**	4.2	2.4	No	No	No	No
REC4	4.2	2.4	No	No	No	No	**REC14**	4.2	2.4	No	No	No	No
REC5	4.2	2.4	No	No	No	No	**REC15**	4.2	2.4	No	No	No	No
REC6	4.2	2.4	No	No	No	No	**REC17**	4.2	2.4	No	No	No	No
REC7	4.2	2.4	No	No	No	No	**REC18**	4.2	2.4	No	No	No	No
REC9	4.2	2.4	No	No	No	No	**REC19**	4.2	2.4	No	No	No	No
REC10B	4.2	2.4	No	No	No	No	**REC20**	4.2	2.4	No	No	No	No

Receptor	1 Hour CO Conc.[1] (ppm)	8 Hour CO Conc[2] (ppm)	Exceeds Federal Standards 1 hr		Exceeds State Standards 1 hr		Receptor	1 Hour CO Conc.[1] (ppm)	8 Hour CO Conc.[2] (ppm)	Exceeds Federal Standards 1 hr		Exceeds State Standards 1 hr	
							REC21	4.3	2.5	No	No	No	No
D13 2025													
REC1	4.2	2.4	No	No	No	No	**REC12**	4.2	2.4	No	No	No	No
REC2	4.2	2.4	No	No	No	No	**REC13**	4.2	2.4	No	No	No	No
REC3	4.2	2.4	No	No	No	No	**REC14**	4.2	2.4	No	No	No	No
REC4	4.2	2.4	No	No	No	No	**REC15**	4.2	2.4	No	No	No	No
REC5	4.2	2.4	No	No	No	No	**REC17**	4.2	2.4	No	No	No	No
REC6	4.2	2.4	No	No	No	No	**REC18**	4.2	2.4	No	No	No	No
REC7	4.2	2.4	No	No	No	No	**REC19**	4.2	2.4	No	No	No	No
REC9	4.2	2.4	No	No	No	No	**REC20**	4.2	2.4	No	No	No	No
REC11	4.2	2.4	No	No	No	No	**REC21**	4.2	2.4	No	No	No	No

1 Includes ambient one hour CO concentration of 4.2 ppm. The State's one hour CO standard is 20 ppm.

2 Includes ambient eight hour CO concentration

As shown in Table 4-5, none of the alternatives will have a substantial impact on local air quality. The project would alleviate local congestion and have beneficial regional effects. Therefore, in accordance with the CEQA, this project is not considered to have a substantial impact on existing ambient air quality.

Air Quality Conformity Determination

The proposed project is partially funded and is programmed in the SACOG Metropolitan Transportation Plan (MTP) 2027 which was found to conform by the SACOG Board on March 16, 2006, and FHWA and FTA adopted the air quality conformity finding on April 20, 2006. The project is also included in the SACOG's financially constrained 2004-2006 MTIP, which was found to conform by FHWA and FTA on April 20, 2006. This proposed project's preferred alternative design, concept and scope are consistent with the above-mentioned documents, the 2004 STIP, and the proposed 2006 STIP. A local air quality analysis (Carbon Monoxide) has been performed.

In order for the project to be included in the MTIP, it must be in conformance with air quality standards and must meet certain criteria. This project has been analyzed and will not significantly change the air quality in the City of Lincoln.

The SIP was adopted in 1994 in compliance with the 1990 Amendments to the Federal Clean Air Act. At that time, our region could not show that we would meet the federal 1-hour standard by 1999. In exchange for moving the deadline to 2005, the region accepted a designation of "severe non-attainment," with additional emission requirements on stationary sources.

In July 1997, EPA promulgated a new 8-hour standard for ozone. This change would lower the standard for ambient ozone from 0.12 parts per million of ozone averaged over one hour to 0.08 parts per million of ozone averaged over eight hours. In general, the 8-hour standard is more protective of public health and more stringent than the federal 1-hour standard. Key aspects of the 8-hour ozone rule are the new designations and non-attainment classifications in June 2004, and the revocation of the 1-hour ozone standard in June 2005. However, 8-hour ozone non-attainment areas remain subject to control measure commitments that applied under the 1-hour ozone standard. The Sacramento region has been designated as a non-attainment area for the federal 8-hour ozone standard with an attainment deadline of June 2013. As required by a court settlement, US EPA issued final non-attainment Area Designations for 8-hour ozone on April 15, 2004 for the 8-hour ozone standard.

Air quality models are used to demonstrate that the project's emissions will not contribute to the deterioration or impede the progress of air quality goals stated in the AQAP. The SACOG Regional Air Quality Model uses project specific data to estimate the amount of pollutants generated from the implementation of a project. The results for the "No build" and "Build" scenarios in the horizon year (2025) are compared to the AQAP air quality projections. If the analysis shows compliance with the requirements, it is considered consistent with the AQAP.

The proposed project is partially funded and is programmed in the SACOG Metropolitan Transportation Plan (MTP) 2027 which was found to conform by the SACOG Board on March 16, 2006, and FHWA and FTA adopted the air quality conformity finding on April 20, 2006. The project is also included in the SACOG's financially constrained 2004-2006 MTIP, which was found to conform by FHWA and FTA on April 20, 2006. This proposed project's preferred alternative design, concept and scope are consistent with the above-mentioned documents, the 2004 STIP, and the proposed 2006 STIP. A local air quality analysis (Carbon Monoxide) has been performed.

This project is in accordance with the goals and policies of the City's General Plan that is to provide for the long-range planning and development of the County's roadway system in order to ensure the safe and efficient movement of people and goods. The alternatives proposed are necessary for the safety of the public in the City of Lincoln and would accommodate future planned growth that is projected in the general vicinity. As shown in Table 4-5, the proposed project will not substantially contribute to or cause deterioration of existing air quality; therefore, mitigation measures are not required for

the long-term operation of the project. Hence, the proposed project is considered to be consistent with the City of Lincoln General Plan and the Placer County General Plan, and therefore consistent with the AQAP and in conformity with the State Implementation Plan (STIP).

Short-Term Construction Related Impacts

Construction Equipment Exhaust Emissions

Construction activities produce combustion emissions from various sources such as site grading, utility engines, on-site heavy-duty construction vehicles, equipment hauling materials to and from the site and vehicles transporting the construction crew. The use of construction equipment on site would result in localized exhaust emissions. On site exhaust emissions during construction would vary daily, as construction activity levels change. The Department's standard specifications for construction would be adhered to in order to reduce construction related emissions, thereby reducing impacts to less than significant under CEQA.

Avoidance and Minimization Measures

Construction Impacts

The following measures are provided to reduce air pollutants generated by vehicle and equipment exhaust during the project construction phase:

- The contractor shall ensure that grading plans include a statement that all construction equipment will be tuned and maintained in accordance with the manufacturer's specifications.
- The contractor shall utilize electric powered equipment in lieu of gasoline-powered engines where feasible.
- The contractor shall ensure that grading plans include a statement that work crews will shut off equipment when not in use.
- The contractor shall time the construction activities so as not to interfere with peak hour traffic and minimize obstruction of through traffic lanes adjacent to the site. If necessary, a flag person shall be retained to maintain safety adjacent to existing roadways.
- The contractor shall support and encourage ridesharing and transit incentives for the construction crew.

The following measure would reduce or minimize air pollutant emissions associated with asphalt paving:

- The construction contractor shall adhere to the requirements of the rules addressing the emission control measures covering the asphalt paving emissions.

In addition to the recommended avoidance and minimization measures listed above, the Department's' Standard Construction Specifications shall be adhered to further reduce emissions. Following is a list of avoidance and minimization measures to reduce the emission of fugitive dust.

- All disturbed areas, including storage piles, that are not being actively utilized for construction purposes shall be effectively stabilized for dust emissions using water, chemical stabilizers/suppressants, or vegetative ground cover.
- All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized for dust emissions using water or chemical stabilizers/ suppressants.
- All land clearing, grubbing, scraping, excavations, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled for fugitive dust emissions utilizing applications of water, or by presoaking.
- When materials are transported off site, all material shall be covered or effectively wetted to limit visible dust emission; or at least six inches of freeboard space from the top of the container shall be maintained.
- All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at least once every 24 hours when operations are occurring. The use of dry rotary brushes is expressly prohibited, except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. The use of blower devices is expressly forbidden.
- Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized for fugitive dust emissions utilizing sufficient water or chemical stabilizers/suppressants.
- Traffic speeds on unpaved roads shall be limited to 15 mph.
- Sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways from sites with a slope greater than one percent.
- Wheel washers for all exiting trucks shall be installed, or all trucks and equipment washed off before leaving the site.
- Windbreaks shall be installed at windward side(s) of construction areas.
- Excavation and grading activity shall be suspended when winds exceed 20 mph.

- Areas subject to excavation, grading and other construction activity shall be limited at any one time.

Compliance with the above minimization measures would lessen the fugitive dust impact during construction.

4.5 NOISE IMPACTS

Federal guidelines for assessing traffic noise are contained in Title 23 of the Code of Federal Regulations Part 772, (23 CFR 772), "Procedures for Abatement of Highway Traffic Noise and Construction Noise." These guidelines require consideration of noise abatement measures for highway projects when traffic related noise impacts have been identified. The Federal and State guidelines state that there will be a noise impact when design year noise levels approach or exceed the noise abatement criterion (NAC) (coming within one dBA of the NAC) for the specified land use, or when the predicted traffic noise levels substantially exceed, by 12 dBA or more, the existing noise levels.

The land use in the Noise Impacts Study Area is primarily rural/agricultural. At present there are scattered residences along all the alignments, however, development has been completed and planned for much of the area southeast of the airport. All of the identified receptors are considered Activity Category B (NAC of 66 dBA) or C (NAC of 72 dBA).

The ultimate design year is 2025 and is considered in the traffic noise model. Four alignments, AAC2, A5C1, D1 and D13, were modeled using Sound32. Of the 31 receptor locations, eight receptors represent undeveloped lands for which development is underway or has been planned, designed and programmed prior to the date of public knowledge of the planned project. When traffic noise impacts are predicted for undeveloped lands for which development is planned, designed and programmed before the date of public knowledge, noise abatement must be considered as part of the project. (See Figure 3-12, Noise and Air Receptors.)

Noise impacts from the D13 South Modified have not been quantitatively analyzed because all of the existing and future planned housing developments, represented by receptors NR-15, NR-21, NR-27 and NR-28, are located north of the D13 alignments. As D13 South Modified is south of D13, future noise levels in these vicinities are predicted to be less than D13. It is therefore assumed that traffic noise impacts and any proposed abatement measures for D13 South Modified to be equivalent to the D13.

The D13 North Modified traverses land uses that are principally rural and undeveloped. North of Coon Creek, the A5C1, AAC2, D1, D13, and D13 South Modified Alternatives traverse identical land uses and parallel the D13 North Modified.

The closest residences are represented by NR2. The D1 alignment is considered equal or closer than noise receptors in the D13 North Modified alignment and hence considered worst case. As a result, the analysis and subsequent impacts/abatement measures, if any, are considered identical to those that were modeled in the noise analysis.

For specific details on the noise impact evaluation, please refer to the Noise Impact Report, available for review at the Department of Transportation, District 3, Sacramento Office, 2389 Gateway Oaks Dr., Sacramento, CA

4.5.1 Long Term Noise Impacts

Table 4-6 shows the existing noise levels at the 31 receptors within the Study Area and the predicted noise levels, without sound walls, for each of the alignments. Noise levels were predicted for 2025. Bold numbers indicate approach or exceed Noise Abatement Criteria (NAC) at impacted receptors. Italic numbers indicate a "substantial increase" over existing levels.

Table 4-6 Projected Traffic Noise Levels – Ultimate Plan 2025

Noise Level Location	Existing Noise (Monitored) Leq dBA	A5C1	AAC2	D1	D13
NR-1	49.1	60.6	60.5	56.8	56.8
NR-2	45.6	*60.6*	*62.6*	57.3	57.3
NR-3	54	55.2	55.2	52.9	55.0
NR-4	45.6	53.4	55.5	*60.5*	*60.5*
NR-5	51.3	57.8	*64.6*	63.1	63.1
NR-6	49.6	50.3	50.7	56.6	56.6
NR-7	38.1	*58.2*	*51.2*	*55.2*	*57.6*
NR-8	48.1	62.0	59.1	N/A	N/A
NR-9	36.4	*53.0*	*52.4*	N/A	N/A
NR-10a	54.4	64.3	63.6	N/A	N/A
NR-10b	52.7	63.8	63.2	N/A	N/A
NR-11	36.6	N/A	N/A	*54.7*	*51.6*
NR-12	46	N/A	N/A	*60.5*	56.2
NR-13	43.3	N/A	N/A	***68.2***	*57.9*
NR-14	43.4	N/A	53.0	***68.6***	*60.1*
NR-15	45.6	*62.4*	*60.5*	N/A	53.1
NR-16a	47.7	***65.9***	*60.7*	N/A	N/A
NR-16b	47.9	***66.2***	*60.1*	N/A	N/A
NR-17[4] (8)	48.1	59.6	*61.3*	58.6	58.1
NR-18[4] (10a)	54.4	***70.4***	***70.0***	***65.7***	***69.5***
NR-19[4] (10a)	54.4	***66.6***	***65.9***	***73.7***	***68.0***
NR-20[4] (14)	43.4	***70.4***	***70.3***	*59.1*	*63.2*
NR-21[4] (15)	45.6	***73.9***	***69.6***	57.0	55.6
NR-22[4] (16b)	47.9	***72.5***	***66.4***	N/A	N/A
NR-23[4] (10b)	52.7	***72.2***	*65.2*	N/A	N/A

Noise Level Location	Existing Noise (Monitored) Leq dBA	A5C1	AAC2	D1	D13
NR-24[4] (8)	48.1	*65.0*	*63.0*	N/A	N/A
NR-25[4] (6)	49.6	*63.4*	*62.2*	N/A	N/A
NR-264 (14)	43.4	70.4	70.3	59.1	63.2
NR-27[4] (14)	43.4	N/A	N/A	*60.2*	***73.6***
NR-28[4] (14)	43.4	N/A	N/A	*59.7*	***65.9***
NR-29[4] (14)	43.4	***71.0***	***69.6***	***67.9***	***65.8***
NR-30[4] (14)	43.4	***70.7***	***68.7***	***69.1***	***67.8***
NR-31[4] (15)	45.6	***68.6***	***64.6***	N/A	N/A

[1] N/A- The modeled segment does not contribute significantly to the noise level at the considered receptor location. Receptor location not modeled for the considered alignment.
[2] Italic numbers indicate "substantial increase" over existing levels.
[3] Bold numbers indicate noise levels that "approach or exceed" the NAC at impacted receptor.
[4] An "acoustical equivalent" was used as indicated in parenthesis.

Table 4-7 Summary of Traffic Noise Modeling Results (A5C1)

Receiver ID	Location Description	Type of Development	Noise Abatement Category Leq (h)	Existing Measured Noise Level dBA Leq (h)	Predicted[4] Worst Noise Hour Noise Level dBA Leq (h)	Noise Increase (+) or Decrease (-)	Impact Type[5]
NR-1	4221 North Dowd Road	Res.	B [1]	49.1	60.6[2] [3]	+11.5	None
NR-2	100m north of Riosa Road	Res.	B[1]	45.6	60.6 [3]	+15.0	S
NR-3	100 feet from Existing SR 65	Res.	B[1]	54	55.2 [3]	+1.2	None
NR-4	4710 North Dowd Road	Res.	B[1]	45.6	53.4 [3]	+7.8	S
NR-5	4221 North Dowd Road	Res.	B[1]	51.3	57.8 [3]	+6.5	None
NR-6	700 feet from Existing SR 65	Res.	B[1]	49.6	50.3 [3]	+0.7	None
NR-7	2780 Dowd Road	Res.	B[1]	38.1	68.2 [3]	+30.1	S, A/E
NR-8	2000 feet from Existing SR 65, 1000 feet from C1 and C2	Res.	B[1]	48.1	62.0 [3]	+13.9	S
NR-9	200m south of Wise Road	Res.	B[1]	36.4	53.0 [3]	+16.6	S
NR-10a	Along Wise Road	Res.	B[1]	54.4	64.3 [3]	+9.9	None
NR-10b	Along Wise Road	Res.	B[1]	52.7	63.8 [3]	+11.1	None
NR-11	Along Airport Road	Res.	B[1]	36.6	N/A	N/A	N/A
NR-12	Along Nicolaus Road	Res.	B[1]	46	N/A	N/A	N/A
NR-13	On Rockwell Lane	Res.	B[1]	43.3	N/A	N/A	N/A
NR-14	Along Moore Road	Res.	B[1]	43.4	N/A	N/A	S
NR-15	400 feet east of C1 and C2	Res.	B[1]	45.6	62.4 [3]	+16.8	S
NR-16a	North end of El Camino Verde	Res.	B[1]	47.7	65.9 [3]	+18.2	S, A/E
NR-16b	1245 Cobblestone Dr	Res.	B[1]	47.9	66.2 [3]	+18.3	S, A/E
NR - 17	2000 feet from SR 65	Res.	B[1]	48.1	59.6 [3]	+11.5	S
NR-18	Lincoln Crossing	Res.	B[1]	54.4	70.4 [3]	+16.0	S, A/E
NR-19	Lincoln Crossing	Comm/ Res.	C/B [1]	54.4	66.6 [3]	+12.2	S, A/E
NR-20	Lincoln Crossing	Res.	B [1]	43.4	70.4 [3]	+27.0	S, A/E

Receiver ID	Location Description	Type of Development	Noise Abatement Category Leq (h)	Existing Measured Noise Level dBA Leq (h)	Predicted[4] Worst Noise Hour Noise Level dBA Leq (h)	Noise Increase (+) or Decrease (-)	Impact Type[5]
NR-21	50 feet from Existing SR 65	Res.	B [1]	45.6	73.9 [3]	+28.3	S, A/E
NR-22	50 feet from Existing SR 65, south of Nicolaus Road	Res.	B [1]	47.9	72.5 [3]	+24.6	S, A/E
NR-23	50 feet south of Nicolaus Road	Res.	B [1]	52.7	72.2 [3]	+19.5	S, A/E
NR-24	50 feet from C1	Res.	B [1]	48.1	65.0 [3]	+16.9	S
NR-25	50 feet from Existing SR 65	Res.	B [1]	49.6	63.4 [3]	+13.8	S
NR-26	NW corner of SR 65/Ferrari Ranch	Res.	B [1]	43.4	70.4 [3]	27.0	S, A/E
NR-27	100 feet North of D13	Res.	B [1]	43.4	N/A	N/A	N/A
NR-28	100 feet North of D13	Res.	B [1]	43.4	N/A	N/A	N/a
NR-31	3-D Development	Res.	B [1]	43.4	71.0 [3]	27.6	S, A/E
NR-30	3-D Development	Res.	B [1]	43.4	70.7 [3]	+27.3	S, A/E
NR-31	Lincoln West Development	Res.	B [1]	45.6	68.6 [3]	+23.0	S, A/E

[1] 67 dB [2] 72 dB [3] Modeled [4] Predicted for design year 2025 [5] Impact Types:
None - no impacts identified, A/E - noise abatement criteria approached or exceeded, S - existing noise level substantially increased, N/A- Not Applicable

Table 4-8 Summary of Traffic Noise Modeling Results AAC2

Receiver ID	Location Description	Type of Development	Noise Abatement Category Leq (h)	Existing Measured Noise Level dBA Leq (h)	Predicted[4] Worst Noise Hour Noise Level dBA Leq (h)	Noise Increase (+) or Decrease (-)	Impact Type[6]
NR-1	6355 North SR 65	Res.	B[1]	49.1	60.5 [3]	+11.4	None
NR-2	100m north of Riosa Road	Res.	B[1]	45.6	62.6[3] [3]	+17.0	S
NR-3	100 feet from Existing SR 65	Res.	B[1]	54	55.2 [3]	+1.2	None
NR-4	4710 North Dowd Road	Res.	B[1]	45.6	55.5 [3]	+9.9	None
NR-5	4221 North Dowd Road	Res.	B[1]	51.3	64.6 [3]	+13.3	S
NR-6	700 feet from Existing SR 65	Res.	B[1]	49.6	50.7 [3]	+1.1	None
NR-7	2780 Dowd Road	Res.	B[1]	38.1	51.2 [3]	+13.1	S
NR-8	2000 feet from Existing SR 65, 1000 feet from C1 and C2	Res.	B[1]	48.1	59.1 [3]	+11.0	None
NR-9	200m south of Wise Road	Res.	B[1]	36.4	52.4 [3]	+16.0	S
NR-10a	Along Wise Road	Res.	B[1]	54.4	63.6 [3]	+9.2	None
NR-10b	Along Wise Road	Res.	B[1]	52.7	63.2 [3]	+10.5	None
NR-11	Along Airport Road	Res.	B[1]	36.6	N/A	N/A	N/A
NR-12	Along Nicolaus Road	Res.	B[1]	46	N/A	N/A	N/A
NR-13	On Rockwell Lane	Res.	B[1]	43.3	N/A	N/A	N/A
NR-14	Along Moore Road	Res.	B[1]	43.4	53.0 [3]	+9.6	None
NR-15	400 feet east of C1 and C2	Res.	B[1]	45.6	60.5 [3]	+14.9	S

Receiver ID	Location Description	Type of Development	Noise Abate-ment Category Leq (h)	Existing Measured Noise Level dBA Leq (h)	Predicted[4] Worst Noise Hour Noise Level dBA Leq (h)	Noise Increase (+) or Decrease (-)	Impact Type[6]
NR-16a	North end of El Camino Verde	Res.	B[1]	47.7	60.7 [3]	+13.0	S
NR-16b	1245 Cobblestone Dr	Res.	B[1]	47.9	60.1 [3]	+12.2	S
NR-17	2000 feet from SR 65	Res.	B[1]	48.1	61.3 [3]	+13.2	S
NR-18	Lincoln Crossing	Res.	B[1]	54.4	70.0 [3]	+15.6	S, A/E
NR-19	Lincoln Crossing	Comm/ Res.	C/B[1]	54.4	65.9 [3]	+11.5	S, A/E
NR-20	Lincoln Crossing	Res.	B[1]	43.4	70.3 [3]	+26.9	S, A/E
NR-21	50 feet from Existing SR 65	Res.	B[1]	45.6	69.6 [3]	+24.0	S, A/E
NR-22	50 feet from Existing SR 65, south of Nicolaus Road	Res.	B[1]	47.9	66.4 [3]	+18.5	S, A/E
NR-23	50 feet south of Nicolaus Road	Res.	B[1]	52.7	65.2 [3]	+12.5	S
NR-24	50 feet from C1	Res.	B[1]	48.1	63.0 [3]	+14.9	S
NR-25	50 feet from Existing SR 65	Res.	B[1]	49.6	62.2 [3]	+12.6	S
NR-26	NW corner of SR 65/Ferrari Ranch	Res.	B[1]	43.4	70.3 [3]	26.9	S, A/E
NR-27	100 feet North of D13	Res.	B[1]	43.4	N/A	N/A	N/A
NR-28	100 feet North of D13	Res.	B[1]	43.4	N/A	N/A	N/A
NR-29	3-D Development	Res.	B[1]	43.4	69.6 [5]	+26.2	S, A/E
NR-30	3-D Development	Res.	B[1]	43.4	68.7 [5]	+25.3	S, A/E
NR-31	Lincoln West Development	Res.	B[1]	45.6	64.6 [5]	+19.0	S

[1] 67 dB [2] 72 dB [3] Modeled [4] Predicted for design year 2025 [5] Measured
[6]Impact Types: None - no impacts identified, A/E - noise abatement criteria approached or exceeded, S - existing noise level substantially increased, N/A- Not Applicable

Table 4-9 Summary of Traffic Noise Modeling Results D1

Receiver ID	Location Description	Type of Development	Noise Abate-ment Category Leq (h)	Existing Measured Noise Level dBA Leq (h)	Predicted [4] Worst Noise Hour Noise Level dBA Leq (h)	Noise Increase (+) or Decrease (-)	Impact Type[5]
NR-1	6355 North SR 65	Res.	B[1]	49.1	56.8 [3]	+7.7	None
NR-2	100m north of Riosa Road	Res.	B[1]	45.6	57.3 [3]	+11.7	None
NR-3	100 feet from Existing SR 65	Res.	B[1]	54	52.9 [3]	0	None
NR-4	4710 North Dowd Road	Res.	B[1]	45.6	60.5 [3]	+14.9	S
NR-5	4221 North Dowd Road	Res.	B[1]	51.3	63.1 [3]	+11.8	None
NR-6	700 feet from Existing SR 65	Res.	B[1]	49.6	56.6 [3]	+7	None
NR-7	2780 Dowd Road	Res.	B[1]	38.1	55.2 [3]	+17.1	S
NR-8	2000 feet from Existing SR 65, 1000 feet from C1 and C2	Res.	B[1]	48.1	N/A	N/A	N/A
NR-9	200m south of Wise Road	Res.	B[1]	36.4	N/A	N/A	N/A
NR-10a	Along Wise Road	Res.	B[1]	54.4	N/A	N/A	N/A
NR-10b	Along Wise Road	Res.	B[1]	52.7	N/A	N/A	N/A

Receiver ID	Location Description	Type of Development	Noise Abate-ment Category Leq (h)	Existing Measured Noise Level dBA Leq (h)	Predicted [4] Worst Noise Hour Noise Level dBA Leq (h)	Noise Increase (+) or Decrease (-)	Impact Type[5]
NR-11	Along Airport Road	Res.	B[1]	36.6	54.7 [3]	+18.1	S
NR-12	Along Nicolaus Road	Res.	B[1]	46	60.5 [3]	+14.5	S
NR-13	On Rockwell Lane	Res.	B[1]	43.3	68.2 [3]	+24.9	S, A/E
NR-14	Along Moore Road	Res.	B[1]	43.4	68.6 [3]	+25.2	S, A/E
NR-15	400 feet east of C1 and C2	Res.	B[1]	45.6	N/A	N/A	N/A
NR-16a	North end of El Camino Verde	Res.	B[1]	47.7	N/A	N/A	N/A
NR-16b	1245 Cobblestone Dr	Res.	B[1]	47.9	N/A	N/A	N/A
NR-17	2000 feet from SR 65	Res.	B[1]	48.1	58.6 [3]	+10.5	None
NR-18	Lincoln Crossing	Res.	B[1]	54.4	65.7 [3]	+11.3	S, A/E
NR-19	Lincoln Crossing	Comm/ Res.	C/B1	54.4	73.7 3	+19.3	S, A/E
NR-20	Lincoln Crossing	Res.	B[1]	43.4	59.1 [3]	+15.7	S
NR-21	50 feet from Existing SR 65	Res.	B[1]	45.6	57.0 [3]	+11.4	S
NR-22	50 feet from Existing SR 65, south of Nicolaus Road	Res.	B[1]	47.9	N/A	N/A	N/A
NR-23	50 feet south of Nicolaus Road	Res.	B[1]	52.7	N/A	N/A	N/A
NR-24	50 feet from C1	Res.	B[1]	48.1	N/A	N/A	N/A
NR-25	50 feet from Existing SR 65	Res.	B[1]	49.6	N/A	N/A	N/A
NR-26	NW corner of SR 65/ Ferrari Ranch	Res.	B[1]	43.4	59.1 [3]	15.7	S
NR-27	100 feet North of D13	Res.	B[1]	43.4	60.2 [3]	+16.8	S
NR-28	100 feet North of D13	Res.	B[1]	43.4	59.7 [3]	+16.3	S
NR-29	3-D Development	Res.	B[1]	43.4	67.9 [3]	+24.5	S, A/E
NR-30	3-D Development	Res.	B[1]	43.4	69.1 [3]	+25.7	S, A/E
NR-31	Lincoln West Development	Res.	B[1]	45.6	N/A	N/A	N/A

[1] 67 dB [2] 72 dB [3] Modeled [4] Predicted for design year 2025 [5] Impact Types:
None - no impacts identified, A/E - noise abatement criteria approached or exceeded, S - existing noise level substantially increased, N/A- Not Applicable

Table 4-10 Summary of Traffic Noise Modeling Results D13

Receiver ID	Location Description	Type of Development	Noise Abate-ment Category Leq (h)	Existing Noise Level dBA Leq (h)	Predicted [4] Worst Noise Hour Noise Level dBA Leq (h)	Noise Increase (+) or Decrease (-)	Impact Type[5]
NR-1	6355 North SR 65	Res.	B[1]	49.1	56.8 [3]	+7.7	None
NR-2	100m north of Riosa Road	Res.	B[1]	45.6	57.3 [3]	+11.7	None
NR-3	100 feet from Existing SR 65	Res.	B[1]	54	55.0 [3]	+1.0	None
NR-4	4710 North Dowd Road	Res.	B[1]	45.6	60.5 [3]	+14.9	S
NR-5	4221 North Dowd Road	Res.	B[1]	51.3	63.1 [3]	+11.8	None
NR-6	700 feet from Existing SR 65	Res.	B[1]	49.6	56.6 [3]	+7.0	None
NR-7	2780 Dowd Road	Res.	B[1]	38.1	57.6 [3]	+19.5	S

Receiver ID	Location Description	Type of Development	Noise Abate-ment Category Leq (h)	Existing Noise Level dBA Leq (h)	Predicted [4] Worst Noise Hour Noise Level dBA Leq (h)	Noise Increase (+) or Decrease (-)	Impact Type[5]
NR-8	2000 feet from Existing SR 65, 1000 feet from C1 and C2	Res.	B[1]	48.1	N/A	N/A	N/A
NR-9	200m south of Wise Road	Res.	B[1]	36.4	N/A	N/A	N/A
NR-10a	Along Wise Road	Res.	B[1]	54.4	N/A	N/A	N/A
NR-10b	Along Wise Road	Res.	B[1]	52.7	N/A	N/A	N/A
NR-11	Along Airport Road	Res.	B[1]	36.6	51.6 [3]	+15	S
NR-12	Along Nicolaus Road	Res.	B[1]	46	56.2 [3]	+10.2	None
NR-13	On Rockwell Lane	Res.	B[1]	43.3	57.9 [3]	+14.6	S
NR-14	Along Moore Road	Res.	B[1]	43.4	60.1 [3]	+16.7	S
NR-15	400 feet east of C1 and C2	Res.	B[1]	45.6	53.1 [3]	+7.5	None
NR-16a	North end of El Camino Verde	Res.	B[1]	47.7	N/A	N/A	N/A
NR-16b	1245 Cobblestone Dr	Res.	B[1]	47.9	N/A	N/A	N/A
NR-17	2000 feet from SR 65	Res.	B[1]	48.1	58.1 [3]	+10	None
NR-18	Lincoln Crossing	Res.	B[1]	54.4	69.5 [3]	+15.1	S, A/E
NR-19	Lincoln Crossing	Comm./ Res.	C/B[1]	54.4	68.0 [3]	+13.6	S, A/E
NR-20	Lincoln Crossing	Res.	B[1]	43.4	63.2 [3]	+19.8	S
NR-21	50 feet from Existing SR 65	Res.	B[1]	45.6	55.6 [3]	+10	None
NR-22	50 feet from Existing SR 65, south of Nicolaus Road	Res.	B[1]	47.9	N/A	N/A	N/A
NR-23	50 feet south of Nicolaus Road	Res.	B[1]	52.7	N/A	N/A	N/A
NR-24	50 feet from C1 Alignment	Res.	B[1]	48.1	N/A	N/A	N/A
NR-25	50 feet from Existing SR 65	Res.	B[1]	49.6	N/A	N/A	N/A
NR-26	NW corner of SR 65/Ferrari Ranch	Res.	C[2]	43.4	63.2 [3]	19.8	S
NR-27	100 feet North of D13 Alignment	Res.	B[1]	43.4	73.6 [3]	+30.2	S, A/E
NR-28	100 feet North of D13	Res.	B[1]	43.4	65.9 [3]	+22.5	S, A/E
NR-29	3-D Development	Res.	B[1]	43.4	65.8 [3]	+22.4	S, A/E
NR-30	3-D Development	Res.	B[1]	43.4	67.8 [3]	+24.4	S, A/E
NR-31	Lincoln West Development	Res.	B[1]	45.6	N/A	N/A	N/A

[1] 67 dB [2] 72 dB [3] Modeled [4] Predicted for design year 2025

[5] Impact Types: None - no impacts identified, A/E - noise abatement criteria approached or exceeded, S - existing noise level substantially increased, N/A- Not Applicable

4.5.2 Noise Abatement Measures

Long Term noise impact abatement measures (NEPA)

Under Federal/FHWA regulations (23 CFR 772) and the Department's policy, noise abatement must be considered when the project results in a noise impact. Feasible and reasonable abatement measures must be included in the final environmental

documentation. Receptor locations that are predicted to be noise impacted are summarized in Table 4-7 through Table 4-10.

According to the Caltrans Noise Protocol, a minimum of 5 dB of noise reduction must be achieved at impacted receivers for proposed noise abatement to be considered feasible. Other factors may also restrict feasibility, including topography, access requirements for driveways or ramps, presence of local cross streets, other noise sources in the area, and safety considerations.

For any soundwalls to be considered reasonable from a cost perspective, the total estimated cost of the wall must be at or below the total allowance calculated for each wall. The reasonable base cost allowance per benefited residence is $17,000. The cost calculations of the soundwall should include all items appropriate and necessary for the construction of the soundwall, such as traffic control, drainage, and retaining walls. Soundwalls were not considered at isolated rural residences on large lots because they did not meet the Caltrans/FHWA reasonableness criteria. Soundwalls for rural and single family residences would not be reasonable from a cost perspective because the cost of the soundwall per residence is too high. No further evaluation was made at these locations. Noise abatement is not considered reasonable at commercial use sites, as soundwalls are generally not desired for these land use types. A final decision on sound walls, including the specific locations and heights, will be made by the Project Development Team (PDT) after final design has been completed, and local government and public input has been made. Table 4-11 through Table 4-14 discuss the soundwalls evaluated as noise abatement, including cost effectiveness.

Table 4-11 Soundwalls Evaluated for Abatement Alternative A5C1

Sound Wall	Recvr(s) Protected	SW Height	Length (ft)	SW Location Description	Total Reasonable Allowance	Engineers estimate
C1.1	19 (Comm.)	3.0 m (10 ft)	671 m (2,200 ft)	N/B SR65 to Ferrari Ranch Off-Ramp 163+00 to 185+00	NR	NR
		3.6 m (12 ft)	671 m (2,200 ft)	N/B SR65 to Ferrari Ranch Off-Ramp 163+00 to 185+00	NR	NR
		4.3 m (14 ft)	671 m (2,200 ft)	N/B SR65 to Ferrari Ranch Off-Ramp 163+00 to 185+00	NR	NR
		4.6 m (16 ft)	671 m (2,200 ft)	N/B SR65 to Ferrari Ranch Off-Ramp 163+00 to 185+00	NR	NR
C1.2	20,29 (3-D Dev.)	3.0 m (10 ft)	1859 m (6,100 ft)	W/B Ferrari Ranch to N/B SR65 185+00 to 246+00	NF	NF
		3.6 m (12 ft)	1859 m (6,100 ft)	W/B Ferrari Ranch to N/B SR65 185+00 to 246+00	NF	NF
		4.3 m (14 ft)	1859 m (6,100 ft)	W/B Ferrari Ranch to N/B SR65 185+00 to 246+00	$1,591,000	$1,843,300

Sound Wall	Recvr(s) Protected	SW Height	Length (ft)	SW Location Description	Total Reasonable Allowance	Engineers estimate
		4.6 m (16 ft)	1859 m (6,100 ft)	W/B Ferrari Ranch to N/B SR65 185+00 to 246+00	$1,677,000	$2,764,900
C1.3	30 (3-D Dev.	3.0 m (10 ft)	853 m (2,800 ft)	S/B SR65 246+00 to 218+00	$1,560,000	$604,400
		3.6 m (12 ft)	853 m (2,800 ft)	S/B SR65 246+00 to 218+00	$1,560,000	$725,200
		4.3 m (14 ft)	853 m (2,800 ft)	S/B SR65 246+00 to 218+00	$1,640,000	$846,100
		4.6 m (16 ft)	853 m (2,800 ft)	S/B SR65 246+00 to 218+00	$1,640,000	$1,269,100
C1.4	18	3.0 m (10 ft)	671 m (2,200 ft)	E/B Ferrari Ranch to S/B SR65 185+00 to 163+00	$2,220,000	$474,900
		3.6 m (12 ft)	671 m (2,200 ft)	E/B Ferrari Ranch to S/B SR65 185+00 to 163+00	$2,340,000	$569,800
		4.3 m (14 ft)	671 m (2,200 ft)	E/B Ferrari Ranch to S/B SR65 185+00 to 163+00	$2,340,000	$664,800
		4.6 m (16 ft)	671 m (2,200 ft)	E/B Ferrari Ranch to S/B SR65 185+00 to 163+00	$2,340,000	$997,200
C1.5	15,21	3.0 m (10 ft)	1097 m (3,600 ft)	N/B SR65 253+00 to 289+00	NF	NF
		3.6 m (12 ft)	1097 m (3,600 ft)	N/B SR65 253+00 to 289+00	$2,769,000	$932,400
		4.3 m (14 ft)	1097 m (3,600 ft)	N/B SR65 253+00 to 289+00	$2,769,000	$1,087,800
		4.6 m (16 ft)	1097 m (3,600 ft)	N/B SR65 253+00 to 289+00	$2,911,000	$1,631,700
C1.6	16a, 16b	3.0 m (10 ft)	1707 m (5,600 ft)	S/B SR65 to Nicolaus Off-Ramp 356+00 to 300+00	NF	NF
		3.6 m (12 ft)	1707 m (5,600 ft)	S/B SR65 to Nicolaus Off-Ramp 356+00 to 300+00	NF	NF
		4.3 m (14 ft)	1707 m (5,600 ft)	S/B SR65 to Nicolaus Off-Ramp 356+00 to 300+00	$1,184,000	$1,692,200
		4.6 m (16 ft)	1707 m (5,600 ft)	S/B SR65 to Nicolaus Off-Ramp 356+00 to 300+00	$1,184,000	$2,538,200
C1.7a[1]	22,23	3.0 m (10 ft)	396 m (1,300 ft)	Nicolaus to S/B SR65 300+00 to 287+00	NF	NF
		3.6 m (12 ft)	396 m (1,300 ft)	Nicolaus to S/B SR65 300+00 to 287+00	NF	NF
		4.3 m (14 ft)	396 m (1,300 ft)	Nicolaus to S/B SR65 300+00 to 287+00	$962,000	$392,900
		4.6 m (16 ft)	396 m (1,300 ft)	Nicolaus to S/B SR65 300+00 to 287+00	$962,000	$589,300
C1.7b[1]	31 (Lincoln West Dev.)	3.0 m (10 ft)	518 m (1,700 ft)	S/B SR65 275+00 to 258+00	$1,155,000	$367,000
		3.6 m (12 ft)	518 m (1,700 ft)	S/B SR65 275+00 to 258+00	$1,155,000	$440,300
		4.3 m (14 ft)	518 m (1,700 ft)	S/B SR65 275+00 to 258+00	$1,221,000	$513,700
		4.6 m (16 ft)	518 m (1,700 ft)	S/B SR65 275+00 to 258+00	$1,221,000	$770,600
C1.13	10a	3.0 m (10 ft)	304.8 m (1,000 ft)	E/B Wise Road	NF	NF
		3.6 m (12 ft)	304.8 m (1,000 ft)	E/B Wise Road	$66,000	$259,000
		4.3 m (14 ft)	304.8 m (1,000 ft)	E/B Wise Road	$66,000	$302,200
		4.6 m (16 ft)	304.8 m (1,000 ft)	E/B Wise Road	$66,000	$453,300
C1.14	10b	3.0 m (10 ft)			NF	NF
		3.6 m (12 ft)			NF	NF
		4.3 m (14 ft)			NF	NF
		4.6 m (16 ft)			NF	NF

Sound Wall	Recvr(s) Protected	SW Height	Length (ft)	SW Location Description	Total Reasonable Allowance	Engineers estimate
C1.11	7	3.0 m (10 ft)			NF	NF
		3.6 m (12 ft)			NF	NF
		4.3 m (14 ft)			NF	NF
C1.12	8	3.0 m (10 ft)			NF	NF
		3.6 m (12 ft)			NF	NF
		4.3 m (14 ft)			NF	NF
		4.6 m (16 ft)			NF	NF
C1.10	4,5	3.0 m (10 ft)	3444 m (11,300 ft)	N/B SR 65 532+00 to 645+00	$99,000	$111,000
		3.6 m (12 ft)	3444 m (11,300 ft)	N/B SR 65 532+00 to 645+00	$99,000	$2,926,700
		4.3 m (14 ft)	3444 m (11,300 ft)	N/B SR 65 532+00 to 645+00	$105,000	$3,414,500
		4.6 m (16 ft)	3444 m (11,300 ft)	N/B SR 65 532+00 to 645+00	$105,000	$5,121,800
C1.8	1	3.0 m (10 ft)			NF	NF
		3.6 m (12 ft)			NF	NF
		4.3 m (14 ft)			NF	NF
		4.6 m (16 ft)			NF	NF
C1.9	2	3.0 m (10 ft)	427 m (1,400 ft)	W/B Riosa N/B SR 65 532+00 to 645+00	NF	NF
		3.6 m (12 ft)	304.8 m (1,000 ft)	W/B Riosa N/B SR 65 532+00 to 645+00	NF	NF
		4.3 m (14 ft)	304.8 m (1,000 ft)	W/B Riosa N/B SR 65 532+00 to 645+00	NF	NF
		4.6 m (16 ft)	304.8 m (1,000 ft)	W/B Riosa N/B SR 65 532+00 to 645+00	NF	NF

[1]City of Lincoln sewage facility left unshielded
NF Not Feasible, NR No Receptors

Table 4-12 Soundwalls Evaluated for Abatement Alternative AAC2

Sound Wall	Recvr(s) Protected	SW Height	Length (ft)	SW Location Description	Total Reasonable Allowance	Engineers estimate
C2.1	19 (Comm.)	3.0 m (10 ft)	671 m (2,200 ft)	N/B SR 65 to Ferrari Ranch Off-Ramp 165+00 to 187+00	NR	NR
		3.6 m (12 ft)	671 m (2,200 ft)	N/B SR 65 to Ferrari Ranch Off-Ramp 165+00 to 187+00	NR	NR
		4.3 m (14 ft)	671 m (2,200 ft)	N/B SR 65 to Ferrari Ranch Off-Ramp 165+00 to 187+00	NR	NR
		4.6 m (16 ft)	671 m (2,200 ft)	N/B SR 65 to Ferrari Ranch Off-Ramp 165+00 to 187+00	NR	NR
C2.2	20, 29 (3-D Dev.)	3.0 m (10 ft)	1859 m (6,100 ft)	W/B Ferrari Ranch to N/B SR 65 187+00 to 248+00	NF	NF
		3.6 m (12 ft)	1859 m (6,100 ft)	W/B Ferrari Ranch to N/B SR 65 187+00 to 248+00	$1,591,000	$1,579,900
		4.3 m (14 ft)	1859 m (6,100 ft)	W/B Ferrari Ranch to N/B SR 65 187+00 to 248+00	$1,591,000	$1,843,300
		4.6 m (16 ft)	1859 m (6,100 ft)	W/B Ferrari Ranch to N/B SR 65 187+00 to 248+00	$1,591,000	$2,764,900
C2.3[1]	30 (3-D Dev)	3.0 m (10 ft)	975 m (3,200 ft)	S/B SR 65 248+00 to 216+00	$1,400,000	$690,700

Sound Wall	Recvr(s) Protected	SW Height	Length (ft)	SW Location Description	Total Reasonable Allowance	Engineers estimate
		3.6 m (12 ft)	975 m (3,200 ft)	S/B SR 65 248+00 to 216+00	$1,480,000	$828,800
		4.3 m (14 ft)	975 m (3,200 ft)	S/B SR 65 248+00 to 216+00	$1,480,000	$967,000
		4.6 m (16 ft)	975 m (3,200 ft)	S/B SR 65 248+00 to 216+00	$1,560,000	$1,450,400
C2.4	18	3.0 m (10 ft)	671 m (2,200 ft)	E/B SR 65 Ferrari Ranch to S/B SR 65 187+00 to 165+00	$2,220,000	$474,900
		3.6 m (12 ft)	671 m (2,200 ft)	E/B SR 65 Ferrari Ranch to S/B SR 65 187+00 to 165+00	$2,220,000	$569,800
		4.3 m (14 ft)	671 m (2,200 ft)	E/B SR 65 Ferrari Ranch to S/B SR 65 187+00 to 165+00	$2,340,000	$664,800
		4.6 m (16 ft)	671 m (2,200 ft)	E/B SR 65 Ferrari Ranch to S/B SR 65 187+00 to 165+00	$2,340,000	$997,200
C2.5	15,21	3.0 m (10 ft)	1402 m (4,600 ft)	N/B SR 65 to Nicolaus Off-Ramp 257+00 to 303+00	NF	NF
		3.6 m (12 ft)	1402 m (4,600 ft)	N/B SR 65 to Nicolaus Off-Ramp 257+00 to 303+00	NF	NF
		4.3 m (14 ft)	1402 m (4,600 ft)	N/B SR 65 to Nicolaus Off-Ramp 257+00 to 303+00	$2,145,000	$1,390,000
		4.6 m (16 ft)	1402 m (4,600 ft)	N/B SR 65 to Nicolaus Off-Ramp 257+00 to 303+00	$2,145,000	$2,085,000
C2.6nb	25	3.0 m (10 ft)			NF	NF
		3.6 m (12 ft)			NF	NF
		4.3 m (14 ft)			NF	NF
		4.6 m (16 ft)			NF	NF
C2.6sb[2]	16a	3.0 m (10 ft)	1494 m (4,900 ft)	S/B SR 65 Venture to Nicolaus OR 303+00 to 352+00	NF	NF
		3.6 m (12ft)	1494 m (4,900 ft)	S/B SR 65 Venture to Nicolaus OR 303+00 to 352+00	NF	NF
		4.3 m (14 ft)	1494 m (4,900 ft)	S/B SR 65 Venture to Nicolaus OR 303+00 to 352+00	NF	NF
		4.6 m (16 ft)	1494 m (4,900 ft)	S/B SR 65 Venture to Nicolaus OR 303+00 to 352+00	$1,050,000	$2,221,000
C2.6sb[3] (altern)	16a	3.0 m (10 ft)	610 m (2,000 ft)	S/B SR 65 335+00 to 355+00	NF	NF
		3.6 m (12ft)	610 m (2,000 ft)	S/B SR 65 335+00 to 355+00	NF	NF
		4.3 m (14 ft)	610 m (2,000 ft)	S/B SR 65 335+00 to 355+00	NF	NF
		4.6 m (16 ft)	610 m (2,000 ft)	S/B SR 65 335+00 to 355+00	$700,000	$906,500
C2.7[4]	22,23,30 (Lincoln West Dev)	3.0 m (10 ft)	1311 m (4,300 ft)	E/B Nicolaus to S/B SR 65 303+00 to 260+00	NF	NF
		3.6 m (12 ft)	1311 m (4,300 ft)	E/B Nicolaus to S/B SR 65 303+00 to 260+00	NF	NF
		4.3 m (14 ft)	1311 m (4,300 ft)	E/B Nicolaus to S/B SR 65 303+00 to 260+00	NF	NF
		4.6 m (16 ft)	1311 m (4,300 ft)	E/B Nicolaus to S/B SR 65 303+00 to 260+00	$1,855,000	$1,949,000
C.2.12	10a	3.0 m (10 ft)			NF	NF
		3.6 m (12 ft)			NF	NF
		4.3 m (14 ft)			NF	NF
		4.6 m (16 ft)			NF	NF
C2.13	10b	3.0 m (10 ft)	304.8 m (1,000 ft)	E/B Wise Road near SR 65	NR	NR
		3.6 m (12 ft)	304.8 m (1,000 ft)	E/B Wise Road near SR 65	NR	NR

Sound Wall	Recvr(s) Protected	SW Height	Length (ft)	SW Location Description	Total Reasonable Allowance	Engineers estimate
		4.3 m (14 ft)	304.8 m (1,000 ft)	E/B Wise Road near SR 65	NR	NR
		4.6 m (16 ft)	304.8 m (1,000 ft)	E/B Wise Road near SR 65	NR	NR
C2.10	4	3.0 m (10 ft)	6187 m (20,300 ft)	N/B SR 65 450+00 to 650+00	NR	NR
		3.6 m (12 ft)	6187 m (20,300 ft)	N/B SR 65 450+00 to 650+00	NR	NR
		4.3 m (14 ft)	6187 m (20,300 ft)	N/B SR 65 450+00 to 650+00	NR	NR
		4.6 m (16 ft)	6187 m (20,300 ft)	N/B SR 65 450+00 to 650+00	NR	NR
C2.11	5	3.0 m (10 ft)	5060 m (16,600 ft)	S/B SR 65 650+00 to 490+00	$74,000	$3,582,900
		3.6 m (12 ft)	5060 m (16,600 ft)	S/B SR 65 650+00 to 490+00	$74,000	$4,299,400
		4.3 m (14 ft)	5060 m (16,600 ft)	S/B SR 65 650+00 to 490+00	$78,000	$5,016,000
		4.6 m (16 ft)	5060 m (16,600 ft)	S/B SR 65 650+00 to 490+00	$78,000	$7,524,000
C2.8	2	3.0 m (10 ft)			NF	NF
		3.6 m (12 ft)			NF	NF
		4.3 m (14 ft)			NF	NF
		4.6 m (16 ft)			NF	NF
C2.9	1	3.0 m (10 ft)			NF	NF
		3.6 m (12 ft)			NF	NF
		4.3 m (14 ft)			NF	NF
		4.6 m (16 ft)			NF	NF

[1] Southwest quad of SR 65 @ Ferrari Ranch is commercial (NR-26)
[2] 16b NF for all heights
[3] Shields 16a only
[4] If homes are condemned west of SR 65 from station 289+00 to 275+00 soundwalls may be dropped for this segment. Undetermined at this time
NF- Not Feasible, NR- No Receptors

Table 4-13 Soundwalls Evaluated for Abatement Alternative D1

Sound Wall	Recvr(s) Protected	SW Height	Length (ft)	SW Location Description	Total Reasonable Allowance	Engineers estimate
D1.1	19 (Comm.)	3.0 m (10 ft)	671 m (2,200 ft)	N/B SR65 to Ferrari Ranch Off-Ramp 168+00 to 190+00	NR	NR
		3.6 m (12ft)	671 m (2,200 ft)	N/B SR65 to Ferrari Ranch Off-Ramp 168+00 to 190+00	NR	NR
		4.3 m (14 ft)	671 m (2,200 ft)	N/B SR65 to Ferrari Ranch Off-Ramp 168+00 to 190+00	NR	NR
		4.6m (16 ft)	671 m (2,200 ft)	N/B SR65 to Ferrari Ranch Off-Ramp 168+00 to 190+00	NR	NR
D1.2a[1]	20	3.0 m (10 ft)	610 m (2,000ft)	W/B Ferrari Ranch to N/B SR65 190+00 to 210+00	NF	NF
		3.6 m (12ft)	610 m (2,000ft)	W/B Ferrari Ranch to N/B SR65 190+00 to 210+00	NF	NF
		4.3 m (14 ft)	610 m (2,000ft)	W/B Ferrari Ranch to N/B SR65 190+00 to 210+00	$700,000	$604,400
		4.6 m (16ft)	610 m (2,000ft)	W/B Ferrari Ranch to N/B SR65 190+00 to 210+00	$700,000	$906,500
D1.2b[1]	29 (3-D Dev.)	3.0 m (10 ft)	610 m (2,000ft)	N/B SR65 220+00 to 240+00	NF	NF
		3.6 m (12ft)	610 m (2,000ft)	N/B SR65 220+00 to 240+00	$805,000	$518,000

Sound Wall	Recvr(s) Protected	SW Height	Length (ft)	SW Location Description	Total Reasonable Allowance	Engineers estimate
		4.3 m (14 ft)	610 m (2,000ft)	N/B SR65 220+00 to 240+00	$851,000	$604,400
		4.6m (16 ft)	610 m (2,000ft)	N/B SR65 220+00 to 240+00	$851,000	$906,500
D1.3[2]	30 (3-D Developm ent)	3.0 m (10 ft)	610 m (2,000ft)	S/B SR65 240+00 to 220+00	$1,400,000	$431,700
		3.6 m (12ft)	610 m (2,000ft)	S/B SR65 240+00 to 220+00	$1,480,000	$518,000
		4.3 m (14 ft)	610 m (2,000ft)	S/B SR65 240+00 to 220+00	$1,480,000	$604,400
		4.6 m (16ft)	610 m (2,000ft)	S/B SR65 240+00 to 220+00	$1,560,000	$906,500
D1.4	18	3.0 m (10 ft)	671 m (2,200 ft)	E/B Ferrari Ranch to S/B SR65 190+00 to 168+00	$2,100,000	$474,900
		3.6 m (12ft)	671 m (2,200 ft)	E/B Ferrari Ranch to S/B SR65 190+00 to 168+00	$2,100,000	$569,800
		4.3 m (14 ft)	671 m (2,200 ft)	E/B Ferrari Ranch to S/B SR65 190+00 to 168+00	$2,100,000	$664,800
		4.6 m (16ft)	671 m (2,200 ft)	E/B Ferrari Ranch to S/B SR65 190+00 to 168+00	$2,220,000	$997,200
D1.5	14	3.0 m (10 ft)	671 m (2,200 ft)	N/B65 249+00 to 271+00	$37,000	$474,900
		3.6 m (12ft)	671 m (2,200 ft)	N/B65 249+00 to 271+00	$37,000	$569,800
		4.3 m (14 ft)	671 m (2,200 ft)	N/B65 249+00 to 271+00	$39,000	$664,800
		4.6 m (16ft)	671 m (2,200 ft)	N/B65 249+00 to 271+00	$39,000	$997,200
D1.6	13	3.0 m (10 ft)	823 m (2,700ft)	N/B65 322+00 to 349+00	$1,036,000	$582,800
		3.6 m (12ft)	823 m (2,700ft)	N/B65 322+00 to 349+00	$1,036,000	$699,300
		4.3 m (14 ft)	823 m (2,700ft)	N/B65 322+00 to 349+00	$1,092,000	$815,900
		4.6 m (16ft)	823 m (2,700ft)	N/B65 322+00 to 349+00	$1,092,000	$1,223,800
D1.11	12	3.0 m (10 ft)			NF	NF
		3.6 m (12ft)			NF	NF
		4.3 m (14 ft)			NF	NF
		4.6 m (16ft)			NF	NF
D1.10	7	3.0 m (10 ft)	1433 m (4,700ft)	N/B SR65 505+00 to 552+00	NF	NF
		3.6 m (12ft)	1433 m (4,700ft)	N/B SR65 505+00 to 552+00	NF	NF
		4.3 m (14 ft)	1433 m (4,700ft)	N/B SR65 505+00 to 552+00	NF	NF
		4.6 m (16f ft)	1433 m (4,700ft)	N/B SR65 505+00 to 552+00	NF	NF
D1.7	4	3.0 m (10 ft)	823 m (2,700ft)	N/B SR65 621+00 to 648+00	NF	NF
		3.6 m (12ft)	823 m (2,700ft)	N/B SR65 621+00 to 648+00	$35,000	$699,300
		4.3 m (14 ft)	823 m (2,700ft)	N/B SR65 621+00 to 648+00	$35,000	$815,900
		4.6 m (ft)	823 m (2,700ft)	N/B SR65 621+00 to 648+00	$35,000	$1,223,800
D1.9	2	3.0 m (10 ft)	427 m (1,400ft)	W/B Riosa Rd to N/B SR65 691+00 to 701+00	$210,000	$302,200
		3.6 m (12ft)	427 m (1,400ft)	W/B Riosa Rd to N/B SR65 691+00 to 701+00	$210,000	$362,600
		4.3 m (14 ft)	427 m (1,400ft)	W/B Riosa Rd to N/B SR65 691+00 to 701+00	$210,000	$423,100
		4.6 m (16 ft)	427 m (1,400ft)	W/B Riosa Rd to N/B SR65 691+00 to 701+00	$222,000	$634,600
D1.8	1	3.0 m (10 ft)	1372 m (4,500ft)	N/B SR65 705+00 to 750+00	NR	NR
		3.6 m (12ft)	1372 m (4,500ft)	N/B SR65 705+00 to 750+00	NR	NR
		4.3 m (14 ft)	1372 m (4,500ft)	N/B SR65 705+00 to 750+00	NR	NR

Sound Wall	Recvr(s) Protected	SW Height	Length (ft)	SW Location Description	Total Reasonable Allowance	Engineers estimate
		4.6 m (16 ft)	1372 m (4,500ft)	N/B SR65 705+00 to 750+00	NR	NR

[1] Section of SR65 traverses thru Ag land, [2] SW quad of SR65/Woodside I/C is commercial
NF Not Feasible, NR No Receptors

Table 4-14 Soundwalls Evaluated for Abatement Alternative D13

Sound Wall	Recvr(s) Protected	SW Height	Length (ft)	SW Location Description	Total Reasonable Allowance	Engineers estimate	Soundwall Reasonable & Feasible
D13.1	19 (Comm.)	3.0 m (10 ft)	671 m (2,200 ft)	N/B SR65 to Ferrari Ranch Off-Ramp 664+00 to 686+00	NF	NF	No
		3.6 m (12 ft)	671 m (2,200 ft)	N/B SR65 to Ferrari Ranch Off-Ramp 664+00 to 686+00	$1,890,000	$569,800	No
		4.3 m (14 ft)	671 m (2,200 ft)	N/B SR65 to Ferrari Ranch Off-Ramp 664+00 to 686+00	$1,890,000	$664,800	yes
		4.6 m (16 ft)	671 m (2,200 ft)	N/B SR65 to Ferrari Ranch Off-Ramp 664+00 to 686+00	$1,998,000	$997,200	yes
D13.2	20, 29 (3D Dev)	3.0 m (10 ft)	1859 m (6,100 ft)	W/B Ferrari Ranch to N/B SR65 686+00 to 747+00	NF	NF	No
		3.6 m (12 ft)	1859 m (6,100 ft)	W/B Ferrari Ranch to N/B SR65 686+00 to 747+00	NF	NF	No
		4.3 m (14 ft)	1859 m (6,100 ft)	W/B Ferrari Ranch to N/B SR65 686+00 to 747+00	$1,505,000	$1,843,300	no
		4.6 m (16 ft)	1859 m (6,100 ft)	W/B Ferrari Ranch to N/B SR65 686+00 to 747+00	$1,591,000	$2,764,900	no
D13.3	30(3-D Dev	3.0 m (10 ft)	1036 m (3,400 ft)	S/B SR65 746+00 to 712+00	NF	NF	No
	26 (Lincoln Crossing)	3.6 m (12 ft)	1036 m (3,400 ft)	S/B SR65 746+00 to 712+00	$1,400,000	$880,600	Yes
		4.3 m (14 ft)	1036 m (3,400 ft)	S/B SR65 746+00 to 712+00	$1,480,000	$1,027,400	Yes
		4.6 m (16 ft)	1036 m (3,400 ft)	S/B SR65 746+00 to 712+00	$1,480,000	$1,541,100	no
D13.4	18	3.0 m (10 ft)	671 m (2,200 ft)	E/B Ferrari Ranch to S/B SR65 686+00 to 664+00	NF	NF	No
		3.6 m (12 ft)	671 m (2,200 ft)	E/B Ferrari Ranch to S/B SR65 686+00 to 664+00	$2,220,000	$569,800	yes
		4.3 m (14 ft)	671 m (2,200 ft)	E/B Ferrari Ranch to S/B SR65 686+00 to 664+00	$2,220,000	$664,800	Yes
		4.6 m (16 ft)	671 m (2,200 ft)	E/B Ferrari Ranch to S/B SR65 686+00 to 664+00	$2,340,000	$997,200	Yes
D13.6	27,28	3.0 m (10 ft)	488 m (1,600 ft)	N/B SR65 765+00 to 781+00	NF	NF	No
		3.6 m (12 ft)	488 m (1,600 ft)	N/B SR65 765+00 to 781+00	NF	NF	No
		4.3 m (14 ft)	488 m (1,600 ft)	N/B SR65 765+00 to 781+00	$2,960,000	$483,500	No
		4.6 m (16 ft)	488 m (1,600 ft)	N/B SR65 765+00 to 781+00	$3,120,000	$725,200	Yes
D13.11	14	3.0 m (10 ft)	610 m (2,000 ft)	S/B SR65 783+00 to 763+00	NF	NF	No
		3.6 m (12 ft)	610 m (2,000 ft)	S/B SR65 783+00 to 763+00	NF	NF	No
		4.3 m (14 ft)	610 m (2,000 ft)	S/B SR65 783+00 to 763+00	NF	NF	No
		4.6 m (16 ft)	610 m (2,000 ft)	S/B SR65 783+00 to 763+00	NF	NF	No
D13.10	13	3.0 m (10 ft)	427 m (1,400 ft)	N/B SR65 833+00 to 847+00	NF	NF	No
		3.6 m (12 ft)	427 m (1,400 ft)	N/B SR65 833+00 to 847+00	NF	NF	No
		4.3 m (14 ft)	427 m (1,400 ft)	N/B SR65 833+00 to 847+00	NF	NF	No

Sound Wall	Recvr(s) Protected	SW Height	Length (ft)	SW Location Description	Total Reasonable Allowance	Engineers estimate	Soundwall Reasonable & Feasible
		4.6 m (16 ft)	427 m (1,400 ft)	N/B SR65 833+00 to 847+00	NF	NF	No
D13.9	11	3.0 m (10 ft)	2438 m (8,000 ft)	N/B SR65 915+00 to 1005+00	NF	NF	No
		3.6 m (12 ft)	2438 m (8,000 ft)	N/B SR65 915+00 to 1005+00	NF	NF	No
		4.3 m (14 ft)	2438 m (8,000 ft)	N/B SR65 915+00 to 1005+00	NF	NF	No
		4.6 m (16 ft)	2438 m (8,000 ft)	N/B SR65 915+00 to 1005+00	NF	NF	No
D13.8	7	3.0 m (10 ft)	518 m (1,700 ft)	S/B SR65 1043+00 to 1060+00	NF	NF	No
		3.6 m (12 ft)	518 m (1,700 ft)	S/B SR65 1043+00 to 1060+00	NF	NF	No
		4.3 m (14 ft)	518 m (1,700 ft)	S/B SR65 1043+00 to 1060+00	NF	NF	No
		4.6 m (16 ft)	518 m (1,700 ft)	S/B SR65 1043+00 to 1060+00	NF	NF	No
D13.5	4	3.0 m (10 ft)	945 m (3,100 ft)	N/B SR65 1145+00 to 1176+00	NF	NF	No
		3.6 m (12 ft)	945 m (3,100 ft)	N/B SR65 1145+00 to 1176+00	$35,000	$802,900	No
		4.3 m (14 ft)	945 m (3,100 ft)	N/B SR65 1145+00 to 1176+00	$35,000	$936,800	No
		4.6 m (16 ft)	945 m (3,100 ft)	N/B SR65 1145+00 to 1176+00	$35,000	$1,405,100	No

NF- Not Feasible, NR- No Receptors

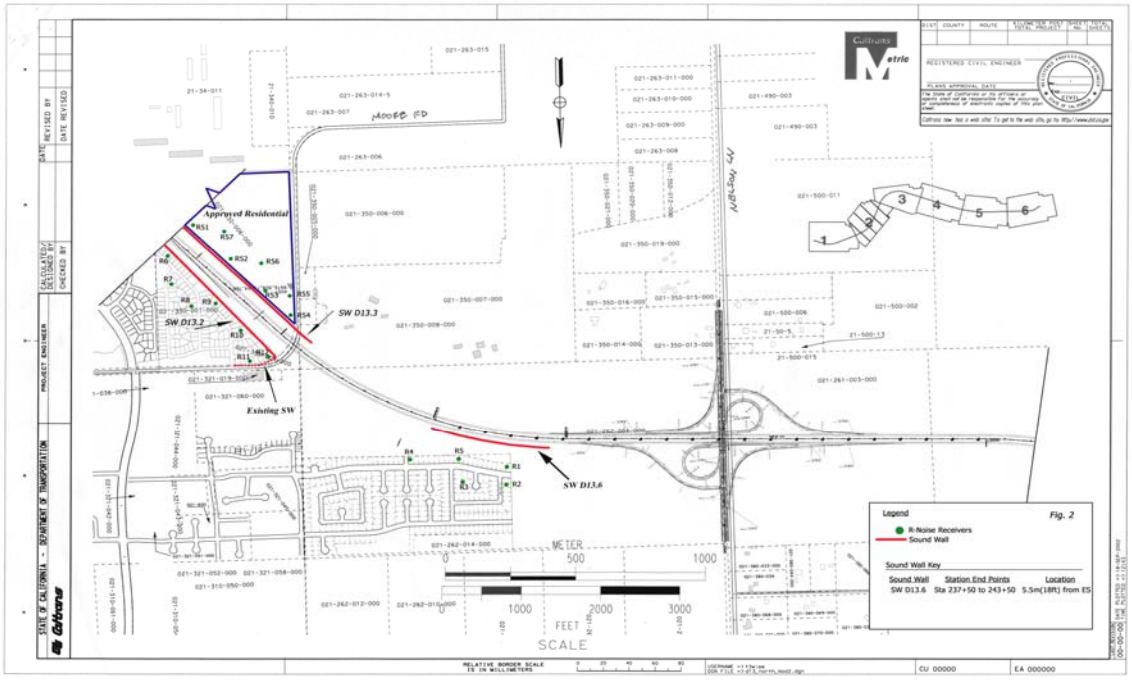
4.5.3 Preliminary Noise Abatement Decision (Soundwall Descriptions)

Based on the studies completed and public and local government comment, Caltrans intends to incorporate noise abatement measures in the form of sound walls at the locations identified in Table 4-15. It is noted the City of Lincoln is not in favor of a sound wall shielding the proposed community park, located at SR65 and Ferrari Ranch Road, due to public safety concerns arising from potential illicit activity. Modeling based on current design data indicates that the barriers would result in a noise level reduction of 5 dBA to 11 dBA. If, during final design conditions have substantially changed, noise barriers may either be modified or not provided. The final decision of the noise barriers will be made upon completion of the project design and the public involvement process.

Table 4-15 Proposed Soundwalls

	Sound Wall	Height (ft)	Length (ft)	SW Location Description
D13	D13.2	4.3 m (14 ft)	1090 m (3575 ft)	N/B SR65 ES 221+60 to 223+00, N/B SR65 R/W Line 223+00 to 232+50
	D13.3	Ht. Varies	1780m (3838 ft)	SB SR65 R/W Line 233+00 to 217+30 = 4.3m(14 ft), 217+30 to 215+20 = 4.9m(16 ft)
	D13.4	Ht. Varies	1030 m (3378 ft)	S/B SR65 ES 214+80 to 213+30 = 4.3m(14 ft), 213+30 to 211+40 = 3.7m (12 ft), 211+40 to 204+50 = 3.0 m (10 ft)
	D13.6	4.9 m (16 ft)	600 m (1,968 ft)	N/B SR65 5.5m from ES 237+50 to 243+50

Figure 4-1 Sound Barrier Locations



4.5.4 Construction Noise Impacts

Two types of short-term noise impacts would occur during construction of the project. First, construction crew commutes and the transport of construction equipment and materials to the project site would incrementally increase noise levels on access roads leading to the site. The pieces of heavy equipment for grading and construction activities will be moved on site, will remain for the duration of each construction phase and will not add to the daily traffic volume. When added to the current traffic volumes along SR 65 and Main Street, the projected volume of construction traffic will be small and its associated long-term noise level change will not be perceptible. However, there will be a relatively high single event noise exposure potential with passing trucks at a maximum level of 87 dBA L_{max} at 15.24 m (50 ft).

The second type of short-term noise impact is related to noise generated during excavation, grading and building erection on the project site. Construction of the proposed project is expected to require the use of earthmovers, bulldozers, water and pickup trucks. Noise typically associated with the use of construction equipment is estimated between 79 and 89 dBA at a distance of 50 feet from the project site for the grading phase.

Construction noise impact abatement

Initial construction has the potential to create noise impacts at the homes located along SR 65 and avoidance and minimization measures are warranted to reduce these impacts to the extent feasible. Implementation of these measures would reduce construction noise impacts. Applicable measures include the following:

- Standard practice requires that construction be restricted to between the hours of 7:00 a.m. and 7:00 p.m. (8:00 a.m. and 7:00 p.m. on Saturdays) and not permitted on Sundays and Federal holidays.
- All construction equipment must conform to the provisions of the Department Standard Specifications, Section 7-10/I; "Sound Control Requirements." This section requires the contractor to comply with all local rules and regulations (i.e., City of Lincoln and Placer County) that apply to any work as part of the contract.
- Portable equipment will be located as far as possible from noise sensitive locations as is feasible.
- Construction vehicle staging areas and equipment maintenance areas will be located as far as possible from sensitive receptor locations.

4.6 WATER QUALITY

This section summarizes the Water Quality Assessment Report, which documents the streams, lakes, rivers and other receiving waters that could be affected by this project and the potential impacts on those waters by the construction and maintenance of each alternative. In addition, this section evaluates the project for compliance with the Sole Source Aquifer (SSA) program and the Drinking Water Source Assessment and Protection (DWSAP) program.

Other regulatory requirements discussed below are the USACE Section 404 permit, the California Department of Fish and Game 1602 Agreement, and the California Regional Water Quality Control Board Section 401 water quality certification and the National Pollution Discharge Elimination System (NPDES) permit.

In Section 4.8, Natural Resources, the impacts of the project on water quality are discussed as they pertain to the natural resources and protected species.

Potential impacts for this project can be divided into those associated with short-term construction activities and long-term operations and maintenance activities. The construction activities discussed below would apply to all of the build alternatives, while the operation activities would apply to all the "build" and "no build" alternatives.

4.6.1 Regulatory Requirements

The National Pollution Discharge Elimination System (NPDES) was established by the EPA and implemented by the states Regional Water Quality Control Boards. Caltrans currently has a statewide permit for the NPDES program. Caltrans has developed a State Storm Water Management Plan (SWMP) designed to reduce the discharge of pollutants associated with storm water and non-storm water to the maximum extent practicable. The SWMP describes how Caltrans will comply with NPDES requirements through the application of various Best Management Practices (BMPs). BMPs include those practices that provide pollution control benefit, are feasible to implement and meet legal and legislative funding restraints (Camp, Dresser & McKee 1999).

In addition to BMPs, the SWMP requires a Storm Water Pollution Prevention Plan (SWPPP) for projects where the impacts are greater than 2 ha (5 ac). Requirements of permits and plans would be followed in accordance with the States SWMP addressing erosion control and sediment control management. This project would require submittal of a SWPPP from the construction Contractor prior to the start of construction activities. The SWPPP will address water pollution controls during construction. The SWPPP specifies measures to prevent soil, sediments, construction materials, and fluids from being carried off the site by storm water. Such measures typically include: covering stockpiles with polyethylene materials; placement of sediment trapping devices surrounding drainage inlets and storm drain openings as well as the toe of slopes; and use of temporary, on-site storage systems for contaminated waters and excavated materials. Additionally, the SWPPP would identify locations where lubricants, fuels, reinstates, and other fluids are to be handled, and discuss measures to be implemented for controlling spills

Other regulatory/permit requirements are the USACE Section 404 permit, the California Department of Fish and Game Section 1602 Stream Bed Alteration Agreement and the California Regional Water Quality Control Board Section 401 water quality certification. These requirements are discussed in more depth in the Natural Resources section. Measures to comply with permit requirements as they pertain to water quality are discussed below.

4.6.2 Impacts on Sole Source Aquifers or Well Head Protection Areas

To help prevent groundwater contamination, the EPA has established the Sole Source Aquifer (SSA) program. The SSA program was established to increase public awareness of groundwater resources and help prevent contamination of aquifers that are the only available local or regional source of drinking water and supply more than 50

percent of a community's drinking water. The EPA web site listing the SSA in California was consulted and showed no sole source aquifer in Placer County (EPA, 1999).

The State of California Department of Health Services (DHS) recently developed the Drinking Water Source Assessment and Protection Program (DWSAP) program to help protect drinking water wells from contamination. All public water supply wells used for domestic purposes will be subject to the DWSAP. This program evaluates individual wells' susceptibility for potential contamination caused by existing conditions (e.g., underground tanks, septic systems, etc.), and provides guidelines to evaluate the potential impacts of proposed projects such as the Lincoln Bypass.

4.6.3 Groundwater Impacts

The only penetration into the water table that would be anticipated as part of any build alternatives would be support piles and footings for bridges and structures. These minor and isolated intrusions are not expected to impact the quality of groundwater.

Wells within the proposed right-of-way will be treated in accordance with the requirements set forth in the Highway Design Manual (Caltrans 1992) and other California codes. (See Figure 3-14 in Chapter 3) Municipal wells are required to have wellhead protection areas delineated under the State of California Department of Health Services DWSAP program. These protection areas can be delineated in a site-specific manner or in a more general calculated fixed radius (CFR) method. Until the City of Lincoln completes their delineation, the CFR minimum distances will be considered in the design: 183 m (600 ft) for Zone A (microbiological), 305 m (1,000 ft) for Zone B5 (chemical), and 457 m (1,500 ft) for Zone B10 (chemical). The final delineation of the wellhead protection areas is anticipated to be complete before the Department completes designing the preferred alternative. Wells are shown in Figure 3-14 in Chapter 3. Additional municipal wells may need to be provided for the water supply for the City of Lincoln. This is not expected to impact the quality of ground water.

Impacts to groundwater for all of the alternatives are minor. The remainder of this water quality section focuses on surface water quality impacts.

4.6.4 Construction Impacts

Suspended material caused by erosion in storm water runoff is considered by Caltrans as a pollutant of primary importance. Project construction activities such as grading and vegetation removal would result in soil and ground disturbances, creating loose or unprotected soil that could be transported by surface runoff or wind to nearby watercourses. Such increases in sediment and turbidity could negatively affect receiving water quality. These impacts have the potential to occur for the duration of construction

activities. Beneficial uses that could be affected include REC-1, REC-2, WARM, COLD, WILD, MIGR and SPWN[1].

The following construction activities would be part of any of the build alternatives, and may contribute to increases in sediment, turbidity, and floating materials to receiving waters:

- **Daily contractor activity** - Routine construction activities such as material delivery, storage and usage, waste management, vehicle/equipment cleaning and operation and use of a construction staging area could result in generation of dust, sediments and debris.
- **Vegetation removal/trimming** - Removal or trimming of vegetation would be required for both construction and access. This activity would eliminate the groundcover that protects the topsoil. Exposed topsoil would be more susceptible to erosion. Additionally, trimmings could fall or be carried by runoff into surface waters, resulting in introduction of floating material and the potential for increased organic loading to the creeks.
- **Grading** - Grading would include removal of the natural and/or stabilizing cover (topsoil) and the creation of engineered slopes using fill material. Prior to establishment of temporary or permanent erosion control measures, graded material would be highly susceptible to erosion.
- **Temporary roads** - Construction of temporary roads would require grading, vegetation removal and other changes to the topography and drainage characteristics of the watershed. These temporary roads are typically composed of native material and/or aggregate base rock.
- **Activities within the creek corridor** - Construction of culverts, bridges and viaducts require an extensive presence in stream corridors. These activities may also require construction of temporary access roads; temporary cofferdams and/or jetties to re-route the watercourses.
- **De-watering** - Construction may require localized de-watering in areas of shallow groundwater. De-watering activities would be continuous but temporary for the duration of work in a particular area. Discharged groundwater may be high in turbidity.

[1] The beneficial uses for the two watersheds are: MUN = Municipal, AGR I = Agricultural Irrigation, AGR S = Ag. Stock Watering, POW = Industry Power, REC-1 = Recreation Contact, REC-2 = Other Non-Contact Recreation, WARM = Freshwater Habitat Warm, COLD = Freshwater Habitat Cold, MIGR(W) = Migration Warm, MIGR(C) = Migration Cold, SPWN(W) = Spawning Warm, SPWN(C) = Spawning Cold, and WILD = Wildlife Habitat.

- **Construction of temporary structures** - To support construction equipment, laborers and construction forms, it would be necessary to erect falsework. Falsework is typically constructed of wood and metal connectors. Although the majority of woodcutting would take place outside of the stream corridors, some woodcutting would be necessary as the falsework is erected. This woodcutting could introduce sawdust to surface waters. Disassembly of the falsework may result in small pieces of wood, nails and metal cuttings entering creeks.
- **Seeding and application of fertilizers and nutrients** - To prepare the ground for temporary and/or permanent cover and promote better growth, fertilizers and plant nutrients may be applied before and after planting. In the early stages of the seeding process, surface runoff could wash some of the re-vegetation material, fertilizers, nutrients and seeds into surface waters.

Avoidance and minimization of Construction impacts due to erosion

To address these potential water quality impacts, Caltrans would require the contractor to use a combination of BMPs during construction through the Plans, Specification and Estimates (PS&E) documents. BMPs include temporary erosion controls such as silt fencing, fiber rolls and drill seeding with tackifier, which will be used during the construction process as required to preserve water quality. The Department would include special provisions in the PS&E for this project requiring the contractor to prepare and implement a Storm Water Pollution Prevention Plan (SWPPP), and other project specific Standard Special Provisions (SSP).

The purpose of the BMP is to stabilize disturbed soil, to minimize erosion and to capture and remove sediment suspended in runoff before the runoff leaves the site. These measures would provide a high degree of protection to the local receiving waters from discharge of sediment during construction. With the implementation of Caltrans standard practices and procedures, all of the build alternatives have minimized impacts from construction-induced erosion.

4.6.5 Construction impacts from Oil, Greases, and Chemical Contamination

Construction activities may introduce chemicals, oils and greases that could be carried by surface runoff to surface water if not properly managed. These impacts have the potential to occur for the duration of construction activities. Beneficial uses that could be impacted include REC-1, REC-2, WARM, COLD, RARE, MIGR and SPWN. The following construction activities would be part of any of the build alternatives:

- **Cement and grout** - As part of the bridge construction process, concrete and grout work would take place within stream corridors. Spillage of concrete and grout into

receiving waters during bridge construction could increase turbidity and alter the pH.

- **Application and storage of chemicals** - Accidental spills, improper storage, and improper application of chemicals during construction could potentially impact water quality. Chemicals such as herbicides and fertilizers could also be washed into the creeks. Herbicides could be poisonous to fish and aquatic plants. Conversely, fertilizers may promote algae growth, which would reduce dissolved oxygen levels.
- **Application and storage of oils, greases and fuels** - Improper storage of oils and fuels could result in accidental spills and/or leaks within the construction area. Accidental spills during refueling and maintenance of construction vehicles and equipment could occur. Surface runoff could transport these materials to the local creeks. Similarly, application of petroleum chemicals during road construction could be washed into surface waters. These materials could have toxic effects on aquatic organisms.

Avoidance and Minimization of Construction impacts from Oil, Grease or chemical contamination

Caltrans SSP prohibit the contractor from discharging oils, greases or chemicals into receiving waters. For example, on this project, equipment operating in water bodies would be required to be steam cleaned prior to arrival on site and be maintained in a clean condition during the length of activities. With implementation of the BMPs and SSPs, none of the build alternatives would have a negative impact on the environment from construction-induced oils, greases and chemicals.

4.6.6 Construction Impacts Due To Increases in Water Temperature

Certain construction activities may contribute to short-term temperature changes of the surface water. Beneficial uses that could be affected include COLD, MIGR and SPWN. These activities include:

- **Concrete curing** - Piers are typically constructed using reinforced concrete. Once concrete is poured in the forms, it takes up to several weeks to set - referred to as the curing period. During the curing period, concrete releases heat into its surrounding environment. Water is often used during this process to prevent the concrete from hardening too fast. To the extent that this water were to reach surface waters, it could cause a localized increase in the ambient temperature.
- **Vegetation removal/trimming** - During construction, vegetation at or near the creeks would require trimming or removal. Vegetation provides shade, which

maintains cooler water temperature in the creeks. Once vegetation is removed or trimmed, water temperatures may increase due to exposure to direct sunlight.

- **Creek realignment** - Where segments of creeks are realigned, they may not have the same canopy cover/shade as before the project. Prior to vegetation reestablishment, increases in temperature may occur.

Avoidance and Minimization for Short-Term Increases in Water Temperature

Concrete curing would occur over a period of several weeks. It is so localized in nature that it is not expected to have a major impact on water temperature.

Regarding vegetation removal/trimming and creek realignments, Caltrans will follow standard practices for minimizing the amounts of vegetation trimmed or removed at crossings. To some extent, shade provided by the new crossings would tend to offset some loss in canopy cover through trimming/removal and realignment. Measurable temperature impacts are not expected where work is done in limited areas.

Treatment of runoff, such as diverting the water to detention ponds, may be required where storm water enters sensitive receiving waters, such as vernal pools. Additional drainage studies, surveys and bridge modeling will be required to finalize project plans and minimize floodplain encroachment.

4.6.7 Long-term Impacts to Water Quality Due to Erosion

As previously mentioned, sediment is of specific concern in the project area since it is listed as a source of impairment to beneficial uses. Following the construction process, disturbed areas would be stabilized through permanent re-vegetation or other means. The Storm Water Quality Handbook-Project Planning and Design Guide (PPDG) provides detailed procedures for design of permanent slope stabilization controls. Storm runoff detention is typically provided by detention ponds accessed via roadside ditches (Caltrans 1999).

In spite of re-vegetation efforts, sediment and turbidity could effect water quality. These impacts have the potential to occur for the duration of the project operation. Beneficial uses that could be affected include REC-1, REC-2, WARM, COLD, WILD, MIGR and SPWN. The following factors may also contribute to negative impacts:

- **Hydrologic impacts** - The increase in impervious areas could cause an increase in the peak flow and higher runoff volumes that could lead to stream downcutting, stream bank erosion and loss of stream structure. The result could be an increase in sediment and turbidity in receiving waters. Along with the increase in sediment, there is an increased opportunity for pollutants such as herbicides and road pollution to enter the streams.

- **Concentration of runoff** - Typical highway drainage design involves collecting runoff in pipes or ditches and discharging, either directly or indirectly, into creeks. To the extent that localized flows were concentrated and/or altered from pre-project conditions, potential impacts would be similar to those described for increases in impervious areas.

Avoidance and Minimization for long-term impacts of erosion

To address these potential water quality impacts resulting from project hydrology and concentration of runoff, the Department would utilize permanent BMPs incorporated into the design and construction of the project in combination with BMPs during maintenance operations.

Examples of the BMPs are directing highway runoff via ditches and culverts into retention basins and grading of embankments to minimize erosion potential.

In addition, the PPDG require that the design team take into account hydrologic impacts of the project and provide measures such that stream channel stability is maintained. With these measures in place, long-term impacts due to erosion will be minimal.

4.6.8 Long-term impacts from Oils, Greases, and Chemical Contamination

Highway runoff and other long-term maintenance activities may introduce chemicals, oils and greases to surface water. Beneficial uses that could be impacted include REC-1, REC-2, WARM, COLD, WILD and SPWN. Typical highway related activity and maintenance that affect runoff quality are:

- **Highway runoff** - Contaminants generated by traffic, pavement materials and airborne particles that settle and are carried by runoff into receiving waters.
- **Accidental spills** - Spills caused by highway-related traffic accidents have the ability to cause great damage to water quality, depending on the type and quantity of the material spilled.
- **Application of chemicals** - Application of chemicals from landscaping operation and maintenance activities could potentially enter into receiving waters. Herbicides could be poisonous to fish and aquatic plants. Conversely, fertilizers may promote algae growth, which would reduce dissolved oxygen levels.

Few, if any, of the hydrocarbons (except oil and grease), volatile and semi-volatile organic compounds or pesticides/herbicides are often found in highway runoff, given the rural setting of the site. There are no large industrial (manufacturing), agri-industrial (packing plants), or agricultural operation/activities in the project area that use large amounts of solvents, pesticides or herbicides.

Table 4-16 summarizes the results of Caltrans study on pollutants of concern in typical highway runoff. Water quality objectives established for the Bear River are also presented. Constituents with mean values exceeding water quality are highlighted in bold type.

Table 4-16 Pollutants of Concern in Typical Highway Runoff

Pollutant	No. of Samples	Mean Value (mg/L)	Water Quality Objective for the Bear River (mg/L)
Barium	25	0.13	1.0
Cadmium	30	0.0009	0.005
Chromium	56	0.0082	0.05
Copper	52	0.035	1.3
Iron	27	3.76	Not listed
Lead	**35**	**0.0814**	**0.015**
Manganese	17	0.08	Not listed
Nickel	56	0.0091	0.1
Zinc	62	0.186	Not listed
Oil and Grease	Not listed	10.3	Qualitative Standard
TSS	Not listed	112	Not Available
COD	Not listed	120	Not Available
Ammonia	25	1.9	Not Available
Nitrate	33	2.8	10
TKN	37	2.6	Not Available
Phosphate	5	0.4	Not Available
Phosphorus	67	0.3	Not Available

Source: Mean Values: Brown and Caldwell, 1997; Water Quality Objectives: RWQCBCVR, 1998.

If concentrations of potential pollutants were not sufficiently diluted upon entering the receiving waters, they could potentially impact water quality. The proposed impervious surface that would create highway runoff was compared to the total area in the watershed to determine whether the proposed project would result in an increase in pollutant loading to the receiving water that would exceed the water quality objectives. Paved surfaces in Caltrans right-of-way are less than 1% of the watershed. Therefore, highway runoff would be sufficiently diluted as to not cause an impact to receiving water quality.

The watershed areas were delineated on 7.5-minute USGS topographic maps. The paved width of the highway was assumed to be 36.6 m (120 ft), the maximum paved area, even though the right-of-way may exceed this dimension in places. The results are as follows:

The **Orchard Creek watershed** above SR 65 covers approximately 17.7 km^2 (11 mi^2) (2849 ha [7040 ac]). All build alternatives will cover about 2.4 km (1.5 mi) (8.8 ha [21.8 ac]) of land. Any of the build alternatives would affect about 0.3% of the watershed.

The **Auburn Ravine watershed** above the City of Lincoln covers an area of about 53 km^2 (33 mi^2) (8547 ha [21120 ac]). The alternative that has the longest section within the Auburn Ravine watershed is D13. This alternative affects about 8.8 ha (21.8 ac) or less than 0.1% of the watershed. Other alternatives would also affect less than 0.1% of the watershed.

The **Markham Ravine watershed** above the D alternatives is about 19.3 km^2 (12 mi^2) (3108 ha [7680 ac]). The D alternatives affect about 20.6 ha (50.9 ac) or less than 0.6% of the watershed. Only 11.26 km^2 (7 mi^2) (1813 ha [4480 ac]) of the Markham Ravine watershed is above the AC alternatives. These alternatives affect about 14.6 ha (36 ac) or approximately 0.8% of the watershed.

The **Coon Creek watershed** covers over 112.6 km^2 (70 mi^2). Approximately 11.7 ha (29 ac) of land will be affected, or less than 0.1% of the watershed.

The **Yankee Slough watershed** above all of the alternatives is about 27.4 km^2 (17 mi^2) (4403 ha [10,880 ac]). The AC and D alternatives affect about 23.6 ha (58.2 ac) or approximately 0.5% of the watershed.

Avoidance and Minimization for long-term impacts of Oil, Grease and Chemical Contamination

The results demonstrate that paved surfaces in the Department's right-of-way would not be a very big percentage of the watershed. In all cases, the paved area is less than 1% of the watershed. Therefore, highway runoff would be sufficiently diluted as to not cause an impact to receiving water quality.

In addition, runoff from the highway right-of-way would be retained on-site to prevent an negative effects on the local surface and groundwater quality. When construction is complete, permanent erosion control measures and landscaping would be implemented throughout the project area. Final plans include short-term detention basins to treat the storm water run-off for run-off that cannot be separated from the sensitive receiving waters. These long ditches would be fairly flat and grass lined to slow the water and allow the grass to act as a filter, filtering out roadway pollutants. Near waterways, there will be an outlet control to hold the water and provide for more filtering. The water would not be held for longer than 72 hours so as not to become a mosquito breeding ground.

Vernal pool complexes that are cut off from sheet flow are included in the total impacts to wetlands. However, culverts will be used extensively to maintain flows to vernal pools. Environmentally Sensitive Areas (ESA's) will be established to prevent herbicides and pesticides from contaminating the vernal pools and waterways.

During final design, a more detailed evaluation will be made of the corridor hydraulics, with particular emphasis on ensuring that existing water flows are maintained. With these measures in place, long term impacts due to oil, grease and chemical contamination will be minimal and less than significant under CEQA.

4.6.9 Long-term Increases in Water Temperature

Certain activities may contribute to long-term temperature changes of the surface water after construction is complete which may affect existing water quality. Beneficial uses that could be affected include COLD, MIGR and SPWN. These activities include:

- **Increase in paved areas** - Due to continuous use and its affinity to absorb heat from sunlight, pavement surfaces may get warmer than soil. Highway runoff may be warmer than pre-project runoff temperature.
- **Creek crossings and realignments** - Where segments of creeks are crossed and possibly realigned, they may not have the same canopy cover/shade as before the project. The bridge crossings will provide permanent shade to the waterway. .

Paved surfaces in Caltrans right-of-way are less than 1% of the watershed. Therefore, it is not anticipated that increases in runoff temperatures from paved areas would lead to a measurable increase in stream temperatures and less than significant under CEQA.

4.6.10 Summary of Effects on Water Quality

Each of the alternatives will affect the water temperature and toxicity to varying degrees. The "No Build" alternative had the least effect, the AAC2 and A5C1 alternatives the next greatest effect and the D1 and D13 alternatives (including the preferred alternative), have the most effect. The magnitude of the increase in water temperature and toxicity from the bypass project is relatively small when comparing the impervious surface area of each alternative to the size of the watershed. The geographic extent of the effects is relatively small. The watersheds involved are a small segment of the Sacramento River Basin, approximately 0.5%.

The duration and frequency of the effect varies. During the first major rainfall, the toxic nature of the water is higher than any other time and the water quality objectives may be exceeded. Throughout the rest of the rainy season, the pollutant level is much lower, in most cases lower than the water quality objective. Monitoring of the water constituents would be necessary to determine when water quality objectives would be exceeded.

Water temperature would fluctuate throughout the rainy season. Whenever rain would wash into the waterways from impervious surfaces, the temperature would be higher than if it had washed from vegetated surfaces.

During construction, Caltrans Best Management Practices for Control of Water Pollution (Transportation Projects) will be implemented to minimize sedimentation. Temporary increases in sedimentation during construction are expected to be minimal.

Storm water runoff from the proposed roadway will be collected and routed into water treatment systems before discharging into drainages in the project area. The amount of pollutants discharged with storm water runoff will be minimized.

The city's monitoring program could be an effective evaluative mechanism for managing development and avoidance and minimization measures in order to maintain water quality objectives for the receiving waters. If monitoring indicated that the water exceeded toxic water quality objectives, then additional mechanisms could be instituted to limit the amount of toxic loading that enters the waterways.

4.7 FLOODPLAIN

The proposed roadway typical cross-section will be designed to provide for an all-weather route to ensure safe passage of emergency vehicles and serve as an emergency evacuation route. The minimum roadway profile grade elevation will be 1.43 m (4.7 ft) above the existing ground elevation. This profile grade will ensure that the proposed bypass will be above existing ground and provide coverage for future drainage features. At the low points, the profile will be elevated to be at least 0.9m (3 ft) above the 100-year flood level.

In general, the proposed floodplain crossings listed in Table 3-21 in Chapter 3, will include bridges over the floodway or mainstream channel. Cross culverts will be provided through any embankment within the floodplain overbank area / floodway fringe to minimize the impacts of bridge approach embankment fills within the floodplain boundaries.

The vegetation and soils along the various proposed waterway crossings are similar in nature. The erosion hazard of the soils varies from slight erosion hazard in the floodway fringes to high erosion hazard in the recent alluvium deposits adjacent to stream channels. The availability of detailed soil information will ensure that appropriate erosion control measures are included to mitigate the floodplain encroachments.

Storm water detention measures are being provided to minimize increases to the peak flows resulting from the proposed roadway construction per discussions with the Placer County Flood Control Engineer. As a detention measure, roadside ditches would be designed to provide storm runoff detention. The project will not increase downstream velocity or peak flow. The project will increase the volume of flow within the project limits due to the impervious surfaces, but should have a negligible effect on downstream

flow. Post construction flows will be kept at pre-construction conditions by detaining the flow as it drains towards their original waterway destinations either by ditches or by detention basins. Preliminary plans include detention basins at the projects' north end near Riosa Road. The paved roadway area design has been reduced to the maximum extent possible thus minimizing the amount of runoff from impervious surfaces. Earthen conveyance systems have been conceptually developed with relatively flat slopes. Consequently, velocities are expected to be very low during a 25-year design storm. Most of the watersheds share the same directional flow, i.e. flow from east to west. The proposed project's orientation is predominately north south therefore impeding most of this flow. The ditches, designed to run parallel to the highway, will return this intercepted flow to its original waterway destination thus preserving the area's natural drainage. The earthen ditches shall be vegetated and discharge into natural streams and creeks that the project traverses. Existing cross drains located at the proposed project's northern limits will be incorporated into the drainage design concepts. These cross drains are designed as siphon systems and run under the South Sutter Water District Aqueduct.

Sediment loading is considered minimal given the flattened slopes and the slope re-vegetation included as permanent BMPs. Culverts shall be fitted with Flared End Sections (FES) to facilitate grading and maintenance. Although drainage velocities are low in the longitudinal ditches, Rock Energy Dissipaters (REDs) will be provided at the outlets to retard the peak flow into local waterways and to prevent potential scour in flood conditions. Additionally, the proposed bridges will be designed to minimize downstream impacts.

To establish the estimated 100-year Base Floodplain Elevation (BFE), the Flood Insurance Rate Map Zone A floodplain boundaries were superimposed onto a USGS topographic map and the contour elevation was interpolated. The estimated 100-year BFE for the riverine flooding typical to this study is adjusted by one-half the contour interval to account for any elevation difference between the left overbank boundaries and the right overbank boundaries.

Alternative AAC2

This project alignment conforms to the existing SR 65 alignment approximately 0.5 km (0.3 mi) south of Industrial Avenue. There is no anticipated encroachment by this project onto the floodplain at the north tributary of **Orchard Creek**.

Alternative AAC2 crosses **Ingram Slough** approximately 915 m (3,000 ft) west of the existing SR 65. Ingram Slough is not designated as a 100-year floodplain. The City of Lincoln is currently constructing a new bridge on SR 65 at Ingram Slough. The bridge on the existing highway alignment will have a length of 42 m (138 ft). Additionally, the

Union Pacific Railroad is constructing a 40 m (130 ft) trestle immediately west of the existing highway alignment. The November 10, 1999 Hydraulic Evaluation for Advance Planning Study (HEAPS) by the Department's Division of Structures noted that the South Lincoln Master Drainage Plan proposes to split Ingram Slough into two reaches just west of the existing SR 65 alignment. The existing Ingram Slough channel would be abandoned.

The bridge for the south reach of the realigned Ingram Slough will be designed to clear the railroad tracks, the south reach channel and a maintenance roadway. The profile grade over the channel will be approximately 51 m (170 ft). The HEAPS estimates the 100-year BFE at 41 m (135 ft).

The north reach of the realigned Ingram Slough is at a 60-degree skew to the Lincoln Bypass alignment and would require a 91 m (300 ft) long bridge. The proposed profile grade elevation is 44 m (144 ft) compared to an estimated 100-year BFE of 42 m (137 ft).

Alignment AAC2 encroaches on the 100-year floodplain at **Auburn Ravine** in the vicinity of Moore Road for a distance of 320 m (1,050 ft). The floodplain at this location is designated Zone A with no base flood elevations determined. The HEAPS estimates a 100-year BFE of 39 m (128 ft) at the alignment AA crossing. The HEAPS for Auburn Ravine Bridge proposes bridge length of 213.4 m (700 ft). The structure would span Auburn Ravine from bank to bank with a minimum soffit elevation of 39.9 m (131 ft). This elevation would provide 0.9 m (3 ft) of freeboard, as required by the Reclamation Board, over the estimated 100-year BFE of 39 m (128 ft).

Alignment AAC2 encroaches on the 100-year floodplain at the Lower Tributary of **Markham Ravine** in a location approximately 550 m (1,800 ft) south of Nicolaus Road for a distance of 75 m (250 ft). The floodplain at this location is designated Zone AE Floodway, base flood elevations determined. The BFE at this crossing is 38.7 m (127 ft). The designated floodway for the AAC2 crossing at the Lower Tributary of Markham Ravine encompasses the entire width of the Zone AE floodplain boundaries. Any fill encroachment within the floodway would likely result in a greater than 0.3 m (1 ft) increase to the BFE. Additional studies are required if this alignment alternative is selected. Alignment AAC2 encroaches on the 100-year floodplain at Markham Ravine again approximately 335 m (1,100 ft) north of Nicolaus Road for a distance of 21 m (70 ft). The floodplain at this location is designated Zone AE Floodway. The 100-year BFE at this proposed AAC2 crossing is 37.9 m (124.5 ft). The HEAPS proposes a bridge length of 85.3 m (280 ft) for the alignment AAC2 crossing of Markham Ravine. The proposed soffit elevation is 0.9 m (3 ft) or greater than the 100-year BFE.

Alignment AAC2 encroaches on the **Coon Creek** floodplain approximately 550 m (1,800 ft) north of Wise Road for a distance of 640 m (2,100 ft). The floodplain at this location is designated Zone A. The estimated 100-year BFE is 32 m (105 ft) according to the HEAPS. The HEAPS proposes a bridge length of 76m (250 ft) at the C2 alignment crossing.

Alignment AAC2 encroaches on the **Yankee Slough** floodplain in the vicinity of Dowd Road for approximately 213 m (700 ft). The floodplain at this location is designated Zone A. The HEAPS for this alignment recommends a bridge length of 61 m (200 ft) and a minimum soffit elevation of 29 m (95 ft).

It was recommended that the proposed interchange for the Dowd Road / Dalby Road connection be located north of the existing County road intersection to minimize encroachments into the Yankee Slough 100-year floodplain.

Alignment AAC2 crosses an existing **irrigation aqueduct** approximately 488 m (1,60 ft) south of Riosa Road. The aqueduct is the jurisdiction of South Sutter Water District. A review of the proposed crossing by the District Hydraulics Branch in 1994 concluded that a double 3.7 m by 2.1 m (12 x 7 ft) reinforced concrete box culvert would have been required at the aqueduct crossing location.

Alternative A5C1

Alignment A5C1 crosses **Ingram Slough** at a location approximately 915 m (3,000 ft) west of the existing SR 65. Please see the description for the Alignment AAC2 crossing of Ingram Slough as all proposed alignments cross Ingram Slough in close proximity to that alignment.

Alignment A5C1 encroaches on the 100-year floodplain at **Auburn Ravine** in the vicinity of Moore Road for a distance of 305 m (1,000 ft). The floodplain at this location is designated Zone A. The HEAPS for Auburn Ravine Bridge proposes a bridge length of 213 m (700 ft). The structure would have spanned Auburn Ravine from bank to bank with a minimum soffit elevation of 40 m (131 ft). This elevation would provide 0.9 m (3 ft) of freeboard, as required by the Reclamation Board, over the estimated 100-year BFE of 39 m (128 ft).

Alignment A5C1 encroaches on the 100-year floodplain at the **Lower Tributary of Markham Ravine** at a location approximately 490 m (1,600 ft) south of Nicolaus Road for a distance of 183 m (600 ft). The floodplain at this location is designated Zone AE, base flood elevations determined. A HEAPS bridge length estimate is not available for this location. The designated floodway for the A5C1 crossing at the Lower Tributary of Markham Ravine encompasses the entire width of the Zone AE floodplain boundaries.

Any fill encroachment within the floodway would likely result in a greater than 0.3 meter (1 ft) increase to the 100-year BFE.

Alignment A5C1 encroaches on the 100-year floodplain at the **main channel of Markham Ravine** approximately 427 m (1,400 ft) north of Nicolaus Road for 122 m (400 ft). The floodplain at this location is designated Zone AE. The HEAPS proposes a bridge length of 85.3 m (280 ft) at the A5 crossing. The profile grade should be set to allow for minimum freeboard of 0.9 m (3 ft).

Alignment A5C1 encroaches on the **Coon Creek** floodplain approximately 518 m (1,700 ft) north of Wise Road for a distance of 884 m (2,900 ft). The floodplain at this location is designated Zone A. A HEAPS bridge length estimate is not available for the A5C1 crossing location. The adjacent AAC2 crossing 244 m (800 ft) upstream proposes a bridge length of 76.2 m (250 ft). The HEAPS notes that the peak discharge of 594 cubic meters per second (m^3/s) may not reach this crossing location due to upstream constriction at the existing highway and railroad crossings.

Alignment A5C1 crosses the **Yankee Slough** floodplain at two locations. The alignment encroaches on Yankee Slough approximately 914 m (3,000 ft) south of Dalby Road for a distance of 152 m (500 ft) and again approximately 213 m (700 ft) south of Dalby Road for a distance of 107 m (350 ft). The floodplain at these locations is designated Zone A. A detailed FEMA Flood Insurance Study is not available for Yankee Slough. The estimated 100-year BFE is 27 m (88 ft). A HEAPS bridge length estimate is not available for these crossing locations. The adjacent AAC2 alignment, crossing approximately 274 m (900 ft) upstream of the A5C1 alignment, proposes a bridge length of 61 m (200 ft) for the northerly third of Yankee Slough. If the A5C1 alignment had been selected, additional studies would have been required to determine a bridge length for the southerly crossing of Yankee Slough.

Alignment A5C1 crosses an existing **irrigation aqueduct** approximately 549 m (1,800 ft) south of Riosa Road. The aqueduct is the jurisdiction of South Sutter Water District. A review of the proposed crossing by the District Hydraulics Branch in 1994 concluded that a double 3.7 m by 2.1 m (12 ft x 7 ft) reinforced concrete box culvert would have been required at the aqueduct crossing location.

Alternative D1

Alignment D1 crosses **Ingram Slough** at a location approximately 915 m (3,000 ft) west of the existing SR 65.

Alignment D1 encroaches on the 100-year floodplain at **Auburn Ravine** approximately 792 m (2,600 ft) north of Moore Road for a distance of 396 m (1,300 ft). The floodplain at this location is designated Zone A. The Flood Insurance Study (FIS)

for Auburn Ravine does not include this crossing location. The November 10, 1999 HEAPS does not include recommendations for the D1 alignment crossing of Auburn Ravine, however, the A5C1 and AAC2 alignments, approximately 610 m (2,000 ft) upstream of D1, call for a bridge length of 213.4 m (700 ft). The Reclamation Board requires 0.9 m (3 ft) of freeboard between the 100-year BFE and the bridge soffit.

Alignment D1 encroaches on the 100-year floodplain at **Markham Ravine** in three locations. The floodplain at these locations is designated Zone A. A detailed FIS is not available for this portion of Markham Ravine. Two of the floodplain encroachments occur on the branches of a reservoir within the Markham Ravine watershed. The estimated 100-year BFE at these crossings is 35.8 m (117.5 ft). The third floodplain encroachment is located approximately 548 m (1,800 ft) south of Nicolaus Road for a distance of 122 m (400 ft) across the mainstream channel. The estimated 100-year BFE is 34.3 m (112.5 ft) at the D1 crossing of the mainstream channel. The HEAPS recommendation for the adjacent D13 alignment estimates the bridge length at 129.5 m (425 ft). The HEAPS notes that additional survey data would be required to determine backwater effects.

Alignment D1 encroaches on the 100-year floodplain at **Coon Creek** in the vicinity of Wise Road for a distance of 1,128 m (3,700 ft). The floodplain at this location is designated Zone A. The estimated 100-year BFE of 32.7 m (107.3 ft) per the HEAPS is based on an estimated flow of 594.3 m^3/s (21,000 cfs). According to the Placer County Flood Control Engineer, the estimated peak discharge for a 100-year event ranges from 311.3 m^3/s (11,000 cfs) to 594.3 m^3/s (21,000 cfs) for ultimate build-out of the upstream watershed area. The D1 and D13 alignments cross Coon Creek at the same location. The APS proposes a bridge length of 91.4 m (300 ft) at this crossing. The HEAPS notes that the peak discharge of 594 m^3/s may not reach the D1 crossing location due to upstream constriction at the existing highway and railroad crossings.

Alignment D1 encroaches on the 100-year floodplain at **Yankee Slough** near the Dalby Road / Dowd Road intersection for a distance of 213 m (700 ft). The floodplain at this location is designated Zone A. The estimated 100-year BFE is 28.0 m (92 ft). Alignments D1 and D13 cross Yankee Slough at the same location. The APS proposes a bridge length of 61.0 m (200 ft) and a minimum soffit elevation of 29.0 m (95 ft). It was recommended that the proposed interchange for the Dowd Road / Dalby Road connections should be located north of the existing County road intersection to minimize encroachments into the Yankee Slough 100-year floodplain.

Alignment D1 crosses **Big Yankee Slough** near the Dalby Road Dowd Road intersection. This crossing is not within the designated floodplain boundaries. The estimated 100-year water surface elevation is 28.0 m (92 ft). Alignments D1 and D13

cross Big Yankee Slough at the same location. The HEAPS proposed a bridge length of 30.5 m (100 ft) and a minimum soffit elevation of 29 m (95 ft).

Alignment D1 crosses an existing **irrigation aqueduct** approximately 549 m (1,800 ft) south of Riosa Road. The aqueduct is the jurisdiction of South Sutter Water District. A review of the proposed crossing by the District Hydraulics Branch in 1994 concluded that a double 3.7 m by 2.1 m (12 ft x 7 ft) reinforced concrete box culvert would have been required at the aqueduct crossing location.

Alternative D13 and the D 13 North Modified

The D 13 North Modified has the same floodplain encroachments as the D 13 alternative.

Proposed alignment D13 crosses **Ingram Slough** approximately 915 m (3000 ft) west of the existing SR 65. Please see the description for the Alternative alignment AA crossing of Ingram Slough as all proposed alignments cross Ingram Slough in close proximity to alignment AA.

Alignment D13 encroaches on the 100-year floodplain at **Auburn Ravine** in the vicinity of Moore Road for a distance of 305 m (1,000 ft). The floodplain at this location is designated Zone A. The HEAPS estimates a 100-year BFE of 39 m (128 ft) at the D13 alignment crossing. The HEAPS proposes a bridge length of 158.5 m (520 ft) and a minimum soffit elevation of 31.7 m (104 ft)

Alignment D13 encroaches on the 100-year floodplain at **Markham Ravin**e approximately 914 m (3,000 ft) south of Nicolaus Road for a distance of 91.4 m (300 ft). The floodplain at this location is designated Zone A. The estimated 100-year BFE is 30.8 m (101 ft). The HEAPS proposes a bridge length of 129.5 m (425 ft) and a minimum soffit elevation of 31.7 m (104 ft). The HEAPS advised that additional survey data would be required at Markham Ravine to determine backwater effects. The bridge length could be reduced based on additional studies.

Alignment D13 joins alignment D1 at a location approximately 2,286 m (7,500 ft) south of Wise Road. Please see the D1 alignment descriptions for floodplain encroachment and waterway crossing information north of the D1/D13 convergence.

4.7.1 Summary of Floodplain

Table 4-17 is a summary of the 100-year floodplain encroachment lengths. Figure 4-2 shows the location of these encroachments. The encroachments listed for D13 apply to all the D13 Modified alignments including the Preferred Alternative, D13 North Modified.

Table 4-17 Summary of 100 year Floodplain Encroachment Lengths

Alignment	Auburn Ravine	Markham Ravine	Markham Ravine Lower Tributary	Coon Creek	Yankee Slough
AAC2	320 m *(1050 ft)*	21 m *(70 ft)*	75 m *(250 ft)*	640 m *(2100 ft)*	213 m *(700 ft)*
A5C1	305 m *(1000 ft)*	122 m *(400 ft)*	183 m *(600 ft)*	884 m *(2900 ft)*	152 m *(500 ft)*
D1	396 m *(1300 ft)*	91 m, 61 m, &122m[1] *(300 ft, 200 ft & 400 ft)*	NA	1128 m *(3700 ft)*	213 m *(700 ft)*
D13	305 m *(1000 ft)*	91 m *(300 ft)*	NA	1128 m *(3700 ft)*	213 m *(700 ft)*

[1] Crosses at three locations
Source: Location Hydraulic Study Update (1999)

Alignment D13, with minimization measures, appears to have a low potential for impacts due to floodplain encroachments. The backwater analysis by Caltrans Structures Hydraulics indicates negligible increases to the floodplain base flood elevation at the proposed floodplain crossings. 900 mm equalizer culverts are recommended for the proposed roadway, within the floodplain limits at Coon Creek to minimize any loss of floodplain storage at this location. Equalizer culverts may be placed where terrain permits to reduce the duration and extent of storm water ponding.

With project features such as the bridges shown in Figure 4-2, following the recommended bridge lengths and soffits, and including flood basins as a feature of the project, overall floodplain encroachment would be minimal. Floodplain easements in the vicinity of Wise Road and the proposed project will also alleviate some potential flooding by providing storage for floodwaters during extreme events.

Figure 4-2 Location of Bridges

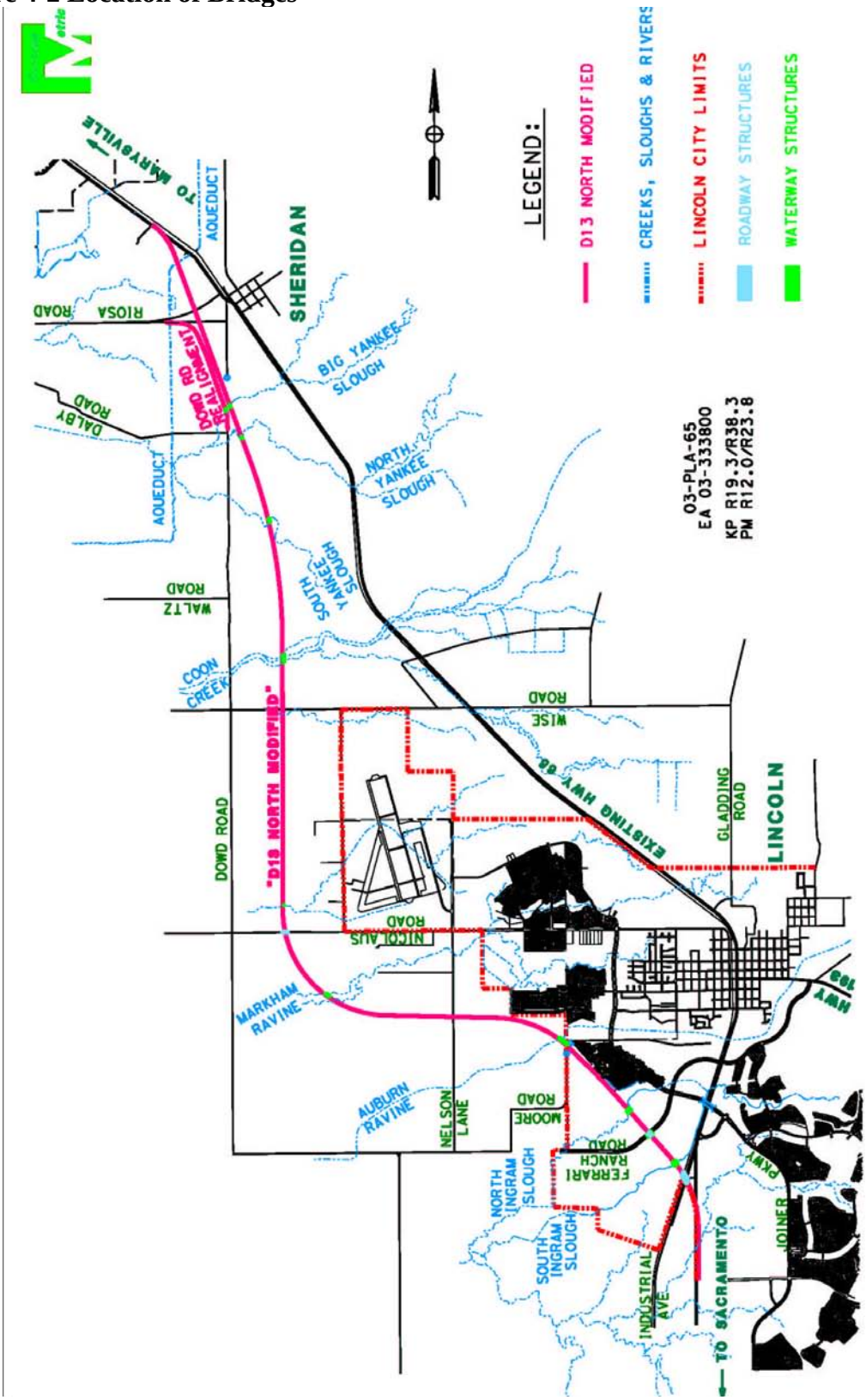
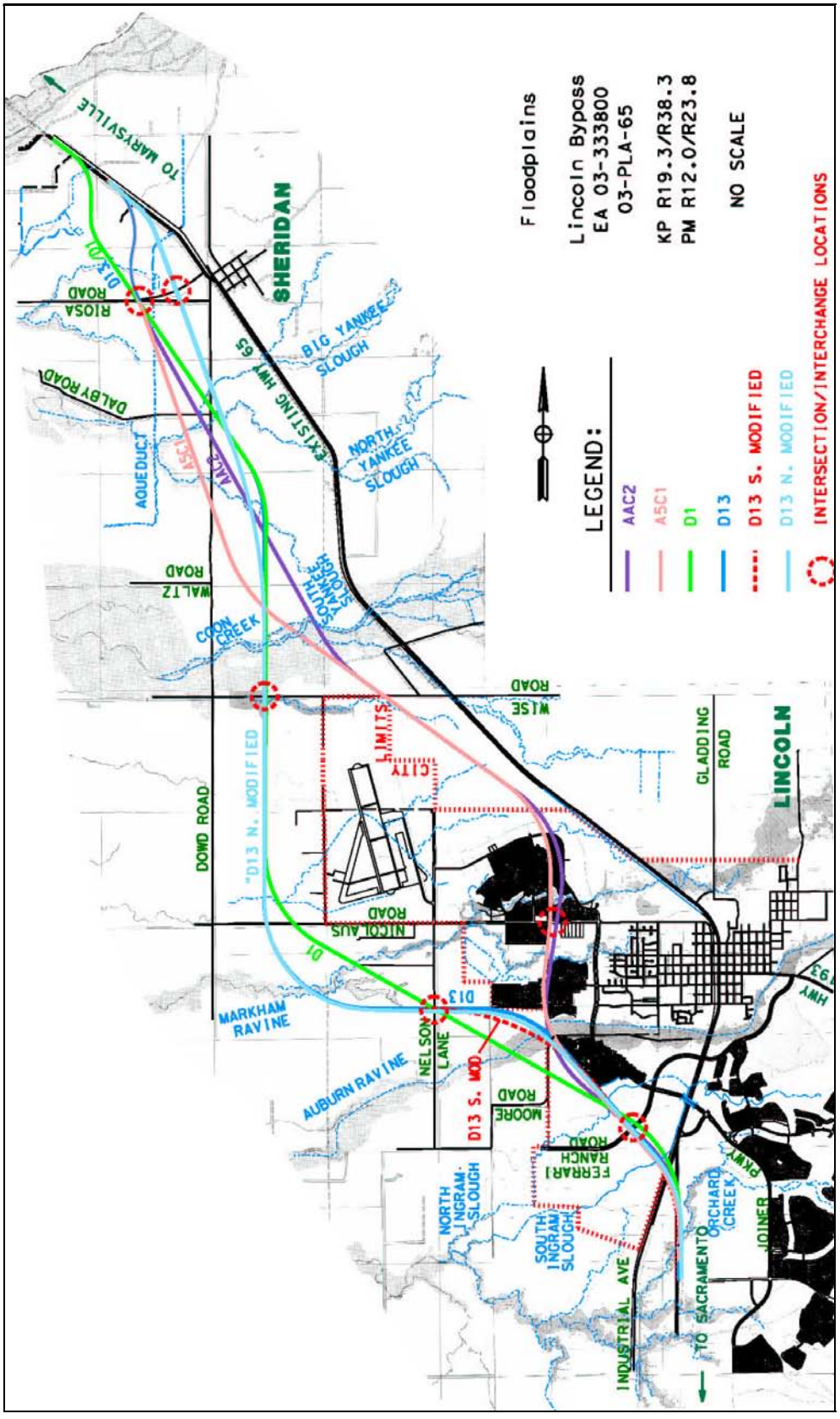


Figure 4-3 Flood Boundary Map



4.8 NATURAL RESOURCES

This section discusses and compares the impacts to biological resources and wetlands that are expected to occur as a result of the proposed project. All impact determinations are based on 76 m (250 ft) wide alignments, except where the development has occurred within this impact area.

For the Draft EIR/S, the measurement of impacts was based upon preliminary highway design. This allowed an equivalent comparison of alternatives without expending too much time refining design for all of the alternatives. Since the LEDPA has been concurred upon, additional design of the LEDPA alternative has occurred, and FWS guidelines on measuring impacts has been applied. Because more design has occurred and these guidelines have been applied to the LEDPA and not the other alternatives, the numbers for the LEDPA can no longer be compared with the numbers for the other alternatives.

Impacts have increased for the preferred alternative, however, those increases would have occurred for all the alternatives if the same design criteria were applied to the other alternatives. These increases in impacts are shown in Section 4.8.7. For the tables that compare alternatives, the impacts to the preferred alternative have not been altered to reflect new design elevation.

After analysis of the range of alternatives, the preferred alternative was approved as the LEDPA (D13 North Modified) and its impacts updated. A Biological Assessment documenting these specific impacts has been prepared and was used for Section 7 consultation with the U.S. Fish and Wildlife Service (FWS) and the National Oceanic and Atmospheric Administration (NOAA) under the Federal Endangered Species Act and coordination with California Dept. of Fish and Game (CDFG) as necessary under the California Endangered Species Act. The Biological Opinion (BO) was issued on February 2, 2005. A request to modify the BO was sent to the FWS in January 2006 and they sent back an amendment to the BO on March 21, 2006.

To initiate the studies, an annotated list of special status plant and wildlife species potentially occurring within the project area was compiled. The list was generated by querying the California Natural Diversity Data Base (CNDDB 1998 and 2003) and California Native Plant Society Electronic Inventory (CNPS) for the Sheridan, Lincoln, Pleasant Grove and Roseville quadrangles, and by obtaining a FWS list of special status species potentially occurring in the project area. Species lists generated through this process are included in Chapter 7, Comments and Coordination. Personnel from FHWA, Caltrans, FWS, NOAA and CDFG were contacted to discuss potential species-related

issues and to review/coordinate survey efforts. Agency staff contacted and the issues discussed are listed in Chapter 7, Comments and Coordination.

Park and Ride

A Park and Ride facility has been proposed for all the alignments as a part of this project. The park and ride facility will be located within the proposed right-of-way of the alignment adjacent to Industrial Avenue and SR 65 intersection. In the initial analysis, braided ramps were included in the park and ride location and the impact footprint was substantially larger due to the braided ramps and the number of parking spaces in the park and ride lot. The braided ramps are no longer a part of this project and the park and ride lot has been reduced; therefore the impacts would have also been reduced substantially if separated out. Originally the park and ride lot was designed to accommodate approximately 1200 cars; however, the footprint for the park and ride has decreased to approximately 6 acres and will accommodate less than the original 1200 cars. The location of the Park and Ride is shown in Figure 2.4.

The footprint for the park and ride facility will be purchased at the time of acquisition for the selected alternative. The proposed park and ride lot will not be constructed until the demand necessitates it and funding is available. The impacts for the park and ride lot have been incorporated into the impacts for the D13 North Modified.

4.8.1 Regulatory Requirements

This section summarizes the responsibilities of key agencies involved in the review of the Natural Environment Study Report (NESR) and related project documents. Coordination with the agencies is also discussed. Copies of correspondence with the agencies are included in Appendix D and E.

U.S. Environmental Protection Agency (EPA)

EPA has primary responsibility for administration of the Clean Water Act and has oversight authority on 404 permitting issues. EPA has concurred with the project purpose and need and the range of alternatives to be evaluated. EPA provided written agreement that the preferred alternative is the LEDPA on July 9, 2003, and provided a preliminary concurrence on the Mitigation and Monitoring Plan on December 12, 2004.

U.S. Army Corps of Engineers (USACE)

The USACE is a signatory agency under the NEPA/404 Memorandum of Understanding (MOU) and has concurred with the projects purpose and need and the range of alternatives. Under Section 404 of the Clean Water Act, the USACE regulates the discharge of dredged or fill material into waters of the U.S. A Section 404 permit will be required authorizing the discharge of dredged or fill material associated with roadway construction into vernal pools and other wetlands and regulated waters.

The USACE verified the original wetland delineation for the Study Area in 1991, and has provided direction on updating the delineation and re-verifying the findings. A meeting was held with USACE personnel on March 10, 1998 (Cavanaugh, March 10, 1998) to discuss the possibility of delaying the update and re-verification of wetlands until a preferred alternative was chosen. It was agreed that that approach would be acceptable.

USACE concurred with the LEDPA on August 8, 2003 during the NEPA/404 process and has given concurrence on the Draft Habitat Mitigation and Monitoring Plan (HMMP) on December 27, 2004. Caltrans sent a revised Wetland Delineation to USACE in March 2004 for re-verification. The 404 permit was also submitted to USACE in March for review and comment. Caltrans will need to obtain concurrence on the final HMMP as well as a re-verification of the Wetland Delineation before USACE will issue a permit for the project.

U.S. Fish and Wildlife Service (FWS)

Under the Fish and Wildlife Coordination Act of 1958, Federal agencies are required to coordinate during project planning stages with the FWS and with the State agency responsible for fish and wildlife resources on activities that modify any body of water. Under Section 7 of the Federal Endangered Species Act, Federal agencies are required to consult with FWS on any action that "may affect" a Federally listed threatened or endangered species or designated critical habitat. FWS is also a signatory agency to the NEPA/404 Integration MOU and has concurred with the purpose and need and the range of alternatives evaluated for the project.

FWS will continue to be involved in the project through review of environmental documents, participation in the 404 permitting process and in Section 7 consultation for potential project effects on listed species.

In February 2004, Caltrans began discussing the project and the Section 7 consultation with FWS. During the next several months Caltrans, FHWA and FWS worked towards satisfying the requirements of the Section 7 consultation process. FWS issued a BO on February 2, 2005 (Appendix J). The BO states that the project as described will not jeopardize the continued existence of those species that are impacted by the project. A request to modify the BO was sent to the FWS in January 2006. They sent an amended BO on March 21, 2006.

National Oceanic and Atmospheric Administration (NOAA Fisheries)

Under Section 7 of the Federal Endangered Species Act, Federal agencies are required to consult with NOAA Fisheries on any action that "may affect" a Federally listed threatened or endangered species or designated critical habitat for which NOAA

has responsibility. For this project, NOAA Fisheries has responsibility for reviewing project effects to anadromous fish.

Caltrans submitted a request for Section 7 consultation with NOAA in May of 2004, concurrence on the "not likely to adversely affect" determination on Central Valley Steelhead and Essential Fish Habitat for Pacific Salmon (May 19, 2004) was obtained.

California Regional Water Quality Control Board (RWQCB)

A Section 401 Water Quality Certification from the Regional Water Quality Control Board is required in conjunction with the Section 404 permitting process. A 401 Certification will be required before the 404 permit is issued. Application to the RWQCB is generally made after the environmental document is complete.

California Department Of Fish and Game (CDFG)

Coordination with CDFG will be necessary under the Fish and Wildlife Coordination Act and under the California Endangered Species Act for potential impacts to State listed species. In addition, a Section 1602 Agreement will be required from CDFG to authorize work in streams and other waterbodies. CDFG have also been involved in the review of project environmental documents and in the 404 permitting process as a reviewing agency on the USACE's public notice.

Executive Order 11990 Protection of Wetland (May 24, 1977)

On federally funded projects, impacts on wetlands must be identified in the environmental document. Alternatives that avoid wetlands must be considered. If wetland impacts cannot be avoided, then all practicable measures to minimize harm must be included. This must be documented in a specific "Wetlands Only Practicable Alternative Finding" in the Final Environmental Document. It can be found in Section 4.8.10 of this document.

4.8.2 Impacts to Plant Communities

The potential impacts to plant communities within each alternative are presented in Table 4-18. Figure 3-14 in Chapter 3 shows the plant communities along with the project footprint. The total area of each community type within the project Study Area is also provided for perspective. This information is presented graphically in a bar chart in Figure 4-4.

Figure 4-4 Comparison of Potential Impacts to Key Resources

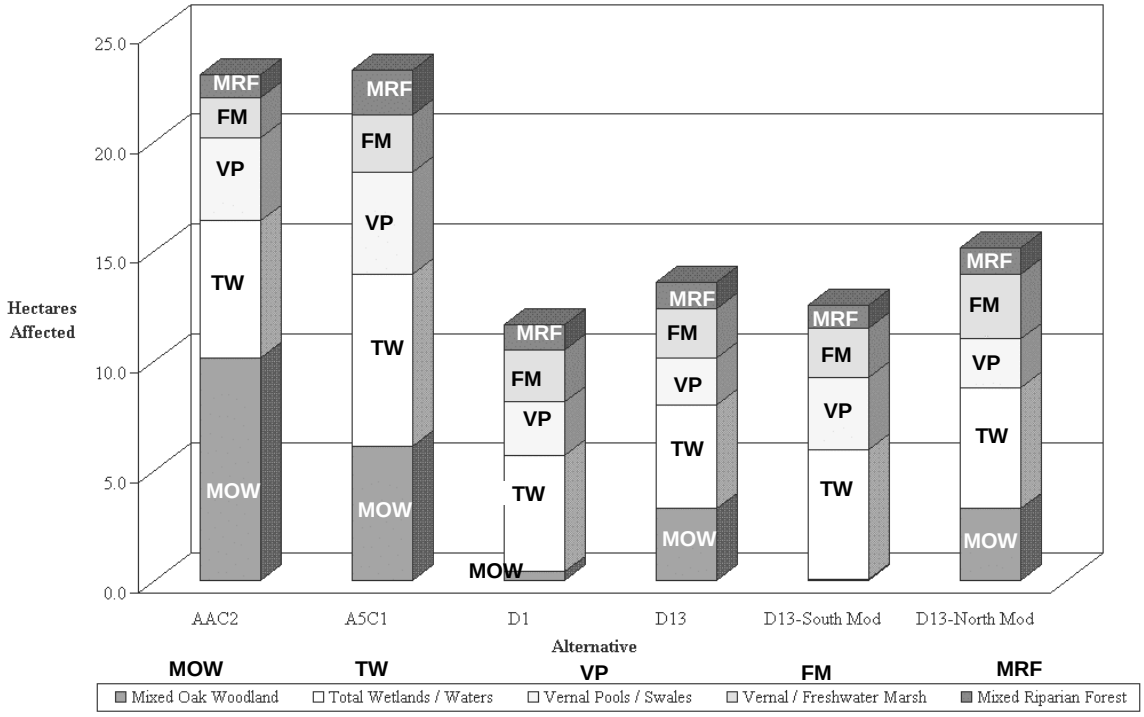


Table 4-18 Potential Impacts to Plant Communities Occurring in the Study Area

Community	Total Within Study Area	A5C1	AAC2	D1
Developed/Disturbed	176.93 ha	30.72 ha	23.43 ha	14.89 ha
	437.2 ac	*75.9 ac*	*57.9 ac*	*36.8 ac*
	8.5 %	15.1%	11.9%	7.6%
Agricultural Lands	873.99 ha	52.17 ha	51.11 ha	81.67 ha
	2159.6 ac	*128.9 ac*	*126.3 ac*	*201.8 ac*
	42.2 %	25.7%	26.1%	41.7%
Non-native Grassland	211.42 ha	14.97 ha	19.83 ha	18.86 ha
	522.4 ac	*37 ac*	*49.0 ac*	*46.6 ac*
	10.2 %	7.4%	10.1%	9.6%
Mixed Oak Woodland	49.37 ha	6.11 ha	10.16 ha	0.40 ha
	122.0 ac	*15.1 ac*	*25.1 ac*	*1.0 ac*
	2.4 %	3.0%	5.2%	0.2%
Mixed Riparian Forest	17.85 ha	2.06 ha	1.05 ha	1.3 ha
	44.1 ac	*5.1 ac*	*2.6 ac*	*2.8 ac*
	0.9 %	1.0%	0.5%	0.6%
Valley Freshwater Marsh	61.47 ha	2.23 ha	1.34 ha	2.06 ha
	151.9 ac	*5.5 ac*	*3.3 ac*	*5.1 ac*
	3.0 %	1.1%	0.7%	1.1%
Great Valley Willow Scrub	1.9 ha	0.08 ha	0.08 ha	0.12 ha
	4.7 ac	*0.2 ac*	*0.2 ac*	*0.3 ac*
	0.1 %	0.0%	0.0%	0.1%

Community	Total Within Study Area	A5C1	AAC2	D1
Grassland / Northern Hardpan Vernal Pool Complex	646.43 ha	90.73 ha	85.67 ha	73.82 ha
	1597.3 ac	*224.2 ac*	*211.7 ac*	*182.4 ac*
	31.2 %	44.7	43.7%	37.7%
Grassland/Northern Volcanic Mudflow Vernal Pool Complex	11.9 ha	2.95 ha	2.51 ha	2.19 ha
	29.4 ac	*7.3 ac*	*6.2 ac*	*5.4 ac*
	0.6 %	1.5%	1.3%	1.1%
Vernal Marsh	10.32 ha	0.36 ha	0.49 ha	0.32 ha
	25.5 ac	*.9 ac*	*1.2 ac*	*0.8 ac*
	0.5 %	0.2%	0.2%	0.2%
Open Water	11.33 ha	0.53 ha	0.53 ha	0.32 ha
	28.0 ac	*1.3 ac*	*1.3 ac*	*0.8 ac*
	0.5 %	0.3%	0.3%	0.2%
Total	**2072.91 ha**	**202.92 ha**	**196.20 ha**	**195.79 ha**
	5122.1 ac	***501.4 ac***	***484.8 ac***	***483.8 ac***
	100.0 %	**100.0%**	**100.0%**	**100.0%**

Community	Total Within Study Area	D13	D13 – Modified South	D13 - Modified North
Developed/ Disturbed	176.93 ha	16.27 ha	18.29 ha	18.78 ha
	437.2 ac	*40.2 ac*	*45.2 ac*	*46.4 ac*
	8.5 %	7.6%	8.7%	**8.7%**
Agricultural Lands	873.99 ha	102.11 ha	92.84 ha	94.74 ha
	2159.6 ac	*252.3 ac*	*229.4 ac*	*234.1 ac*
	42.2 %	47.7%	44.1%	**44.1%**
Non-native Grassland	211.42 ha	18.41 ha	18.74 ha	12.42 ha
	522.4 ac	*45.5 ac*	*46.3 ac*	*30.7 ac*
	10.2 %	8.6%	8.9%	**5.8%**
Mixed Oak Woodland	49.37 ha	3.28 ha	0.08 ha	3.28 ha
	122.0 ac	*8.1 ac*	*0.2 ac*	*8.1 ac*
	2.4 %	1.5%	0.0%	**1.5 %**
Mixed Riparian Forest	17.85 ha	1.21 ha	1.05 ha	1.21 ha
	44.1 ac	*3.0 ac*	*2.6 ac*	*3.0 ac*
	0.9 %	0.6%	0.5%	**0.6 %**
Valley Freshwater Marsh	61.47 ha	2.06 ha	2.06 ha	1.98 ha
	151.9 ac	*5.1 ac*	*5.1 ac*	*4.9 ac*
	3.0 %	1.0%	1.0%	**0.9 %**
Great Valley Willow Scrub	1.9 ha	0.08 ha	0.08 ha	0.08 ha
	4.7 ac	*0.2 ac*	*0.2 ac*	*0.2 ac*
	0.1 %	0.0%	0.0%	**0.0%**
Grassland / Northern Hardpan Vernal Pool Complex	646.43 ha	67.18 ha	73.78 ha	78.11 ha
	1597.3 ac	*166 ac*	*182.3 ac*	*193.0 ac*
	31.2 %	31.4%	35.1%	**36.4 %**

Community	Total Within Study Area	D13	D13 – Modified South	D13 - Modified North
Grassland/Northern Volcanic Mudflow Vernal Pool Complex	11.9 ha	2.87 ha	2.87 ha	2.87 ha
	29.4 ac	*7.1 ac*	*7.1 ac*	*7.1 ac*
	0.6 %	1.3%	1.4%	**1.3%**
Vernal Marsh	10.32 ha	0.16 ha	0.16 ha	0.97 ha
	25.5 ac	*0.4 ac*	*0.4 ac*	*2.4 ac*
	0.5 %	0.1%	0.1%	**0.5 %**
Open Water	11.33 ha	0.24 ha	0.32 ha	0.24 ha
	28.0 ac	*0.6 ac*	*0.8 ac*	*0.6 ac*
	0.5 %	0.1%	0.2%	**0.1%**
Total	2072.91 ha	213.88 ha	210.28 ha	214.69 ha
	5122.1 ac	*528.5 ac*	*519.6 ac*	*530.5 ac*

The project may have direct and indirect impacts on special status species and their habitats. Direct effects are defined by the Presidents Council on Environmental Quality (CEQ) as those effects that are caused by the project or action and occur at the same time and place as the project or action. Indirect effects are caused by the project or action, but occur later in time or are farther removed in distance, but still foreseeable.

Direct effects of this project may include the permanent removal of vegetation and associated wildlife within the construction footprint, as well as temporary effects resulting from construction access and staging. Indirect effects include changes in hydrology (flooding or de-watering), shading (under bridges or adjacent to large fills), increased disturbance and noise, introduction of exotic species, etc. Except for altered hydrology, the potential for indirect effects is generally limited to the area directly adjacent to the new roadway.

Provisions will be made in the project design to allow passage through the project area all critical natural drainage features. Consequently, project effects due to altered hydrology will be minimal except, perhaps, in the direct vicinity of the project footprint.

As shown in Table 4-18, the greatest impacts, regardless of the alternative alignment, are to agricultural lands and annual grassland, with and without vernal pools. These are the most common communities in the project area. The western alignments (D1, D13, D13 South Modified and D13 North Modified) have a proportionately greater impact on agricultural lands, while the eastern alignments (A5C1 and AAC2) have a proportionately greater impact on vernal pool habitats. All alternatives would impact wildlife associated with the affected plant communities. Agricultural land and non-native grasslands (both with and without vernal pools) are the most common habitats, and the extent of wildlife impacts is directly related to the acreage of these habitats affected by each alternative. While there is much less acreage of mixed oak woodland, mixed

riparian forest and valley freshwater marsh within the Study Area, these communities provide higher quality wildlife habitat, generally due to the availability of water and/or greater structural diversity. Further, the more limited extent of these habitats in the Study Area amplifies the importance of project impacts to these habitats. Consequently, impacts to these high quality communities are generally considered more likely to have impacts to wildlife.

Disturbance to wildlife habitat will likely disrupt intra- and inter-specific wildlife interactions, particularly to the less mobile amphibians, reptiles and small mammals. During the initial phases of construction, these less mobile wildlife species may be killed outright, while more mobile species such as birds and larger mammals will be displaced into adjacent habitat that is likely currently occupied, resulting in increased competition and predation pressures on the newly displaced individuals as well as those already present in the habitat. These interactions could lead to increased stress, which in turn could lead to reduced reproduction.

4.8.3 Wildlife Corridors

Although the riparian communities, particularly along Auburn Ravine and Coon Creek, provide relatively unobstructed wildlife corridors through the Study Area, these corridors are crossed by existing SR 65, the UPTC tracks, and a number of secondary roads and farm roads. Existing SR 65 is immediately adjacent to the UPTC tracks through most of the Study Area, and the main drainage (Auburn Ravine, Markham Ravine, Coon Creek) are conveyed through culverts beneath these features. These culverts have a combined length of up to 61 m (200 ft). Consequently, the SR 65/ UPTC tracks represent an existing hindrance to wildlife movement along the east side of the Study Area.

The new freeway corridor, which will be constructed on a raised road prism, will impede local wildlife movements for several species of amphibians, reptiles and mammals. Movement by smaller, less mobile species may be blocked by the roadway, possibly limiting the availability of resources and hindering dispersal and genetic exchange within populations. More mobile species (e.g., lizards, snakes, skunks, raccoons, ground squirrels, coyotes) may incur increased mortality by attempting to cross the freeway. Culverts will be provided at drainage locations and may provide crossings for wildlife, but are not expected to completely avoid the potential impacts to wildlife movements. However, further consideration regarding culvert characteristics and sizes conducive to wildlife movements will be done as design is finalized. Where feasible, design will incorporate elements that would alleviate wildlife crossing impacts but that do not jeopardize the integrity of the project design.

A5C1 and AAC2 Alignments

These alternatives follow the eastern corridor (on the east side of the airport). As noted previously, this corridor has a proportionately greater percentage of developed/disturbed acreage and less agricultural land than the western corridor. While the impact to non-native grassland is somewhat less with these alternatives, the impact to grassland/vernal pool complex is substantially (73%) greater than with the western alignments. The A5C1 Alignment has the greatest potential impact to mixed riparian forest (2.06 ha [5.1 ac]) of any alternative. Much of this habitat is associated with Coon Creek. This habitat is structurally diverse and represents the highest quality wildlife habitat available in the Study Area. A number of mammal, bird, reptile and amphibian species would potentially be affected, including some special status species. Indirect impacts may also occur due to displacement of more sensitive species away from the highway corridor. The AAC2 alignment crosses Coon Creek further east, where the riparian corridor is much narrower. Consequently, the direct impact 1.05 ha (2.6 ac) and indirect impact to the riparian corridor are reduced.

D1 and D13

These alternatives follow the western alignment (west of the airport) around Lincoln. As noted previously, these alternatives impact much more agricultural land and less developed/disturbed acreage than the A5C1 and AAC2 alignments. While these alternatives would impact a somewhat greater area of non-native grassland, the impacts to grassland/vernal pool complex would be substantially (43%) less. The impacts to mixed oak woodland would also be less. The D1 alignment impacts only 0.40 ha (1.0 ac) of this community, compared with 10.16 ha (25.1 ac) for the AAC2 alignment and 6.11 ha (15.1 ac) for the A5C1 alignment. Marsh impacts are somewhat greater with these alternatives due to the crossing of extensive marsh habitat along Markham Ravine.

The D1 and D13 alternatives will affect wildlife associated with agricultural lands and grasslands (with and without vernal pools) that comprise about 90 percent of the alignment acreage. Impacts to wildlife species associated with woodland and forest habitats would be reduced with these alternatives compared to the eastern alternatives. Marsh impacts are greater with these alignments, and the marsh habitat affected is of particularly high quality, including a high diversity of open water, emergent wetlands and willow scrub habitats. Consequently, impacts to waterfowl and wading birds will likely be greater with these alternatives. Potential impacts to fish and other aquatic species may also be greater with these alignments, during both construction and long term, due to the larger area of aquatic habitat that would be crossed.

D13 North and South Modified

D13 North Modified has similar impacts to most plant communities compared with D13. D13 South Modified avoids the large oak woodland at the southern end of the Study Area; consequently, the impact to oak woodland with the D13 South Modified is reduced by 95% compared with D13 and D13 North Modified. However, the D 13 South Modified alignment impacts more vernal pools, marsh and total wetlands than the D1, D13 and D13 North Modified alignment.

4.8.4 Special Status Plants & Animals

The proposed project may directly impact special status plants. Indirect impacts may also occur. The species potentially affected include Ahart's dwarf rush, Bogg's Lake hedge hyssop, dwarf downingia and legenere. Ahart's dwarf rush and Bogg's Lake hedge-hyssop have only been found in the eastern portion of the Study Area and may be limited to the eastern corridor. The downingia occurs throughout the Study Area. While the legenere has not been observed, it is likely to occur. For purposes of comparing alternatives, it is assumed that Ahart's dwarf rush and Bogg's Lake hedge hyssop are more likely to be present within the A alignments, while dwarf downingia and legenere are equally likely to be present in all alignments. These are all vernal pool plants; thus, the potential for impacts is directly related to the extent of vernal pool impacts within an alignment. The greatest potential for vernal pool impacts is with the AAC2 and A5C1 alignments. Consequently, the greatest potential impact to special status plant species would also result from alternatives AAC2 and A5C1.

The preferred alternative (D13 North Modified) had less impact to vernal pools, 1.78 ha (4.4 acres) when compared to AAC2 and A5C1, 3.44 ha (8.5 acres) and 4.29 ha (10.6 acres) respectively. Impacts to these special status plants can be mitigated through minimization of vernal pool impacts in the final alignment routing and through preservation and re-creation of appropriate habitat to a less than significant impact per CEQA.

Wildlife

Mammals

The project may potentially affect a number of protected wildlife species. Several special status bat species (greater western mastiff bat, small-footed myotis, long-eared myotis, fringed myotis, long-legged myotis, Yuma myotis, pale big-eared bat and Townsend's western big-eared bat) may potentially occur in the Study Area based on the availability of suitable habitat. These bats may use trees and/or buildings and other structures (e.g., bridges) for roosting and may forage over a variety of habitats in the Study Area. Alternatives that impact large numbers of trees (e.g., AAC2) and buildings

and other structures would have greater potential to impact bats. Pre-construction surveys will be required to accurately assess the potential for impacts to bats. Impacts can be minimized through timing of construction, excluding bats from structures and minimizing impacts to potential roost sites.

The San Joaquin pocket mouse is a federal species of concern. It is not listed as threatened or endangered. This species occurs in grasslands and oak savanna habitats with friable soils. San Joaquin pocket mice were not observed in the study area. Implementation of proposed avoidance and minimization measures to minimize impacts to oak woodlands and other habitats would reduce potential impacts to this species.

Birds

A number of special status bird species are known to occur in the Study Area and may be affected by the project. Forest and woodland areas provide habitat for Cooper's hawk, sharp-shinned hawk and Swainson's hawk. Habitat for northern harrier, burrowing owl, tricolored blackbird, California horned lark, grasshopper sparrow and lark sparrow occurs throughout the Study Area. Habitat for double-crested cormorant, white-faced ibis and American bittern occurs along Markham Ravine and other locations. Nests or nesting behavior has been observed for several of these species. Foraging habitat for prairie falcon, golden eagle, mountain plover and ferruginous hawk also occurs in the Study Area.

The project will directly eliminate foraging and/or nesting habitat used by these species. The AAC2 alignment, which had the highest potential impacts of 10.16 ha (25.1 ac) mixed oak woodland, may impact nesting and/or foraging habitat for Cooper's, sharp-shinned and Swainson's hawks. The western alignments (D1 and D13 and D13 North Modified and D13 South Modified) affect the largest acreage of agricultural land, grassland, riparian forest and marsh; consequently, these alternatives would potentially have greater impacts to special status bird species.

Pre-construction surveys of the selected alignment are required in order to accurately determine the potential for impacts to special status bird species. In addition to avoidance of key habitat and habitat preservation, construction timing will help mitigate potential impacts.

Swainson's Hawk

The Swainson's hawk is a threatened species under the California Endangered Species Act (CESA). The primary reason for the decline of this species, as with other raptors, is thought to be agricultural conversion of native habitats, primarily grassland and riparian forest. This species requires fields or grasslands for foraging and breeds in stands with few trees in juniper-sage flats, riparian areas and oak savanna.

Swainson's hawk nesting habitat in, and in the vicinity of, the project area consists of the taller trees in the Coon Creek, Auburn Ravine and Pleasant Grove Creek riparian corridors. More than 80% of the total project area is suitable foraging habitat for the hawk, which consists for the most part of agricultural lands (active and fallow) and grasslands. At least eight different Swainson's hawks were observed within the project area and a 16.1 km (10 mi) radius. The observations included one pair of hawks constructing a nest and a second pair exchanging prey, indicating the establishment of a territory. At least three of the hawks were observed within the Study Area, including one of the pairs. The combination of extensive foraging habitat adjacent to several suitable riparian nesting sites makes the Study Area highly suitable for this species.

Potential impacts to this species from the proposed project include direct loss of up to 160 ha (400 ac) of foraging habitat, with additional indirect effects due to disturbance along the highway corridor. Given the high value of the nesting and foraging habitat within the project area and the increasing urbanization of the nearby Lincoln area, this is a potentially significant impact under CEQA.

Mitigation for impacts was determined using guidance from DFG guidelines for determining mitigation. Mitigation includes preserving 400 acres of existing grassland habitat in the vicinity of the project through fee title or conservation easement depending on extent of active management. The mitigation described above and additional avoidance and minimization measures for potential impacts to Swainson's hawk foraging habitat will reduce impacts to less than significant under CEQA.

Reptiles

Special status reptiles observed or expected to occur in the natural environment Study Area (Study Area) include the northwestern pond turtle and California horned lizard. Potential impacts to pond turtles will be greatest with the western alignments that remove more aquatic habitat. The horned lizard occurs in a variety of habitat types; consequently, potential impacts to this species are generally related to the overall acreage of habitat impacted.

Amphibians

The special status amphibians potentially occurring in the Study Area are the western spadefoot toad and the California red-legged frog. Spadefoots occupy a variety of lowland habitats, and potential impacts to this species are related to the overall acreage of habitat impacted by the selected alignment.

Red-legged frogs inhabit lowlands and foothills in or near permanent sources of deep water. The frog prefers ponds or creeks with extensive shoreline vegetation but will

disperse 1.6 km (1 mi) or more during or after rain events. Although suitable habitat for the California red-legged frog exists in the project area, due to the presence of non-native predators (i.e.,bullfrog, crayfish, largemouth bass etc.) this species is not expected to occur.

Fish

Federal candidate fall-run Chinook salmon were observed in low numbers in Auburn Ravine, Coon Creek and Ingram Slough. The federally threatened Central Valley steelhead may also occur in similar habitat in the project area. Both of these species are under the jurisdiction of NOAA Fisheries. Pacific lampreys have been observed and the river lamprey could potentially occur; these are both species of special concern.

Bridge construction activities will occur within the live stream at both Coon Creek and Auburn Ravine and Ingram Slough. The existing open channel at these bridge locations will be restricted to culverts during the construction period, forcing fish to move through the culvert pipes. Temporary impacts include the potential loss of 1.52 ha (3.76 ac) of woody riparian and shaded riverine aquatic (SRA) habitat and 0.06 ha (0.15 ac) of open water. There will also be a permanent loss of 0.69 ha (1.70 ac) of woody riparian and SRA habitat for Central Valley steelhead and Central Valley fall-run Chinook salmon.

The following avoidance and minimization measures are proposed to offset any effects to these species or their habitat. Bridges or culverts are proposed for the stream crossings where the species are likely to occur. In stream work will be limited to the period between June 1 and October 31 when fish are least likely to be present in the project area so as not to block migration or otherwise impede fish movements. Revegetation of construction areas following the completion of bridge construction will offset the loss of SRA habitat. In addition, the shading of the streams by the bridge structures and off-site preservation and restoration of SRA habitat will further minimize the loss of SRA. Erosion and siltation best management practices will be implemented to avoid habitat degradation.

A "may affect, not likely to adversely affect" determination for the threatened Central valley steelhead under Section 7 of the Endangered Species Act was made by Caltrans. In addition, Caltrans determined that the project would "not adversely affect" any Essential Fish Habitat pursuant to the provisions of the Magnuson-Stevens Fishery Conservation and Management Act (MSA). These determinations were submitted to NOAA Fisheries on May 10, 2004 and a concurrence letter was received from NOAA on May 19, 2004.

Chinook Salmon

The federally threatened Central Valley steelhead and federal candidate Central Valley fall-run chinook salmon are likely to occur in the project area. Streams likely to support these species include Coon Creek and Auburn Ravine. Ingram Slough does not provide spawning habitat for this species in the project area or upstream of the project area. Although the project area lacks suitable spawning habitat for these species, suitable spawning habitat does occur upstream and fish may pass through the project area during migration.

Juvenile fall-run/late fall-run chinook salmon have been observed in low numbers in the project area in Auburn Ravine, Coon Creek and Ingram Slough. The previous NES reported that these fish were most likely surplus fingerlings planted by CDFG. It is documented that CDFG planted surplus fingerlings in drainages within the project area in an attempt to maximize natural rearing habitat. The reaches of the drainages that flow through the project area do not contain suitable spawning habitat for fall-run/late fall-run salmon but upstream reaches of Auburn Ravine and Coon Creek contain potential spawning habitat. In addition, drainage and tributaries within the project area could provide non-natal rearing habitat for salmon fry in early stages of development.

Central Valley Steelhead

Although not observed in the Study Area during previous surveys, Central Valley steelhead could potentially utilize upstream reaches of Auburn Ravine and/or Coon Creek as spawning habitat. In addition, drainage and tributaries within the project area could provide non-natal rearing habitat for steelhead fry in early stages of development.

Potential project-related impacts to steelhead would be similar to those for chinook salmon.

Invertebrates

The Federally listed vernal pool fairy shrimp (vpfs) and vernal pool tadpole shrimp (vpts) have been recorded in the project area or immediate vicinity and are assumed to be present within all alignments. California linderiella also occur in vernal pools in the study area. These species are generally restricted to vernal pools; thus, alternatives with greater potential impacts to vernal pools (A5C1 and AAC2) will likely have greater impact to these invertebrates. Because all alignments impact vernal pools, it is not possible to avoid impacting these species. Mitigation in accordance with FWS guidelines is required.

Due to the length of the corridor and distribution of pools in the project area, it is not possible to completely avoid vernal pool impacts. Eight vernal pool complexes were

previously identified within the study area based on geographic and hydrologic connectivity. All of the alignments evaluated cross six of these eight complexes. The complexes range from small, disturbed units completely surrounded by existing development to large, diverse units including tracts of undisturbed, high quality and high-density pools. The project will directly impact vernal pools that provide potential habitat for VPFS and VPTS, and the presence of both species is inferred in these habitats.

Indirect impacts to listed invertebrates may also occur outside of the project alignment due to altered pool hydrology. Contributing watershed, while not necessarily critical to the volume of water available to a pool, may play an important role in water level dynamics. Substantial loss of watershed may result in fluctuating water levels during the winter that could affect both plant and invertebrate populations within the pool (Hanes and Stromberg 1996). Effects are further limited to pools and swales that are down slope from the roadway alignment.

The D13 North Modified alternative will have a direct impact to 10.90 ha (26.94 ac) of vernal pools/swales and an indirect impact of 5.49 ha (13.56 ac) to vernal pools/swales. These revised impacts were submitted to FWS in a supplement to the Biological Assessment (BA). The BA concluded that the project would have an adverse effect on the VPFS and VPTS. The FWS concurred and responded with their Biological Opinion, which states that with the implementation of the proposed mitigation measures that are described in Section 4.8.8 of this document, the project will not likely jeopardize the continued existence of the VPFS and VPTS. The project will still cause direct take of the species, which has been authorized by the FWS as a result of the completed Endangered Species Act consultation. With the implementation of the mitigation measures listed in the Biological Opinion, the project will have a less than significant impact on these listed vernal pool species.

Critical Habitat for Vernal Pool Fairy Shrimp (VPFS) and Vernal Pool Tadpole Shrimp (VPTS)

Critical habitat was designated for the VPFS and VPTS on August 6, 2003. VPFS critical habitat extends as far north as Jackson County, Oregon, and as far south as Ventura County, California. There are 32 units of critical habitat mapped for this species. Most of the vernal pools in the study area are within designated critical habitat for VPFS (Unit 12) and most of the project impacts to vernal pools and swales within the preferred alignment (D13 North Modified) affect critical habitat for this species.

Designated critical habitat for VPTS extends from Shasta County, California at the northern extent to Kings County and Tulare County, California at the southern end. No critical habitat for this species is designated within the project area, nor within Placer

County. The critical habitat areas for this species closest to the project area are south of the city of Sacramento in Sacramento County, and a small polygon designated in Yuba County, east of Marysville. Construction of the project will not impact critical habitat for VPTS.

Valley Elderberry Longhorn Beetle (VELB)

There are a number of recent records for VELB (i.e., positive identification of exit holes) in the project vicinity, including records from Roseville and Rocklin, about 16 km (10 miles) south of the project area, and from the Bear River, immediately north of the project area.

VELB may occur in the project area, although the beetle's host plant, elderberry, is not common in the project area and no signs of beetles (exit holes) have been recorded in the project study area.

Two areas along the American River in the Sacramento metropolitan area were designated as critical habitat for VELB. In addition, an area along Putah Creek in Solano County, and the area east of Nimbus Dam on the American River in Sacramento County, is identified as important habitat for the recovery of the species. The study area is not located within critical habitat for VELB.

Potential project related impacts to VELB are limited to direct impacts to elderberry plants during project construction. Indirect impacts are not expected to occur as no other plants were observed along the project alignment.

The project will affect two elderberry plants occurring in a clump with 10 stems of sufficient size (>1 inch diameter at ground level) to provide habitat for VELB. The elderberry plants are both located along an old breakout channel of Auburn Ravine. No exit holes were observed on either plant. Although this area is away from the active stream channel, and in an area classified as woodland habitat, per FWS guidelines, these plants are classified as riparian.

A BA was submitted to the FWS for impacts to the VELB in April 2004. The BA concluded that the project would potentially have a direct impact on the VELB. The FWS concurred in a BO and further stated that with the implementation of the mitigation measures spelled out in the BA, and discussed in Section 4.8.8, the project would not likely jeopardize the continued existence of the VELB. The BO also contained authorization for incidental take of the insect. With the implementation of the mitigation measures described in Section 4.8.8, the project will have a less than significant effect on the VELB under CEQA.

4.8.5 Impacts to Key Resources

Table 4-19 provides a side-by-side comparison of the impacts to key resources associated with each of the six alternatives. Figure 4-4 on page 4-68 provides a graphical presentation of this same information. As the table and figure show, none of the alternatives is obviously superior in terms of the impacts to key resources. These resources are broadly distributed throughout the project corridor and none of the alignments minimizes impacts to all resources.

In addition to project impacts on biological resources, another factor that must be considered in evaluating alternatives is the effectiveness of available avoidance and minimization measures in offsetting project-related losses. It is not possible to fully offset impacts to mixed oak woodland and mixed riparian forest, regardless of the avoidance and minimization measures employed since many of the trees are over 100 years old, and development of mature riparian forest requires decades. Young trees can be planted and, over time, viable habitat will develop. However, the temporal loss of habitat value while the trees grow and the habitat structure develops cannot be directly offset. Vernal pool impacts may also be difficult to offset due, in part, to the high probability of special status species being present. In comparison, freshwater marsh impacts are relatively easy to offset. Consequently, impacts to oak woodlands, riparian forest and vernal pool habitats should be viewed as more important than impacts to freshwater marsh.

Table 4-19 Comparison of Direct Impacts to Key Resources

Alignment	Natural Communities	Wetlands / Waters	Summary
A5C1	93.68 ha (231.5 acres) grasslands containing vernal pools 2.06 ha (5.1 acres) riparian forest 6.11 ha (15.1 acres) oak woodland	7.85 ha (19.4 acres) wetlands/waters 4.656.5 ha (11.5 acres) vernal pools/swales 2.59 ha (6.4 acres) of marsh Two high value vernal pool complexes	Greatest total wetland, vernal pool, grassland w/ vernal pools and riparian forest impacts of any alternative
AAC2	88.18 ha (217.9 acres) grasslands containing vernal pools 1.05 ha (2.6 acres) riparian forest 10.16 ha (25.1 acres) oak woodland	6.23 ha (15.4 acres) wetlands/waters 3.80 ha (9.4 acres) vernal pools/swales 1.83 ha (4.5 acres) of marsh Two high value vernal pool complexes	Less impact to riparian forest, total wetlands and vernal pools than A5C1; large impact to oak woodlands
D1	76.01 (187.8 acres) grasslands containing vernal pools 1.13 ha (2.8) riparian forest 0.4 ha (1.0 acre) oak woodland	5.30 ha (13.1 acres) wetlands/waters 2.43 ha (6.0 acres) vernal pools/swales 2.38 ha (5.9 acres) of marsh One high value marsh	Less impact to vernal pool grasslands, vernal pools and total wetlands than AAC2 and A5C1. Small impact to oak woodlands.

Alignment	Natural Communities	Wetlands / Waters	Summary
D13	70.05 ha (173.1 ac) grasslands containing vernal pools 1.21 ha (3.0 ac) riparian forest 3.28 ha (8.1 ac) oak woodland	4.73 ha (11.7 ac) wetlands/waters 2.14 ha (5.3 ac) vernal pools/swales 2.22 ha (5.5 ac) of marsh One high value marsh	Comparable to D1 except for greater impact to oak woodlands, less impact to vernal pools.
D13 Mod. South	76.65 ha (189.4 ac) grasslands containing vernal pools 1.05 ha (2.6 ac) riparian forest 0.08 ha (0.2 ac) oak woodland	5.91 ha (14.6 ac) wetlands/waters 3.28 ha (8.1 ac) vernal pools/swales 2.22 ha (5.5 ac) of marsh One high value marsh	Greatest impact to wetlands and vernal pools of any D alternative. Smallest impact to oak woodlands of any alternative.
D13 Mod. North - Preferred Alternative	80.98 ha (200.1 ac) grasslands containing vernal pools 1.21 ha (3.0 ac) riparian forest 3.28 ha (8.1 ac) oak woodland	5.5 ha (13.6 ac) wetlands/waters 2.23 ha (5.5 ac) vernal pools/swales 2.95 ha (7.3 ac) of marsh One high value marsh	Impacts comparable to D13 except for greater impact to grassland/vernal pool complex.

Table 4-20 Preferred Alternative Revised Impacts

D13 North Modified	Wetlands/ Non-wetland Waters	Natural Communities Wildlife, Fisheries	Water Quality	Agricultural Land
Direct Impacts	0.11 ha (0.26 ac) non - wetlands/waters 10.9 ha (26.9 ac) vernal pools/swales 6.54 ha (16.15 ac) of vernal and freshwater marsh	0.01 ha (0.02 ac) willow scrub 17.13 ha (42.33 ac) non-native grassland 113.49 ha (280.43 ac) grassland northern hardpan vernal pool complex 1.65 ha (4.07 ac) grassland/northern volcanic mudflow vernal pool complex 0.69 ha (1.70 ac) mixed riparian forest 5.35 ha (13.22 ac) mixed oak woodland 9.55 ha (23.59 ac) vernal pool fairy shrimp critical habitat	333.1 ha (823 ac) footprint with 9 stream crossings	157.19 ha (388.40 ac)
Indirect Impacts [1]	8.5 ha (21.0 ac) vernal pools/swales	6.93 ha (17.12 ac) vernal pool fairy shrimp critical habitat	377.2 ha (932 ac) footprint	

[1] Indirect impacts were determined based upon USFWS guidelines and in cooperation during Section 7 consultation

4.8.6 Jurisdictional Waters

The wetlands delineation was completed in 1994, and verified by the USACE. (See Chapter 7, Comments and Coordination) After discussion with the USACE, it was agreed that for the purposes of comparison of the alternatives, the 1994 delineation would be used (Personal communication, Cavanaugh, March 10,1998). An additional wetland verification was completed and submitted to USACE for approval and verification in March 2004. The proposed project will impact wetlands and other waters subject to regulation by the USACE and/or CDFG.

Impacts to wetlands and other jurisdictional waters within each alternative alignment are presented in Table 4-21. The table shows acreage of each wetland type

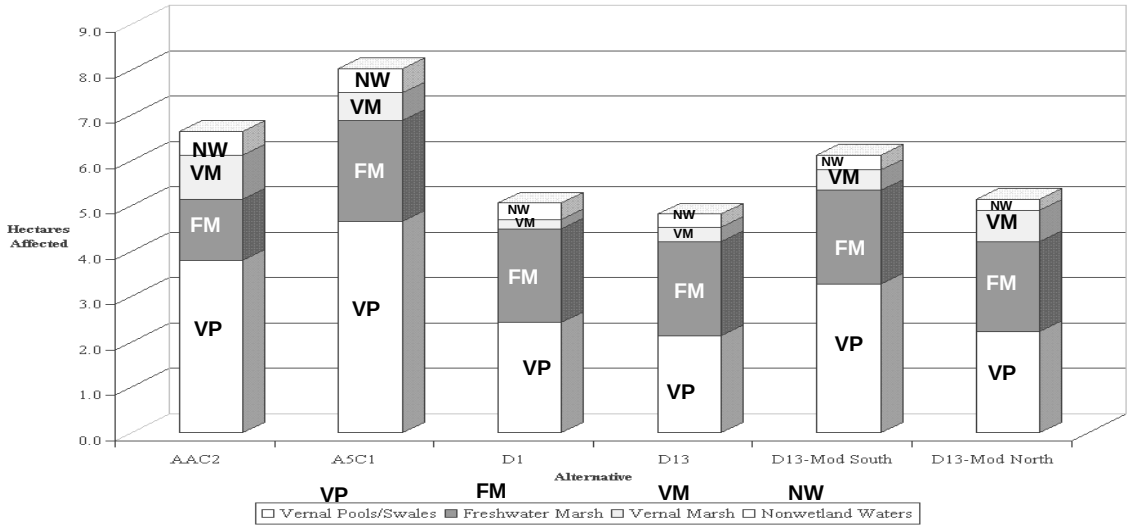
within each alternative alignment. The total acreage of jurisdictional waters within the project area is also provided for comparison.

Figure 4-5 provides a graphical presentation of the impacts to USACE jurisdictional waters with each project alternative. Figure 3-18 in Chapter 3, shows an aerial with the wetlands marked along with an overlay of the proposed project.

Table 4-21 Impacts to Jurisdictional Waters Occurring in the Study Area

USACE Wetlands	**Total Within Study Area**	**A5C1**	**AAC2**	**D1**	**D13**	**D13 - Mod. South**	**D13 - Mod. North (Preferred Alternative)**
Willow Scrub	1.90 ha	0.08 ha	0.08 ha	0.12 ha	0.08 ha	0.08 ha	0.08 ha
	4.70 ac	*0.20 ac*	*0.20 ac*	*0.30 ac*	*0.20 ac*	*020 ac*	*0.20 ac*
Freshwater Marsh	61.47 ha	2.23 ha	1.34 ha	2.06 ha	2.06 ha	2.06 ha	1.98 ha
	151.90 ac	*5.50 ac*	*3.30 ac*	*5.10 ac*	*5.10 ac*	*5.10 ac*	*4.90 ac*
Vernal Marsh	10.32 ha	0.36 ha	0.49 ha	0.32 ha	0.16 ha	0.16 ha	0.97 ha
	25.50 ac	*0.90 ac*	*1.20 ac*	*0.80 ac*	*0.40 ac*	*0.40 ac*	*2.40 ac*
Vernal Pool	31.24 ha	4.29 ha	3.44 ha	2.06 ha	1.74 ha	2.87 ha	1.78 ha
	77.20 ac	*10.60 ac*	*8.50 ac*	*5.10 ac*	*4.30 ac*	*7.10 ac*	*4.40 ac*
Vernal Swale	2.87 ha	0.36 ha	0.36 ha	0.36 ha	0.40 ha	0.40 ha	0.45 ha
	7.10 ac	*0.90 ac*	*0.90 ac*	*0.90 ac*	*1.00 ac*	*1.00 ac*	*1.10 ac*
Total USACE Wetlands	107.81 ha	7.33 ha	5.71 ha	4.94 ha	4.45 ha	5.58 ha	5.26 ha
	266.40 ac	*18.10 ac*	*14.10 ac*	*12.20 ac*	*11.00 ac*	*13.80 ac*	*13.00 ac*
USACE Waters of U.S.	11.33 ha	0.53 ha	0.53 ha	0.36 ha	0.28 ha	0.32 ha	0.24 ha
	28.00 ac	*1.30 ac*	*1.30 ac*	*0.90 ac*	*0.70 ac*	*0.80 ac*	*0.60 ac*
Total USACE Jurisdictional Waters	119.14 ha	7.85 ha	6.23 ha	5.3 ha	4.73 ha	5.91 ha	5.50 ha
	294.40 ac	*19.40 ac*	*15.40 ac*	*13.10 ac*	*11.70 ac*	*14.60 ac*	*13.6 ac*
CDFG Jurisdictional Waters	92.55 ha	4.90 ha	2.99 ha	3.68 ha	3.64 ha	3.52 ha	3.52 ha
	228.7 ac	*12.10 ac*	*7.40 ac*	*9.10 ac*	*9.00 ac*	*8.70 ac*	*8.70 ac*

Figure 4-5 Potential Impacts to USACE Jurisdictional Waters



CDFG jurisdiction excludes vernal pools and other wetland features that are not part of a stream or lake; however, riparian habitat, freshwater marsh, willow scrub and open water habitats are included in CDFG jurisdiction.

As shown in the preceding table and figure, all alignments impact jurisdictional waters, including wetlands. The eastern corridor alternatives impact a proportionately greater area of vernal pools and swales, including the high value vernal pool complex west of the clay pits identified in the Wetland Value Assessment (Chapter 3, Wetlands/Jurisdictional Waters Assessment). The western corridor alternatives impact slightly more marsh habitat, including the high value marsh complex along the east end of Markham Ravine identified in the Wetland Value Assessment. Overall, the impacts to jurisdictional waters are greater with the eastern corridor alternatives, and particularly the A5C1 alignment, which affects more jurisdictional waters than the next highest impacting alternative, AAC2.

4.8.7 Updated Impacts to Plant Communities for D13 North Modified (Preferred Alternative)

Impacts were calculated based upon preliminary design information to provide a basis for comparison of the alternatives. After receiving the LEDPA concurrence from EPA and USACE, impacts were calculated for the preferred alternative considering refined design and using the 250 foot buffer around vernal pools recommended by the FWS. The revised impacts are listed in Table 4-22. All of the other alternatives, if chosen as the LEDPA; would have similar increased impacts to resources with these revisions. Therefore, the conclusion that D13 North Modified is the LEDPA has not changed.

The increase in impacts is due to revised design information that was applied to the LEDPA and the application of FWS guidelines and recommendations regarding direct and indirect impacts. Initially the impacts of vernal pools were calculated as follows; if a vernal pool was partially within the project footprint and partially outside of the footprint, the portion that was within the direct project impact area was calculated as being directly impacted and the area outside of the project footprint was calculated as indirectly impacted. In addition, anything that was within a 250-foot corridor on either side of the project limits was calculated as being indirectly impacted (according to FWS guideline interpretation). However, after this original impact calculation was submitted to FWS, FWS during the Section 7 consultation requested that the calculations be revised to meet their interpretation of the guidelines. Therefore, any vernal pool that is partially impacted by the project is now considered directly impacted and vernal pools that are considered hydrologically connected per FWS are now considered indirectly impacted even if they are beyond the original 250-foot indirect corridor area.

Table 4-22 Revised Impacts to Plant Communities Occurring in the Study Area

Community	Total Within Study Area	Original D13-Modified North	Revised D13 - Modified North (Preferred Alternative)
Developed/ Disturbed	176.93 ha	18.78 ha	30.82 ha
	437.2 ac	*46.40 ac*	*76.15 ac*
	8.5 %	8.75%	9.26%
Agricultural Lands	873.99 ha	94.74 ha	157.19 ha
	2159.6 ac	*234.10 ac*	*388.40 ac*
	42.2 %	44.13%	47.21%
Non-native Grassland	211.42 ha	12.42 ha	17.13 ha
	522.4 ac	*30.70 ac*	*42.33 ac*
	10.2 %	5.79%	5.15%
Mixed Oak Woodland	49.37 ha	3.28 ha	5.35 ha
	122.0 ac	*8.10 ac*	*13.22 ac*
	2.4 %	1.53%	1.61%
Mixed Riparian Forest	17.85 ha	1.21 ha	.69 ha
	44.1 ac	*3.00 ac*	*1.70 ac*
	0.9 %	0.57 %	0.21 %
Valley Freshwater Marsh	61.47 ha	1.98 ha	.99 ha
	151.9 ac	*4.90 ac*	*2.44 ac*
	3.0 %	.92%	.30 %
Great Valley Willow Scrub	1.9 ha	0.08 ha	0.01 ha
	4.7 ac	*0.20 ac*	*0.02 ac*
	0.1 %	0.04%	0.0%
Grassland / Northern Hardpan Vernal Pool Complex	646.43 ha	78.11 ha	113.49 ha
	1597.3 ac	*193.00 ac*	*280.43 ac*
	31.2 %	36.38 %	34.09 %
Grassland/Northern	11.9 ha	2.87 ha	1.65 ha

Community	Total Within Study Area	Original D13-Modified North	Revised D13 - Modified North (Preferred Alternative)
Volcanic .Mudflow Vernal Pool Complex	*29.4 ac*	*7.10 ac*	*4.07 ac*
	0.6 %	1.34%	.49%
Vernal Marsh	10.32 ha	0.97 ha	5.55 ha
	25.5 ac	*2.40 ac*	*13.71 ac*
	0.5 %	0.45 %	1.67 %
Open Water	11.33 ha	0.24 ha	0.11 ha
	28.0 ac	*0.60 ac*	*0.26 ac*
	0.5 %	0.11%	0.03%
Total	**2072.91 ha**	**214.69 ha**	**332.96 ha**
	5122.1 ac	***530.5 ac***	***822.73 ac***
	100.0 %	**100.0%**	**100.0%**

The greatest changes in impacts for the D13 North Modified (Preferred Alternative) are in the Agricultural Lands and Grassland/Northern Hardpan Vernal Pool Complex categories. The original impacts to Agricultural Lands was calculated at 94.74 ha (234.10 ac) compared to the revised impacts of 157.19 ha (388.40 ac), an increase of 62.45 ha (154.30 ac). The original Grassland/Northern Hardpan Vernal Pool Complex impacts were calculated as 78.11 ha (193.00 ac) compared to 113.49 (280.43 ac), a difference of 35.38 ha (87.43 ac). These figures represent corrections in design and changes in impacts due to application of regulatory methodology.

4.8.8 Proposed Avoidance, Minimization and Mitigation Measures for Natural Resources

Introduction

The project was designed to avoid the natural resources as much as possible and has also employed many design features that serve to avoid and minimize as much as possible the natural resources in the study area. In spite of these efforts, impacts to natural resources and protected species still occur. Therefore, mitigation for the impact to these resources is required. The overall goal of the mitigation program is to offset project impacts to: 1) jurisdictional wetlands and other waters in terms of area and functions and values; 2) oak riparian forest and woodlands and individual oak and other trees; and 3) State and/or federally listed special status species: Swainson's hawk, vernal pool fairy shrimp and tadpole shrimp and valley elderberry longhorn beetle, Central Valley steelhead and Central Valley fall-run chinook salmon.

This goal will be achieved through the following three elements: 1) permanent preservation of existing high quality vernal pools and other wetlands, riparian habitats, oak woodands, and grasslands; 2) restoration of habitats temporarily impacted during

project construction; and 3) compensation through creation of new wetlands, riparian habitats, oak woodlands, and other habitats with functions and values comparable to or better than the impacted areas. The use of all of these strategies will increase the likelihood that project impacts to biological resources and wetlands are appropriately offset.

On-site restoration of temporary impacts following completion of construction is also a preferred strategy that assures replacement of functions and values where they have been temporarily interrupted. Restoration of degraded habitats will be employed wherever possible and offers greater assurance of success compared with creation of habitats in areas where they never occurred.

Finally, this approach relies on advance mitigation of impacts wherever possible to reduce temporal loss of habitat functions and provide greater assurance of success. If mitigation can be implemented in advance and shown to be successful, it also reduces or eliminates the need to increase mitigation ratios in order to compensate for temporal habitat losses and the risk of mitigation failure.

Mitigation of various types and at various ratios is proposed depending on the resource affected. The proposed mitigation ratios are based on the goals described above, and consider temporal habitat loss and the risk of mitigation failure. Agency mitigation guidelines are also addressed. A summary of the proposed mitigation elements is presented in Table 4-23. Additional mitigation for impacts to these species is described in the Mitigation and Monitoring Plan (MMP) and includes preservation of habitat and additional revegetation and monitoring requirements. A draft MMP was reviewed by USACE, EPA and FWS and preliminary concurrence was obtained from USACE and EPA in December 2004. A final mitigation plan will be prepared in conjunction with the regulatory agencies and will be submitted for final approval before the project is constructed.

Table 4-23 Proposed Compensatory Mitigation Requirements for Preferred Alternative D13 North Modified

Habitat Type	Impact	Proposed Mitigation Strategy	Proposed Preservation	Proposed Creation	Proposed Restoration
Jurisdictional Waters					
Vernal pools and swales (for Section 404 purposes) Note: This mitigation element is fully met through vernal pool invertebrate mitigation described below	Direct: 4.23 ha (10.45 ac)	Preservation of vernal pool wetlands at a 3:1 ratio and creation at a 1:1 ratio Preservation of vernal pool wetlands at a 1:1 ratio	12.85 ha (31.76 ac)	4.19[1] ha (10.35 ac)	———
	Indirect: 12.16 ha (30.05 ac)		12.16 ha (30.05 ac)		
	Total: 16.39 ha (40.50 ac)		Total: 25.16 ha (61.81 ac)		

Habitat Type	Impact	Proposed Mitigation Strategy	Proposed Preservation	Proposed Creation	Proposed Restoration
Vernal marsh, freshwater marsh, and non wetland open water habitats	Permanent: 6.64 ha (16.41 ac)	Creation of new marsh habitat at a 1:1 ratio Creation or restoration of marsh habitat at 1:1 ratio	_____	6.64 ha (16.41 ac)	_____
	Temporary: 0.18 ha (0.45 ac)			0.18 ha (0.45 ac)	
Willow scrub habitats	0.008 ha (0.02 ac)	Creation of new willow scrub habitat at a 1.5:1 ratio	_____	0.012 ha (0.03 ac)	_____
Mixed riparian forest habitats	Permanent: 0.69 ha (1.70 ac) Temporary: 1.52 ha (3.76 ac)	Preservation of existing habitat at a 2:1 ratio for offsetting permanent impacts Habitat restoration/creation providing sufficient area for tree planting at a maximum density of 400 trees/ac on-site and 242 trees/ac off-site; for 6,550 planted trees, this equates to 9.96 ha (24.61 ac), a 4.5:1 habitat replacement ratio	1.38 ha (3.40 ac)	Restoration/creation with a total area of 9.96 ha (24.61 ac), including 1.52 ha (3.76 ac) on-site and 8.44 ha (20.85 ac) off-site Total area of 9.96 ha (24.61 ac)	
Mixed riparian forest trees	431 trees with 16,637 cm (6,550 in) total dbh	Tree planting @ 1 sapling per 1" dbh impact	_____	Planting of 6,550 tree saplings on 9.96 ha (24.61 ac)	
Swainson's hawk	236 ha (584 ac) foraging habitat w/in 16 km (10 mi) of active nest	Preservation of existing grassland habitat through fee title or conservation easement according to CDFG ratios	153.8-177.7 ha (380-439 ac) preserve depending on extent of active mgmt allowed	NA	NA
Central Valley steelhead and fall-run Chinook salmon	Temporary: 1.52 ha (3.76 ac) SRA habitat; 0.06 ha (0.15 ac) open water Permanent: 0.69 ha (1.70 ac) SRA habitat	Included under open water and mixed riparian forest mitigation above			
VELB	2 plants with 10 stems >1" diameter	Transplant elderberries / additional plantings per 1999 FWS guidelines	0.10 ha (0.24 ac) conservation area	_____	Planting of 29 elderberries and 29 associates
Vernal pool fairy shrimp/ tadpole shrimp (based on FWS guidelines for direct/indirect impacts)	Direct: 10.90 ha 26.94 ac Indirect: 5.49 ha (13.56 ac)	Combined preservation/ creation of vernal pool wetlands at a 3:1 ratio Preservation of vernal pool wetlands at a 2:1 ratio	19.53 ha (48.257 ac) 5.49 ha (13.56 ac) Total: 25.01 ha (61.81 ac) [2]	4.19 ha (10.35 ac)	_____

[1] Based on maximum creation potential at Aitken Ranch.

[2] Includes 4.48 ha (11.06 ac) preservation already implemented at Aitken Ranch.

Compensatory Mitigation Sites

The Biological Opinions "Terms and Conditions" require Caltrans to protect a total of 72 wetted acres of vernal pool crustacean habitat in perpetuity including 62 acres of

existing and 10 acres of created habitat. The BO specifies four locations for acquisition and protection of the required habitat including the Aitken Ranch, the Rockwell-Mariner property and the Bryte Ranch Conservation Bank and Beach Lake. Mitigation at Aitken Ranch, Bryte Ranch and Beach Lakehas already been implemented. A conservation easement will be used to secure the Rockwell Mariner site.

The **Aitken Ranch** property is located just to the west of the City of Lincoln in western Placer County. The 128 ha (317 ac) property includes about 1,700 m (5,575 feet) of the Auburn Ravine riparian corridor as well as grassland/vernal pool complex and seasonal and perennial marsh. Aitken Ranch supports upland annual grasslands containing vernal pools and swales, mixed riparian forest dominated by valley oak, marsh/open water habitats, and ruderal disturbed areas.

The grasslands, riparian forest and marsh communities at Aitken Ranch provide moderate to high value for wildlife. Based on surveys performed by Wildlands, a variety of common terrestrial wildlife species is present on the property.

An USACE verified delineation has been performed for the Aitken Ranch property. The USACE confirmed the presence of 11.40 ha (28.18) ac of wetlands and other waters of the United States on the 128 ha (317 ac) parcel. This total includes 2.66 ha (6.57 ac) of vernal pools, 1.82 ha (4.49 ac) of seasonal swales, 0.57 ha (1.40 ac) of seasonal wetlands, 2.68 ha (6.63 ac) of emergent marsh, 1.72 ha (4.25 ac) of open water (pond), 1.11 ha (2.75 ac) of perennial stream and 0.03 ha (0.09 ac) of intermittent stream.

The Aitken Ranch Habitat Development Plan (HDP) meets the mitigation needs of the SR 65 project for vernal pool wetlands, oak woodlands and riparian forest.

The 232 ha (573 ac) **Bryte Ranch Conservation Bank** is located in eastern Sacramento County, extending north from the intersection of Calvine and Grant Line Roads. The property is owned by Bryte Ranch LLC. A conservation easement in favor of the California Department of Fish and Game (CDFG) has been recorded on the property and CDFG is funded through an endowment to provide management oversight. If title is transferred in the future, the property transfer documents will state that the new owner will be responsible for carrying out the mitigation plan for the property.

The site is characterized by flat to gently rolling terrain comprised of annual grassland dominated by non-native species including sticky tarweed (*Holocarpha virgata*), wild oat (*Avena fatua*), and soft brome (*Bromus hordeaceus*).

The northern portion of the site supports high-density vernal pools. The southern portion of the site supports scattered vernal pools and a seasonal wetland drainage. The central portion of the site is dominated by one large wetland feature, which exhibits both vernal pool and marsh-like characteristics. Vegetation in the pools is largely consistent

with other pools in the geographic area. The lower terrace of the property has many of the same, but is generally less diverse due to past agricultural practices.

A wetland delineation was conducted for the site during August and September 1998 in accordance with the 1987 USACE Manual (Environmental Laboratory 1987). A total of 67.56 ha (166.94 ac) of jurisdictional waters were verified by the USACE in 1999. The property includes 742 vernal pools with an area of 55.9 ha (138.2 ac) and 1.5 ha (3.6 ac) of interconnecting swales.

The 57.5 ha (142-acre) **Beach Lake Mitigation Bank** (BLMB) is located immediately south of Morrison Creek between the Sacramento River and I-5, west of the City of Elk Grove, in Sacramento County. The BLMB is located within the Stone Lakes National Wildlife Refuge. In 1994, Caltrans entered into a formal mitigation banking agreement with Federal Highways Administration, EPA, FWS, USACE and CDFG. Caltrans currently owns the property in fee. Once the mitigation credits are exhausted, Caltrans plans to transfer ownership of the property to FWS as part of the Stone Lakes refuge.

The BLMB consists of a complex of wetland habitats with intervening uplands. Before wetland enhancement, most of the property was in agricultural use. Natural communities on the site included cottonwood forest, Valley oak riparian forest, willow scrub, freshwater marsh, and seasonal marsh. These habitats were primarily associated with Beach Lake and Morrison Creek. In 1992, Caltrans delineated 14.8 ha (36.6 ac) of wetlands on the property.

The BLMB was designed primarily for mitigation of freshwater valley wetlands (excluding vernal pools). Wetlands include three constructed ponds supporting seasonal and permanent marsh and woody riparian habitats comprised of forested, shrub/scrub, and woodland types.

The **Rockwell/Mariner property** is one of the last un-fragmented vernal pool/grassland complexes remaining in western Placer County. The 792-acre parcel, which contains vernal pools and upland, provides connectivity between neighboring Auburn Ravine grassland vernal pool area to the south and the Coon Creek floodplain and riparian area to the north. Without this link, maintenance of an un-fragmented, inter-connected reserve system will be difficult to achieve. The result of which effects migratory pathways (i.e. continuity), genetic integrity, and overall biodiversity.

Given the quality of the vernal pool complexes known to exist on the Rockwell/Mariner property, it is likely that many Federal and State protected species, both plant species and the fairy shrimp and the tadpole shrimp would be found there. In

addition, the upland areas would support Federal and State protected species such as the Swainson's hawk and other grassland birds and mammals.

The Rockwell-Mariner property was identified in 2004 as a second vital site needing protection due to the property's particular location and apparent high concentration of undisturbed vernal pool crustaceans habitat. As a proposed conservation measure, Caltrans would acquire the property to preserve its significant existing habitat values. As a result, the site would also be protected from any future development that might follow the building of the bypass.

Mitigation of wetlands, waters of U.S. and riparian habitat

Caltrans has investigated a number of options for mitigating impacts to wetlands and riparian habitats. The options considered fall into four categories: 1) use banked credits at Caltrans Beach Lake Mitigation Bank in Sacramento County; 2) purchase mitigation credits from an existing or proposed, private mitigation bank that serves the project area; 3) purchase land or conservation easements over land with high quality resources and preserve it in perpetuity; and 4) use surplus lands purchased for construction of the Lincoln Bypass as mitigation areas.

After consideration of these mitigation options, Caltrans determined that the most effective mitigation approach was a combination of the following elements:

1. Perform on-site restoration of marsh and riparian habitats temporarily impacted during project construction and create on-site vernal marsh habitat at the Yankee Slough crossing;
2. The Aitken Ranch conservation area fulfills much of the proposed compensatory mitigation for the SR 65 project. Aitken Ranch has quality vernal pools and swales, mixed riparian forest, and grassland for preservation, and areas appropriate for proposed compensatory habitat creation activities.
3. Purchase fee title or a conservation easement over a private property (properties) located within the vicinity of SR 65 project area.
4. Use available credits at the Beach Lake mitigation bank for offsetting impacts to freshwater marsh and riparian habitats. Beach Lake is a FWS approved Caltrans mitigation bank located in Sacramento County that has well established riparian and marsh habitats available for use on the SR 65 project.
5. Purchase vernal pool preservation credits from an approved conservation bank to make up any shortage in required preservation credits.

Caltrans is also working with Placer Legacy and the Environmental Protection Agency to conserve the Coon Creek riparian corridor through purchase of conservation

easements within the Coon Creek watershed. This project feature will help preserve open space along the Coon Creek corridor in perpetuity.

Mitigation Measures for Vernal and Freshwater Marsh, Open Water and Willow Scrub

Vernal and freshwater marsh, open water, and willow scrub are discussed together because they typically occur in geographic proximity (e.g., as part of a single wetland system). The project will result in permanent, direct impacts to 5.55 ha (13.71 ac) of vernal marsh habitats, 0.99 ha (2.44 ac) of freshwater marsh habitats, 0.008 ha (0.02 ac) of willow scrub habitat, and 0.11 ha (0.26 ac) of open water habitat. An additional 0.12 ha (0.30 ac) of freshwater marsh and 0.06 ha (0.15 ac) of open water will be temporarily impacted during project construction. The basic approach for mitigation of these wetland and open water habitats is to create replacement habitat that provides functions and values comparable with the habitats to be impacted. Restoration of 0.12 ha (0.30 ac) of freshwater marsh habitat temporarily impacted during construction will occur on site at Ingram Slough; restoration of 0.06 ha (0.15 ac) of temporary impact to open water will occur on site at Auburn Ravine. Mitigation (0.81 ha/2.00 ac) for a portion of the permanent impact to vernal marsh will also be provided on site at Yankee Slough. The remainder of the vernal marsh mitigation (4.74 ha /11.71 ac), freshwater marsh mitigation (0.99 ha/2.44 ac), willow scrub mitigation (0.01 ha/0.03 ac), and open water mitigation (0.11 ha/0.26 ac) will occur off site at Aitken Ranch and Beach Lake Mitigation Bank.

Mitigation for vernal and freshwater marsh and open water habitats is proposed at a 1:1 ratio; mitigation for willow scrub habitat is proposed at a 1.5:1 ratio. Normally, these ratios are increased in order to offset the risk of mitigation failure and the temporal loss of habitat functions as the replacement habitat develops. However, for this project, mitigation for these habitats is already in place and will be well established by the time project impacts occur. Created wetland habitats at Beach Lake have been in place for over ten years and are well developed. Habitats at Aitken Ranch will also have been in place for several years before construction of the SR 65 project begins.

Mitigation Measures for the Valley Vernal Pool Fairy Shrimp and Tadpole Shrimp

Mitigation for vernal pool fairy shrimp and tadpole shrimp will be accomplished through preservation and creation of vernal pool and swale habitats as described above. Table 4-24 shows the direct and indirect impacts to vernal pools. Table 4-25 shows the proposed conservation areas, both preservation and creation along with the acreage proposed at each site.

Table 4-24 Vernal Pool Impacts and Mitigation

	Acreage Affected	Acres of Preservation	Acres of Creation
Direct Total	26.94 ac	70.47 ac	10.35 ac
Indirect Total	13.56 ac	27.12 ac	--
Total	40.50 ac	97.59 ac	10.35 ac

Table 4-25 Proposed Conservation Areas to Create and Preserve Vernal Pool Habitat in Perpetuity

	Aitken Ranch	Rockwell/Mariner	Bryte Ranch	Total Acreage
Preservation	11.06 ac	43.22 ac	7.53 ac	61.81 ac
Creation	10.35 ac	-	-	10.53 ac
Total	21.41 ac	43.22 ac	7.53 ac	72.16 ac

Mitigation Measures for Swainson's Hawk

Mitigation for impacts to the State listed Swainson's hawk will be accomplished in accordance with CDFG guidelines. The guidelines require the acquisition of Habitat Management lands at various ratios based on the distance of the proposed project from an active nest tree. Habitat Management lands may be acquired in fee title, or through a conservation easement, based on the following criteria:

For projects within one mile of an active nest tree:

- Option A: One acre of Habitat Management lands for each acre of development where at least 10 percent of the Habitat Management lands are provided through fee title or conservation easement that allows active management of the habitat; the remaining 90 percent can be provided through conservation easement, acceptable to CDFG, on agricultural lands that provide foraging habitat for Swainson's hawks; or
- Option B: One-half acre of Habitat Management lands for each acre of development where all of the lands are provided through fee title or a conservation easement that allows for active management of the habitat.

For projects within five miles, but farther than one mile, from an active nest tree:

- Three-fourths acre of Habitat Management lands for each acre of development where all of the lands are provided through fee title or conservation easement, acceptable to CDFG, on agricultural lands that provide foraging habitat for Swainson's hawks.

For projects within ten miles, but farther than five miles, of an active nest tree:

- One-half acre of Habitat Management lands for each acre of development where all of the lands are provided through fee title or conservation easement,

acceptable to CDFG, on agricultural lands that provide foraging habitat for Swainson's hawks.

Due to the linear nature of the SR 65 project, the distance to an active nest tree varies along the alignment. The total area of impacted foraging habitats within each distance range to active nests was calculated, and the mitigation requirements are summarized below.

Table 4-26 Swainson's hawk Mitigation Measures (CEQA)

Distance to Nest Tree	Area	Mitigation Requirement
Less than one mile	47.7 ha (118 acres)	a) 47.7 ha (118 acres) of suitable lands, 10% must be available for active management; or b) 23.9 ha (59 acres) of suitable lands, all of which must be available for active management
Greater than one mile/less than five miles	141.2 ha (349 acres)	105.9 ha (261.7 acres) of suitable lands
Greater than five miles/less than ten miles	47.3 ha (117 acres)	23.7 ha (58.5 acres) of suitable lands
Greater than ten miles	0	No measures required
Total	**236.3 ha (584 acres)**	**177.6 ha (438.2 acres) with option a; or 153.5 ha (379.2 acres) with option b**

To accomplish part of this mitigation, 97.2 ha (240.5 acres) of grassland habitat will be preserved in perpetuity at Aitken Ranch. This preserved grassland consists of the matrix in which the preserved vernal pools and swales are located, and will be managed for both Swainson's hawk and vernal pool species. The active management of Aitken Ranch for Swainson's hawk will allow option "b" for mitigation acreage requirements to be used; therefore, an additional 56.1 ha (138.7 acres) of Swainson's hawk grassland preservation will need to be provided at another suitable location.

Mitigation Measures for Valley Elderberry Longhorn Beetle

Mitigation for impacts to VELB will be accomplished in accordance with the 1999 FWS Mitigation Guidelines (USDI Fish and Wildlife Service 1999). These guidelines specify that elderberry plants will be avoided whenever possible. If avoidance is not possible, elderberry shrubs will be transplanted. In addition, each elderberry stem measuring greater than one inch in diameter that is impacted (either by removal or transplanting) will be replaced with seedlings or cuttings at a ratio ranging from 1:1 to 8:1. Impacted elderberry shrubs in riparian communities require greater replacement ratios than impacted elderberry shrubs in non-riparian settings. Studies have shown that VELB occur in greater abundance in dense native plant communities with a mixed understory; accordingly, the guidelines require associated natives to be planted at a 1:1 or 2:1 ratio for each elderberry seedling planted. The replanting must occur in a specified

conservation area. Elderberry shrubs must be surrounded by a 30.48 m (100 ft) buffer from any disturbance or activity. Firebreaks may not be included in conservation areas or buffer zones. The replanting ratios are summarized in Table 4-27 below.

If the elderberry plants cannot be transplanted, FWS may allow replanting at a higher ratio than stated in the guidelines for each plant that cannot be transplanted. Each transplanted elderberry shrub must be provided with an area of 548.6 m^2 (1,800 ft^2), with a maximum of five elderberry cuttings or seedlings planted within that 548.6 m^2 (1,800 ft^2) area. A maximum of five associated natives may be planted within the same area. Every five additional elderberry seedlings or cuttings and associated natives must be provided with an additional 548.6 m^2 (1,800 ft^2).

The preferred alternative would directly impact two elderberry plants that include ten stems over one inch diameter at ground level. The plants are located in an area where they cannot be avoided without major project modifications that would likely result in other impacts. The elderberry plants are both located along an old breakout channel of Auburn Ravine. Since this area was historically part of a larger riparian system, these plants are considered located within a riparian setting. No exit holes were observed on the plants. Proposed mitigation, consistent with FWS guidelines, is as follows:

1. The two elderberry shrubs which are located within 6 m (20 ft) of the centerline of the proposed alignment will be transplanted to a Service-approved conservation area that will be protected in perpetuity.
2. To compensate for direct affects to the beetle, prior to ground-breaking activities at the project site, Caltrans will establish 29 rooted elderberry seedlings and 29 associated native plants at a Service-approved conservation area.
3. The proposed conservation area is the Aitken Ranch property. The two transplanted shrubs, seedlings and plantings will be established on this property. The minimum area required is 0.10 ha (0.24 ac) to ensure that no more than five elderberry seedlings and five associated native plants are planted per 548.6 m^2 (1,800 ft^2). The conservation area shall be managed and monitored in perpetuity as outlined in the Beetle Conservation Guidelines (FWS 1999).

Table 4-27 Elderberry Mitigation per the Biological Opinion (FWS)

Size Category	No. of Stems	Exit Holes	Ratio	Elderberry Seedlings	Associated Species Ratio	Associated Species Plantings
1" - 3"	3	No	2:1	6	1:1	6
1" – 3"	0	Yes	4:1	0	2:1	0
3" – 5"	5	No	3:1	15	1:1	15
3" - 5"	0	Yes	6:1	0	2:1	0
>5"	2	No	4:1	8	1:1	8
>5"	0	Yes	8:1	0	2:1	0
TOTAL	**10**			**29**		**29**

Mitigation measures for the Central Valley Steelhead and Fall-Run Chinook salmon

In addition to the creation of mixed riparian forest habitat along Auburn Ravine at Aitken Ranch, Caltrans will re-vegetate all temporarily impacted riparian habitat (shaded riverine aquatic habitat) along the sections of Coon Creek and Auburn Ravine that are disturbed by project activities. Trees will be planted along the banks near bridge structures and within placed riprap, with monitoring to ensure sufficient survival for habitat development. A total of 15.22 ha (3.76 ac) of riparian forest habitat will be replaced on site with 1,504 plantings, consisting of 977 oak saplings/acorns plus 527 other riparian species at a density of 988 trees per ha (400 trees per ac).

Avoidance and Minimization for Natural Communities

1. To the maximum extent feasible, the final project alignment shall be routed to avoid or minimize impacts to high quality natural communities including oak woodland, riparian forest and grasslands with high concentrations of vernal pools.
2. Crossings of Auburn Ravine, Markham Ravine and Coon Creek shall be located where riparian resources are least extensive; crossings shall be aligned perpendicular to the riparian corridor to minimize the crossing impact.
3. Unavoidable impacts to mixed riparian forest shall be offset with a combination of on-site restoration and off-site creation or restoration of riparian forest habitat through in-kind planting of 1 tree sapling per 1" dbh impact for all trees lost; on-site planting will be at a maximum density of 400 trees/acre; off-site planting will be at a maximum density of 242 trees/acre. Overall, this is equivalent to a 4.5:1 ratio. In addition, preservation of existing oak riparian habitat at a 2:1 ratio will be secured to offset permanent loss of mature riparian oak habitat.
4. Unavoidable impacts to oak woodland habitats shall be offset through creation or restoration of oak woodland habitat to accommodate in-kind planting of one oak sapling per 1" dbh of trees impacted at maximum density of 200 trees/acre (equivalent to 2:1 ratio); and (2) preservation of existing oak woodland habitat at a 2:1 ratio. Oak woodland habitat used to offset impacts shall be protected in perpetuity through conservation easement, deed restriction or other equivalent measures.
5. Prior to construction during the spring breeding season, a qualified biologist shall conduct pre-construction surveys of impact areas to check for nesting birds. If nesting activity is detected, construction activities shall avoid nest sites until the biologist determines that the young have fledged or nesting activity has ceased.
6. Drainage shall be passed through the roadway prism via bridge or culvert. Culverts shall be straight (without bends) to facilitate wildlife movements.

7. All significant habitats located outside of construction areas shall be designated as Environmentally Sensitive Areas (ESA) and so designated on construction plans and specifications. No encroachment into ESA shall be allowed.
8. Where feasible, culverts will be designed with characteristics that will be conducive to wildlife movements.

4.8.9 Executive Order 13112: Invasive Species

Executive Order (EO) 13112 requires that federal agencies prevent and control the introduction and spread of invasive species. Federal agencies cannot authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species. To comply with EO 13112 Caltrans will implement the following measures:

- Construction supervisors and managers will be informed of the importance of controlling and preventing the spread of noxious weeds;
- Construction equipment leaving an identified invasive plant area will be cleaned at a designated vehicle wash facility;
- Prior to arriving at the project site, construction equipment (from a noxious weed-infested area or area of unknown weed status) will be cleaned of all attached soil or plant parts at a designated vehicle wash facility;
- Measures set forth in the Stormwater Pollution Prevention Plan (SWPPP) will be implemented to re-vegetate and restore disturbed areas immediately after construction is complete. Re-vegetation will require the use of certified weed-free native and non-native species mixes. The SWPPP will also specify that all disturbed areas will be weeded and reseeded in subsequent years if determined necessary.

4.8.10 Wetlands Only Practicable Alternative Finding

On federally funded projects, impacts on wetlands must be identified in the environmental document and alternatives that avoid wetlands must be considered. There is no avoidance alternative. If wetland impacts cannot be avoided, then all practicable measures to minimize harm must be included. This must be documented in a specific "Wetlands Only Practicable Alternative Finding" in the Final Environmental Document.

Since the determination of the preferred alternative (D13 North Modified) Caltrans has investigated numerous avoidance and minimization measures to reduce potential project impacts to listed species and other biological resources. A number of these measures have been incorporated into the project; these measures are summarized below:

- The footprint of the park and ride lot at the south end of the project will be reduced from 1500 to 200 spaces (with an initial construction of 150 spaces). In addition, the area for future braided ramps will be removed.
- Roadside ditches and side-slopes will be modified to minimize project footprint impacts south of Nelson Lane.
- The proposed interchange at Nelson Lane will be reduced to an at-grade intersection to reduce the project footprint in this area.
- The reach of Yankee Slough that meanders within the roadway footprint will be recreated outside of the roadway footprint to recreate pre-project hydrology and restore vernal marsh habitat on site.
- The height (profile) of the roadway north of North Yankee Slough and Riosa Road will be lowered to reduce the footprint at this location. This change avoids additional impacts from hauling operations.
- Proposed passing lanes will be eliminated at two locations to avoid the need to raise the height of the roadway and increase the footprint.
- The clearance between the catch line and the proposed right-of-way will be reduced from 5.0 m (16.4 ft) to 3.0 m (9.8 ft) on both sides of the freeway throughout the project limits.
- A proposed "v" ditch on both sides of the proposed alignment will be removed to decrease the project footprint.
- The minimum grade will be changed from 0.3% to 0.0 % wherever possible throughout the project limits. This change will decrease the height of the roadway, thus decreasing the side slopes and project footprint.
- A proposed detention basin east of the project corridor, just south of the South Sutter Water District canal, will be eliminated to avoid impacts to vernal pools at this location.
- All wetlands, riparian areas, and other sensitive vegetation/habitats adjacent to designated work areas will be designated as environmentally sensitive areas (ESAs) and clearly indicated as such on project construction plans. Project specifications will include a requirement that ESAs are clearly delineated with brightly colored fencing, rope or equivalent before beginning construction.
- Measures consistent with the current Caltrans' Construction Site BMPs Manual (including the SWPPP and WPCP Manuals [http://www.dot.ca.gov/hq/construc/Construction_Site_BMPs.pdf]) will be implemented to minimize erosion and runoff during construction.

- Storm water runoff from the proposed roadway will be collected and routed into water treatment systems (e.g., bioswales, biostrips, or detention basins) before discharging into drainages in the project area.

All practicable measures to minimize harm have been implemented. Based upon the above considerations, it is determined that there is no practicable alternative to the proposed construction in wetlands and that the proposed action includes all practicable measures to minimize harm to wetlands which may result from such use.

4.9 CULTURAL RESOURCES

A cultural resources inventory resulted in the identification of fifteen archaeological resources and the evaluation of eight pre-1946 architectural resources. The Historic Architectural Survey Report (HASR) and the supplemental HASR (completed in 1989 and 1990) evaluated a total of eight properties, two of which were determined to be potentially eligible for listing in the NRHP: the Fickewirth Ranch and the Sheridan Cash Store (a.k.a. Country Store). Two additional properties in the vicinity of the project have been listed on the National Register since 1990; the Lincoln Public Library at 590 Fifth Street (listed 12/10/90) and the Women's Club of Lincoln at 499 E Street (listed 5/30/01). Both of these buildings are within the town of Lincoln and not directly affected by the project.

In the Supplemental HASR (dated August 1990), 39 properties were treated in accordance with the December 20, 1989 "Memorandum of Understanding Regarding Evaluation of Post-1945 Buildings, Moved Pre-1945 Buildings, and Altered Pre-1945 Buildings." Of the 39 properties, 21 do not predate 1957 and thus require no further study. The remaining eighteen properties predate 1957 and were formally evaluated and determined to not be eligible for listing in the NRHP. The application of "Caltrans Interim Policy for the Treatment of Buildings Constructed in 1957 or Later" was documented in a statement of findings in the Supplemental HASR completed in September 2002. Appendix D contains the letters from SHPO.

Four of the archaeological finds were adjacent to, but outside of, the project study area and were not considered further. Eight of the remaining eleven archaeological resources were recorded as isolated finds or features and three were recorded as archaeological sites. Two of these three sites are considered potentially eligible for inclusion in the National Register of Historic Places (NRHP) until they have been evaluated for significance.

These two sites are potentially affected by the AAC2 alignment. The alignment passes through one of the sites and is in close proximity to the other. If the AAC2

alternative were chosen as the preferred alternative, the first site would have been tested for significance and eligibility for listing in the NRHP. An assessment of the impacts on this site cannot be made until the deposit has been evaluated.

Preliminary plans indicate that the third site will not be directly impacted by the proposed construction. As a result, the site will be designated as an environmentally sensitive area (ESA) to ensure its protection. If design plans are modified such that the site is impacted, it will be tested for significance for listing in the NRHP, and an assessment of the effects would be made at that time.

Two of the eight architectural resources were determined eligible for the NRHP by consensus of the State Historic Preservation Officer (SHPO) on October 21, 1991; the Fickewirth Ranch and the Sheridan Cash Store. Copies of the correspondence with SHPO can be found in Appendix D.

The Sheridan Cash Store is adjacent to A5C1, AAC2, D1, and D13, but will not be affected by any of these alternatives. The storefront sits approximately 24 m (80 ft) from the pavement edge of SR 65. This distance will not change if the highway is relinquished to the county, nor will additional right-of-way be required for any potential road improvements near the store. Traffic and its attendant noise are likely to decrease if any of the longer build alternatives are selected.

The eligibility of the Sheridan Cash Store under Criterion A is based on its association with Sheridan's economic development and for embodying the characteristics of its time, period or method of construction. The brick false-front store was designated a Point of Historical Interest by the California Historic Resource Commission on August 3, 1990, by virtue of being the only remaining commercial brick building in Sheridan. No new elements will be introduced into the setting; thus none of the proposed alignments will alter the characteristics of the property that qualify it for the NRHP.

The Fickewirth Ranch is located at 2780 Dowd Road, approximately 4.8 km (3.0 mi) south of the town of Sheridan. The property consists of a residence, a tank house, a windmill, a long shed (originally a chicken house), a timber-framed hay barn, a one-time blacksmith shop and several smaller miscellaneous sheds. The residence and most of the outbuildings were constructed in 1901. The house was originally built as a one-story Queen Anne cottage; a second story was added about 1912. The buildings on the property have been maintained in their original form with little or no modification. Materials used to maintain the property were of the same kind as the original, thereby serving to preserve the original character and integrity of the farm complex. The house is one of the earliest intact residences remaining in the local area.

Mr. and Mrs. Fickewirth currently own the ranch. The property is approximately 1524 m by 762 m (5000 ft by 2500 ft).

The Fickewirth Ranch has been determined eligible for the NRHP at the local level under Criterion C as an embodiment of its time, period, and method of construction. All of the structures on the property, in their form and function, contribute to this determination. Furthermore, the property remains in its rural setting.

Alternatives D1 and D13 and A5C1 would require a portion of the Fickewirth Ranch. The Department's and the FHWA, in applying the Criteria of Effect and Adverse Effect (36 CFR 800.9) have concluded that a "Finding of No Effect" is appropriate for each of the three alignments going through this property, and have obtained SHPO's concurrence on this determination. SHPO concurred with this determination on January 30, 1995. Copies of this correspondence can be found in Appendix D.

On February 2, 2006, Caltrans sent a letter to Mr. Wayne Donaldson, State Historic Preservation Officer (SHPO), seeking his office's concurrence in the substitution of a finding of "no adverse effect" pursuant to revised regulations issued by the Advisory Council on Historic Preservation (ACHP) (36 CFR Part 800), to replace the 1995 finding of "no effect," a term not found in the current ACHP regulations. The SHPO concurred in this finding on February 16, 2006. Both letters may be found in Appendix D.

The letter also advised the SHPO that his office's concurrence in FHWA's determination of no adverse effect could serve as the basis of a finding of *de minimis* impact under Section 4(f) of the Department of Transportation Act of 1966, 49 U.S.C. 303. Under the 40-year-old provisions of Section 4(f), the Secretary of Transportation may not use land from a property on or eligible for the National Register of Historic Places unless there is 1) no prudent and feasible alternative to the use of that land and 2) the Secretary has undertaken all possible planning to minimize harm to the historic property. Under a recently enacted amendment to Section 4(f), however, that statute will be considered satisfied if the project would result in a *de minimis* impact on the protected property. For historic sites, the new law states that the Secretary may find such a *de minimis* impact if consultation with the SHPO results in a determination that a transportation project will have "no adverse effect" on the historic site or that there will be "no historic properties affected" by the proposed project. With regard to the Fickeworth Ranch, the SHPO has concurred in the FHWA's determination of "no adverse effect" as the result of the "strip takes" contemplated by Alternatives D1, D13, and A5C1. Accordingly, the provisions of Section 4(f) would be considered satisfied should any of these alternatives be selected.

4.9.1 Application of the Criteria of Effect on the Fickewirth Ranch

Alternatives A5C1, D1 and D13 pass through the 104 ha (258 ac) agricultural parcel containing the Fickewirth Ranch. The proposed alignment for Alternative A5C1 lies approximately 457 m (1500 ft) from the ranch complex, while Alternative D1 and D13 are about 610 m (2000 ft) from the buildings. The elevation drops approximately 1.5 m (5 ft) between the building complex and each of the alignments. The proposed highway for these two alternatives will not be seen from the building complex, although vehicles on the highway will be visible. A similar condition would exist for the A5C1 alternative. Furthermore, the view of the alignments would largely be blocked from the Fickewirth residence by the surrounding outbuildings.

Projected traffic counts on this section of the proposed freeway are anticipated to be relatively low. A noise level projection model found that any increase in sound would be well below the criteria level of a significant noise impact as the minimum distance of 183 m (600 ft) from the ranch complex. The proposed alternatives are all at a much greater distance; thus, the increase in noise from the new highway will be negligible. Furthermore, because it is located immediately adjacent to Dowd Road, traffic and its attendant impacts have always been a factor in the setting of the ranch complex. The addition the proposed freeway at a distance of 457 to 610 m (1500-2000 ft) will not create elements that did not previously exist.

The eligibility of the Fickewirth Ranch is based on the type and period of the building complex. As no new elements would be introduced into the setting of the property, none of the alignments would alter any characteristic of the property that qualifies it for the National Register of Historic Places. Thus, the proposed project will have no adverse effect on the Fickewirth Ranch.

4.10 HAZARDOUS WASTE

The preferred alternative (D13 North Modified) proposed project work scope involves yellow traffic stripe removal at the beginning and end of the project limits, as well as the limits of work within all the local roads.

The preferred alternative requires the acquisition of several parcels. A record search dated January 5, 2004 and an updated Initial Site Assessment dated February 26, 1999 was reviewed. With the exception of two suspected contaminated parcels, no hazardous waste is expected to be encountered within the proposed parcels to be acquired. Access was denied to the suspicious properties, however; approximate clean up costs for hazardous waste could be as much as one million dollars.

Two parcels are expected to contain soil and groundwater hazardous waste contamination and other unknown contaminants. Access was denied to these property, but approximate clean up costs for hazardous waste could be as much as one million dollars. A hazardous waste Preliminary Site Investigation (PSI) is required to evaluate the condition of those properties and the need for avoidance and/or clean-up prior to acquisition.

Any building or other structure to be acquired will be evaluated for the presence of asbestos and lead-based paint. Due to the agricultural nature of the area, many of the parcels contain above ground storage tanks, which will require a PSI. In addition, many of the residences are equipped with septic systems; unknown conditions relating to the septic systems may exist.

Due to the former use of waste oil, potentially containing polychlorinated biphenyls (PCB's) to control dust in the railroad right-of-way, the railroad areas within the alignment could contain PCB affected soil as well as lead and/or diesel. These areas will require a PSI.

4.10.1 Avoidance and Minimization Recommendations

Avoidance and Minimization Measure: Survey and sampling analysis for Asbestos containing Materials & Lead-based paint

Comprehensive asbestos and lead-based paint surveys that meet the requirements of current EPA and OSHA regulations are will be implemented prior to any demolition activities associated with structures in the proposed alignment corridor. Any component that is impacted by demolition activities will be characterized to ensure proper handling and disposal.

Avoidance and Minimization Measure: Sampling and Testing of Yellow Traffic Striping along Existing Roadway

Depending upon the road widening/connection option used, yellow striping along existing SR 65 may require removal. However, if striping paint is to be removed or impacted in any manner, sampling and testing of the yellow striping scheduled for removal will be performed to determine the presence of lead and the need for mitigation prior to or during construction if the lead content is above the regulatory thresholds. A Lead Compliance Plan and a Health and Safety Plan will be prepared to address worker safety when working with potentially lead-bearing paint.

Avoidance and Minimization Measure: Sampling and Analysis of Transformer Fluid from Electrical Transformers.

A site reconnaissance indicated the presence of pole mounted electrical transformers that are potential sources of PCB's. If leaks from electrical transformers

that either will remain within the project construction zone or will require removal and/or relocation are encountered before or during construction, the transformer fluid will be sampled and analyzed by qualified personnel for detectable levels of PCBs. If PCBs are detected, the transformer will be removed and disposed of in accordance with regulatory agency requirements. Any stained soil encountered below electrical transformers with detectable PCBs levels will also be handled and disposed of in accordance with regulatory agency requirements. It is anticipated that, with the current standard of care, removal of any transformers for the project will not pose a significant hazardous materials risk.

Avoidance and Minimization Measure: Testing for Aerially Deposited Lead in Surface/Near-Surface soils.

A preliminary investigation and screening for ADL will be performed along the proposed project. Segments that will encroach/connect into existing SR 65 State Right-of-way shall be screened in order to determine the levels of lead in soil. Should ADL be encountered above regulatory thresholds, the soil will be handled and/or disposed of in accordance with regulatory agency requirements. A Lead Compliance Plan and a Health and Safety Plan will be prepared to address worker safety when working with potentially lead-bearing soils.

Avoidance and Minimization Measure: Soil and Groundwater sampling for hazardous waste contaminants.

A preliminary investigation and screening for soil and groundwater impacts from hazardous materials or wastes and/or petroleum hydrocarbons on a site-specific basis will be performed prior to acquisition in order to determine the levels of contamination. Should soil and or groundwater contamination be encountered above regulatory thresholds, the soil will be handled and/or disposed of in accordance with regulatory agency requirements. A Health and Safety Plan shall be prepared to address worker safety when working with potentially contaminated soils; Special Provisions apply to this type of project.

4.11 VISUAL RESOURCE IMPACTS

Visual character within the Study Area is changing due to planned growth as indicated in the Lincoln General Plan, Land Use Map (refer to Chapter 3 Affected Environment; Social, Economic and Land Use Section). Eventually, as more land becomes developed in this corridor, the rural visual quality will slowly transform into urban build-out. Development diminishes visual quality and character due to soundwalls and structures built adjacent to the right-of-way.

The D13 North Modified alternative is expected to result in similar visual impacts as the other D alternatives. All six alignments begin in the same general location, approximately 1.6 km (1 mi) south of the City of Lincoln. The alignments then cross over the UPTC railroad tracks and pass through west Lincoln where development is occurring. A park and ride site is planned slightly north of the overhead between the UPTC railroad tracks and existing SR 65. The large overhead (also known as an overpass) will provide expansive panoramic views from the roadway. Views from the overhead will provide a variety of visual elements, such as the City of Lincoln, pastureland, creek corridors, and oak woodland, the Sierra Nevada, Sutter Buttes and Coast Range.

This overhead could provide areas for planting on its soil-covered slopes. Once plantings mature, trees will provide an important visual vertical element. Once development and build-out occurs, this overhead may become the gateway to the City of Lincoln. It is very important to have an aesthetically pleasing, architecturally interesting structure since the overhead will dominate over surrounding uses, becoming a prominent visual feature.

All of the alignments, except for D1, break up a small cluster of rural home sites at the bend in Moore Road. This disrupts the unity and harmony of such enclaves and may lead to viewer confusion. It may be necessary to screen residences from the proposed highway. Screening methods include dense plantings for screening and barriers, possible soundwalls for noise attenuation and/or fencing with wood slats. A landscape architect will suggest the most feasible and appropriate screening method.

In and around Moore Road and Auburn Ravine is predominantly oak woodland. All the alignments run through this fading piece of California heritage land, causing the removal of prime oak habitat. California white oaks, also known as valley oaks, are the predominant species. Minimization of impacts to these heritage oak trees is of prime importance.

All of the alignments traverse Auburn Ravine. The bridge crossing Auburn Ravine will be integrated into existing landforms with a simple, clean and aesthetically pleasing design. If the channel needs to be relocated, its banks will be replanted with native species and restored to its existing conditions. This creek corridor provides a prime location for oak plantings.

The AC corridor

The **AAC2** and **A5C1** pull away from SR 65 approximately 322 km (200 ft) farther northward causing a wider bend to the west. After crossing Ingram Slough, these

alignments remove part of the Aitken Ranch Turkey Farm, causing the removal of three buildings and divide the rural home sites on Moore Road.

The AAC2 and A5C1 alignments continue northwest, requiring a second railroad overhead before tying into existing SR 65. This overhead is very similar to the first overhead where the Lincoln Bypass pulls away from existing SR 65. However, northbound views now show the rural nature of the foothills, the Sierra Nevada, Sutter Buttes, Coon Creek and nearby agriculture along with the rural community of Sheridan. Just before the Lincoln Bypass ends, the four-lane expressway narrows down into a two-lane highway and ties into existing SR 65. The Joiner Ranch Project Area to the east of the AC corridor is rapidly developing. Figure 4-6 illustrates the typical height, size, color and location of a soundwall that may occur along the Lincoln Bypass. Since the circulation of this draft document, many homes on the South end of the project have been constructed or are in various stages of being built. The photograph depicted in Figure 4-9 has changed and now contains several houses.

From this key view, the height of the soundwall will obliterate most views of existing oaks in the background. However, oak tree replacement may occur adjacent to freeway soundwalls. This simulation shows mature oak trees. However, one must also remember that in the future, this area will be completely developed to the soundwall.

The **A5C1 and AAC2** alignments begin approximately one-half mile north of Nicolaus Road with a wide gradual northwest curve. Both alignments follow the same route for approximately two miles before breaking apart south of Coon Creek, passing through vernal pools for approximately 4.8 km (3 mi) between Nicolaus and Dowd Roads.

Alignment **AAC2** connects into the AA alignment north of the Nicolaus Road interchange and Markham Ravine, near the power lines on the Foskett property, following the same route as A5C1 until the Nader Ranch. After the Nader Ranch, AAC2 curves northward in a wide, gradual curve and crosses Coon Creek approximately 243 m (800 ft) upstream from the A5C1 alignment. By going between oak clusters, this alignment promotes more of the feeling of crossing from one area and entering another area.

Existing Key View from the Joiner Ranch Project Area (looking west) - Original

Figure 4-6
Visual Simulation

After crossing Coon Creek, **A5C1** curves widely through agricultural lands, with an overcrossing at Dowd Road. Rural ranches and meandering creek corridors are visible to the east while traveling through the relatively flat terrain. Two bridges are needed for Yankee slough and Dalby Road will be realigned. A5C1 gradually rises into the unique mile-wide foothill that was described in Chapter 3. An interchange is planned for Riosa Road.

The D corridor

The **D1 and D13** alignments, including the D13 North Modified, veer west of the Lincoln Municipal Airport. Both D1 and D13 present negative views for residents of the rural subdivision on Rockwell Lane. These residents now have panoramic rural views of Markham Ravine and agricultural areas to the south. Once the bypass is built, head and taillights will be the most dominant visual intrusion to the south.

After curving to the northwest, crossing Ingram Slough and cutting through the corner of Aitken Farms, the **D13** alignment breaks up the small rural cluster of home sites at the bend in Moore Road. After crossing Auburn Ravine, it then curves gradually to the west. This section of the proposed alignment provides exceptional views of sunrises and sunsets.

The Nelson Road interchange provides changes in topography while also allowing oak restoration areas. D13 parallels the rural Rockwell Lane subdivision. The closest structures within this rural subdivision are a minimum of 457 m (1500 ft) away from the D13 alignment. Even though this rural subdivision diminishes the integrity of the natural visual setting, it provides a middle ground focal point. This 457 m (1500 ft) distance retains the visual quality of this rural subdivision, both from the residents' viewpoint and for users of the Lincoln Bypass.

Alignment D13 then widely curves to the north, crossing Markham Ravine. The bridge should be simple; complimenting existing landscapes through color, size, form, texture and an aesthetically pleasing architectural design as previously discussed. In addition, a small triangular portion of land adjacent to the creek crossing could be used for oak tree replacement. Additional plantings along the creek corridor could provide areas for oak replacement while also augmenting receding oak populations. This wide curving alignment straightens out near Nicolaus Road where a future overcrossing is planned. D13 then continues northward through agricultural areas until it combines with the D1 alignment.

The major difference between the D alignments is that D1 is slightly farther northward, disrupting the rural Rockwell Lane subdivision. Two home sites would be demolished and other homes may be as close as 30.5 to 76 m (100 to 250 ft) away from the proposed alignment.

The pooling, tributary area of Markham Ravine on the south side of the proposed D1 alignment allows attractive views for Lincoln Bypass travelers during the wet months. In addition, this alignment cuts through the southern tip of a long eucalyptus windbreak, adding an immediate vertical visual element directly adjacent to the right-of-way.

D1 has the same overall visual qualities of D13 except for the area near Auburn Ravine. The rural neighborhood at the bend in Moore Road is now entirely on the north side of the proposed route. Visually and socially, it is wise to not break up this neighborhood. By leaving the enclave of homes intact, the foreground views of rustic home sites tucked inside oak woodland provide visual integrity and promote the rural quality of this region. Once development occurs, the rural home sites may disappear, leaving mixed-use development. D1 joins with D13 just past Nicolaus Road.

All of the longer alignments **(A5C1, AAC2, D1 and D13**) generally cross the same area from Wise Road on to where they join with existing SR 65. These alignments either cross over or weave through small hills north of Coon Creek. These low-lying foothills exaggerate the feeling of traveling and passing through an area due to their vertical relief upon otherwise horizontal fields. The alignments cross extensive vernal pools, agriculture and non-native grasslands for over 2.4 km (1.5 mi) before arriving at the unique, mile-wide rolling foothill between Dalby and Riosa Rds.

Even though these alignments tie into existing SR 65 at different locations before reaching the Bear River, they are within 457 m (1,500 ft) of each other. The D1 and D13 alignments go through existing fruit and nut orchards whereas A5C1 and AAC2 do not. Disturbing the existing orchards and their geometric plant spacing will cause the visual quality and character to be altered. However, orchards normally create interesting, geometric views from the roadway.

4.11.1 Avoidance and Minimization Measures to Reduce Visual Impacts

These measures encompass the enhancement of positive effects as well as the reduction or elimination of negative effects. The goal is to restore the indigenous appearance to areas affected by construction and to form the highway so it blends into adjacent terrain. In achieving this goal, the highway should appear to be a part of the natural landscape. The most effective measure is to minimize and avoid project impacts by designing the project with as little disturbance to the land as possible.

Oak Resolutions and Regulations

The California Senate passed a resolution effective September 1, 1990 protecting heritage oak stands. State agencies shall “assess and determine the effects of their land use decisions or actions within any oak woodlands.” State agencies should "preserve and protect native oak woodlands to the maximum extent feasible... or provide for

replacement plantings" according to SCR17. There are eight stands of oaks meeting the criteria as heritage trees within the Study Area. In addition, Placer County adopted a tree preservation ordinance in October of 1991. This ordinance was established to preserve and protect the remaining native oak and other species of trees within Placer County. Within the project area, landmark trees and trees within a riparian zone provide the majority of trees affected by this ordinance.

Oak Removal

Tree removal will be kept to a minimum. Because of the loss in change of spatial enclosure and the number of heritage oak stands, it is particularly important to leave existing trees as close to the highway as safety will allow. Prior to clearing operations, trees needing to be removed will be individually marked for cutting and all other trees will be protected from damage. Identification of a preferred alignment is not an easy task due to many constraints, some of which include oak preservation, wetland habitats, potential endangered species and scenic quality considerations. All proposed alignments remove portions of existing mature oak woodlands. The total dbh varies between the alignments but D1 has the least oaks being removed and AAC2 has the most oaks being removed. Below approximates total oak removal for each alignment:

D1 alignment	17.8 m (700 in) of oaks to be removed
D13 alignment	43.2 m (1,700 in) of oaks to be removed
A5C1 alignment	68.6 m (2,700 in) of oaks to be removed
AAC2 alignment	85.1 m (3,350 in) of oaks to be removed

Oak Replacement

Replacement of oak woodland habitat will be necessary under SCR 17 for the Lincoln Bypass. It is best to locate replacement trees in areas where existing oaks have been removed. Creek corridors also provide an exceptional location to augment existing oak woodlands with additional replacement oaks. In addition, wider rights-of-way allow naturalistic arrangement of replacement oaks while also enhancing visual quality and character. Caltrans Landscape Architects will provide re-vegetation plans, which will further enhance the Lincoln Bypass. More information on oak woodland replacement can be found in Section 4.8.8.

Vegetation Preservation

The natural vegetative layers of tree canopy, understory vegetation of small trees and shrubs, groundcovers, native grasses and natural mulches will be re-established.

4.11.2 Erosion Control

Potential damage from erosion and runoff can be severe. Sedimentation barriers such as simple hay bales or soil filter fabrics attached to fences (silt fences) can help prevent erosion. To establish effective re-vegetation on slopes, topsoil will be collected from the project site before construction, stockpiled, and later applied to the completed slopes. Erosion control plans can be custom-tailored to specific sites by a landscape architect. Erosion control is discussed in depth in the Water Quality Section of this chapter.

If re-vegetation is not accomplished, roadside scars will become prominent on cut and fill slopes. The magnitude of these visual impacts depends upon how the slopes are treated. All slope treatments will blend with existing features, simulating natural forms. This consists of rounding the top and edges of the cuts and fills to present a softer transition line between constructed and existing slopes. Particularly where a significant tree or group of trees can be saved, slopes could be cut steeper to preserve them. In addition, slopes will be designed to be flat enough to readily re-vegetate them. A 4:1 slope is recommended. This means that for every four feet of horizontal length the slope will rise vertically one foot.

Contour grading may increase the overall size and length of graded areas, requiring adequate right-of-way to be wider than the 70 m (230 ft) as proposed. The unique, mile-wide foothill near Dalby and Riosa Roads is a prime example where contour-grading principles will be employed along with establishing wider right-of-way, smoothing the natural to standard transition edge along the roadway.

Bridges and Other Structures

Special attention will be given to structures since they have a strong impact on the visual quality of a highway. All structures will be aesthetically pleasing when viewed from the road and other viewpoints. Landforms will blend into bridge abutments to maintain visual continuity for the motorist. Structures will complement the natural landscape in color and not dominate existing landforms.

Soundwalls

Soundwalls are an important element in highway design where homes and other noise-sensitive properties are close to the right-of-way. The compatibility between highways and residential areas is substantially improved by the provision of attractively designed soundwalls. Planting is effective in complementing and softening the appearance of soundwalls. Visual impacts must be considered once final locations of soundwalls are determined.

5 RELATIONSHIP BETWEEN LOCAL SHORT TERM USES OF MAN'S ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG TERM PRODUCTIVITY

This project is consistent with the Placer County Transportation Planning Agency Regional Transportation Plan, which outlines the ultimate transportation plan for the region, including local road and highway improvements. This Plan was developed to accommodate current and proposed land uses and the associated projected travel. Construction of the project will result in long-term environmental impacts such as:

- Removing agricultural land from production.
- Destroying vernal pools and the associated flora and fauna.
- Destroying many large, heritage oak trees.

Conversely, the project would support uses of the land consistent with highway uses such as residential, commercial and industrial land use, bringing economic expansion to the area. The long-term productivity of the City of Lincoln would be:

- Decreased congestion within the downtown core.
- Improving the quality of life for both the city residents and the commuters once faced with delays during peak hours within the city limits.
- In addition, efficient inter-regional movement of goods, services and people would be enhanced by the addition of a bypass around the City of Lincoln.
- Mitigation for the Bypass would contribute to the preservation of some agricultural lands and wetland habitat. Preservation of oaks will occur at a 2:1 ratio. Saplings will be planted to replace the oak trees.

6 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES WHICH WOULD BE INVOLVED IN THE PROPOSED ACTION

Implementation of the proposed action involves a commitment of a range of natural, physical, human and fiscal resources. Land used in the construction of the proposed facility is considered an irreversible commitment during the time period that the land is being used for a highway facility. However, if a greater need arises for use of the land or if the highway facility is no longer needed, the land can be converted to another use. At present there is no reason to believe such a conversion will ever be necessary or desirable.

Considerable use of fossil fuels, labor and highway construction materials such as cement, aggregate and bituminous material would be expended. Additionally, large amounts of labor and natural resources would be used in the fabrication and preparation of construction materials. These materials are generally not retrievable. However, they are not in short supply and their use will not have an adverse effect upon the continued availability of these resources. Any construction will also require a substantial one-time expenditure of both State and Federal funds which are not retrievable.

In addition, for much of the project area, highway use will supplant agricultural use, possibly changing the land use in that area forever by providing a means to develop residential housing. Some the land converted to highway use is prime farmland, which cannot easily be changed back into farmland once the road is built. This conversion is already happening via the approval of development permits by the City of Lincoln.

Vernal pools will also be irretrievably lost to the highway project. Vernal pools are tens of thousands years in the making, and require specific geologic and topographic conditions in order to occur. Success in reproducing and replacing vernal pools has been uncertain. Together with the loss of the vernal pools will be the plants and animals that inhabit vernal pools, such as the vernal pool fairy shrimp. Due to the incremental loss of their habitat throughout the Sacramento Valley region, their continued existence is uncertain.

The commitment of these resources is based upon the concept that residents in the immediate area, State and region will benefit by the improved quality of the transportation system. These benefits will consist of improved accessibility and safety, savings in time and greater availability of quality services, which are anticipated to outweigh the commitment of these resources.

7 COMMENTS AND COORDINATION

Caltrans has conducted a substantial amount of public outreach on this project over the decade that it has been in development. This chapter will discuss coordination with the public and federal, state and local agencies, including the NEPA/404 coordination.

7.1 Cooperating Agencies

A cooperating agency is any agency, other than the lead agency, that has jurisdiction by law or special expertise with respect to the environmental impacts expected to result from a proposal. The following agencies have agreed to be cooperating agencies under NEPA. Letters from the USACE and FWS are located in Appendix A.

- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service

7.2 Notice of Preparation and Notice of Intent

A Notice of Intent was published in the Federal Register on June 28, 1990 and a Notice of Preparation was distributed by the Office of Planning and Research (OPR) on June 27, 1990. Copies of these notices are located in Appendix B. The following state agencies received a copy of this Notice either through the OPR or through Caltrans. Copies of the letters can be found in Appendix C. Table 7-1 lists the responses to the NOI and NOP and summarizes the agencies concerns.

California Air Resources Board

California Dept. of Conservation

California Dept. of Fish and Game

California Dept. of General Services

California Dept. of Health

California Dept. of Housing and Community Development

California Dept. of Parks & Recreation, Office of Historic Preservation

California State Lands Commission

California Water Resources Control Board

Central Valley Region Water Quality Control Board

Native American Heritage Commission

Regional Air Pollution Control District/Air Quality Management District

The following agencies responded to these Notices and requests for information:

Table 7-1 Agencies Responding to Notice of Intent and Notice of Preparation

Agency	Date	Issues/Concerns
Federal Government		
U.S. Dept. of Interior, Bureau of Mines	June 12,1990 August 2,1990	Provided a print out locating minerals and mineral claims.
U.S. Dept. of Interior, Bureau of Indian Affairs	July 24,1990	No Indian Lands under the jurisdiction of this agency are involved.
State Government		
California Dept. of Fish and Game	May 26, 1989	Suggested some issues they will be looking for in the NES.
California Dept. of Fish and Game	May 11, 1990	Issues: Riparian habitat, Swainsons' hawk, vernal pools, valley elderberry longhorn beetle, giant garter snake, chinook salmon. They discussed requirements for mitigation.
California Dept. of Fish and Game	July 23, 1990	Referencing the May 11, 1990 letter for concerns.
California Dept. of Boating and Waterways	July 6, 1990	No comments.
Sacramento Area Council of Governments	July 10, 1990	No concerns of an environmental nature. The Lincoln Bypass is included in the 1990 Regional Transportation Improvement Program, and also conforms with the 1982 Regional Air Quality Plan.
California Regional Water Quality Control Board, Central Valley Region	July 12, 1990	The DEIR should; address the implementation of an enforceable erosion control plan, incorporate appropriate grading plan measures, and designate responsible parties for any phase of this project.
Dept. of Parks and Recreation, Office of Historic Preservation	January 30, 1995	Finding of Effect. Agreed that this project would not effect the historic properties in the vicinity.
County & Local Governments		
Placer County Dept. of Public Works	July 25, 1990	Impacts to county roads should be addressed. There is a concern about encroachment into agricultural lands by the freeway, and the conversion of agricultural lands due to growth pressures from the presence of the new road.

7.3 Coordination with Agencies

Coordination with the resource agencies is ongoing. The resources agencies have been invited to Project Development Team (PDT) meetings, provided copies of minutes

of those meetings and have been kept up to date on the current status of this project. As personnel changed within the different Resource Agencies, additional material has been sent to the new contact person. Table 7-2 lists the coordination that has taken place with other State, Federal and local agencies. Copies of the letters can be found in Appendix D.

Table 7-2 Coordination with Agencies

U.S. Fish and Wildlife Service	
Letter to James McKevitt requesting guidance on USFWS concerns.	April 12, 1990
Letter from Wayne White responding to April 12, 1990 letter.	June 29, 1990
Letter from David Harlow responding to request of July 21, 1998 for information.	August 13, 1998
Letter from Karen Miller responding to March 12, 2000 telephone request for comments on survey protocol.	April 27, 2000
Letter from Karen Miller responding to August 28, 2000 request for information on endangered and threatened species	September 11, 2000
U.S. Dept. of Commerce, National Marine Fisheries Service	
Letter to John Baker, Fisheries Biologist requesting concurrence that the project is not likely to adversely affect CV Steelhead or adversely modify it's Critical Habitat	May 10, 2004
Letter from Rodney R. McInnis concurring on "not likely to adversely affect" determination.	May 19, 2004
U.S. Army Corps of Engineers:	
Letter from Tom Coe, Chief, Regulatory Unit 1, regarding wetlands manual.	August 30, 1991
Letter to Tom Coe, responding to letter of August 30, 1991	September 27, 1991
Letter from Tom Coe regarding wetlands verification	September, 1991
U.S. Dept. of Agriculture, Natural Resources Conservation Service:	
Letter from Clifford Heitz, District Conservationist.	June 22, 1999
Farmland Conversion Impact Rating Forms.	May 13, 2001
California Dept. of Fish and Game:	
Letter from James Messersmith, Regional Manager responding to request for information.	May 26, 1989

Letter to Jerry Mench requesting CDFG concerns.	April 12, 1990
Letter from James Messersmith responding to request.	May 11, 1990
California Dept. of Parks & Recreation, State Historic Preservation Office	
Letter from Kathryn Gualtieri, State Historic Preservation Officer, concurring that Fickewirth Ranch and Sheridan Cash Store are eligible for National Register.	October 22, 1991
Letter from Cherilyn Widell, State Historic Preservation Officer, concurring that Fickewirth Ranch and Sheridan Cash Store are eligible for National Register and with the phasing of investigation for the archaeological sites.	August 8, 1994
Letter from Cherilyn Widell, State Historic Preservation Officer, responding to Section 106 request.	January 30, 1995
Letter from Dr. Knox Mellon, State Historic Preservation Officer, responding to Section 106 request. Concurs with findings.	November 19, 2002
Letter to Mr. Milford Wayne Donaldson, State Historic Preservation Officer, requesting concurrence on Finding of No Adverse Effect and informing him of the use of the de minimus standard. Concurs with findings on 2/16/06.	February 2, 2006
Placer County:	
Letter to Board of Supervisors and City Council advising them of this project.	July 24, 1989
Letter to Property Owners advising of this project.	July 24, 1989

7.4 Public Outreach

Additional correspondence from the residents of Lincoln and surrounding areas can be found in the "Public Outreach" notebook located in the Caltrans District 3 office in Sacramento. A summary of the public hearings, open houses and informational meetings that have been held for this project are listed in Table 7.3. Three newsletters were sent out to the residents of Lincoln on April 12, 1990, March 1991 and March 1993. Listed in the table below are the public meetings that were held for the project.

Table 7-3 Public Meetings

When	Where	What
November 24, 1987	Caltrans District Office, Marysville	Informational meeting with the City, Caltrans, property owners, developers
November 16,1989	Lincoln City Hall	Lincoln City Council Meeting

May 1, 1990	McBean Park Pavilion, Lincoln	Public Drop in Workshop
April 18, 1991	McBean Park Pavilion, Lincoln	Public Drop in Workshop
September 22, 1999	McBean Park Pavilion, Lincoln	Public Drop in Workshop
January 12, 2000.	Sheridan	Sheridan Municipal Council Meeting
December 12, 2000	McBean Park Pavilion, Lincoln	Public Open House

The format for the public drop-in workshops was informal. Exhibits were set up around the room, with Caltrans representatives available to answer questions. Comment Cards were available, as well as a place to sit down and fill them out. Cookies and coffee were provided by the Lincoln Lions Club. The Comment Cards are included in the Public Outreach Notebook and available for review at the Caltrans District 3 Sacramento office. Approximately 80 citizens attended the first meeting, and 18 commented. In general, the comments were favorable towards the project, although one comment was negative. The second workshop had 90 participants, and 19 provided comments. The comments were all in agreement with the project, and favored the D corridor.

The most recent open house for this project was held on September 22, 1999. There were over 400 people in attendance and 226 Comment Cards were received at the open house. Ten additional comments came in the mail after the open house. A petition was submitted to Caltrans, signed by 314 people in opposition of the shorter A alignment due to the impacts on residents in that area and the feeling that it would divide the city.

Comments at that public workshop were overwhelmingly in favor of the D corridor, and evenly split between D1 and D13. Many of the people in favor of the D1 alignment were located in the Brookview Terrace subdivision, which would be more affected by the D13 alignment. Approximately 40 people suggested a blending of the D1 and D13, by taking D1 up to Nelson, then going with D 13.

Nine people were in favor of the A alignments and 21 were in opposition to the A alignments. A total of nine people were in opposition to the D alignments. Nine people did not feel a bypass was necessary and were in opposition to the whole project, one comment suggested rapid transit. Other concerns expressed in the Comment Cards were the impacts of noise and lights on this quiet community.

The following letters of comment were received from members of the public:

Elisabeth H. Fullerton, dated December 5, 1987

Edwin and Carol Scheiber, dated January 25, 1988

Elisabeth H. Fullerton, dated January 11, 1989

Mr. and Mrs. Edwin A. Noyes, Jr., dated January 21, 1989

Edwin and Carol Scheiber, dated July 19, 1990

Randy Collins, The Sammis Company, dated May 22, 1991

A public open house was held on December 18, 2001, during the circulation of the draft environmental document. Approximately 300 people signed in and 176 submitted comments. The comments ranged in nature from supportive of the project to concern over the loss of farmland and the rural feel of the area. The resource agencies concerns were focused on loss of habitat for vernal pools and their denizens, the Swainson's hawk and growth inducement. Copies of the comments and responses to comments can be found in Appendix K.

7.5 NEPA/404 coordination

In 1994, USACE, EPA, FHWA, FWS, NMFS and Caltrans signed a formal Memorandum of Understanding (MOU) that integrates the NEPA process and Clean Water Act Section 404 procedures, as well as improves coordination among stakeholder agencies. The NEPA/404 Integration process was designed to implement Section 404 more effectively in its efforts to preserve wetlands and the species of plants and animals that depend on this type of habitat.

Under the guidelines of the NEPA/404 Integration process, signatory agencies are to agree to the project's "Purpose and Need" Statement, the criteria for selecting the project alternatives and the Least Environmentally Damaging Practicable Alternative (LEDPA). The guidelines also specify that signatory agencies are to agree to the alternatives that are to be studied, early in the environmental review process. Letters documenting agreement from the agencies on the Purpose and Need, the range of alternatives and the criteria for selecting the alternative can be found in Appendix E and are listed in Table 7-4 below.

A LEDPA was chosen and concurrence was received from EPA and USACE on July 9 and August 8, 2003 (see Table 7-4). The USACE published a Public Notice informing the public of Section 404 involvement in June 2005 and comments from that notice are being evaluated.

While the Final Environmental Impact Statement/Report was being prepared, a preferred alternative in compliance with the section 404(b)(1) guidelines was agreed upon. This alternative was the D13 North Modified alternative. Mitigation has been proposed and agreed upon, and a non-jeopardy opinion was given by the FWS on February 2, 2005. Table 7-4 details the NEPA/404 coordination to date.

Table 7-4 NEPA/404 and Section 7 Coordination

When	Who to Whom	What
April 24, 1994	FHWA/Caltrans to USACE, EPA, FWS,	Letter requesting concurrence on the purpose and need, criteria for selection of alternatives, and description of alternatives to be evaluated in the DEIR/S.
May 5, 1994	FHWA/Caltrans, EPA, USACE, FWS	Meeting to discuss project.
May 12, 1994	FHWA/Caltrans to USACE, EPA, FWS	Letter requesting concurrence on the purpose and need, criteria for selection of alternatives, and description of alternatives to be evaluated in the DEIR/S.
June 17, 1994	FWS to FHWA/Caltrans	FWS needs more information. Purpose & need not clearly identified, would like to see another alternative that doesn't affect wetlands, need a complete list of criteria and alternatives that were discarded at previous planning stages.
June 28,1994	EPA to FHWA/Caltrans	Concurrence that the range of alternatives meets the requirements for Section 404 and the criteria for the selection of alternatives to be evaluated is adequate. However, they did not agree that the purpose and need was adequate, and that the LEDPA was accurate.
June 30, 1994	FHWA/Caltrans, FWS	Meeting to discuss issues raised in FWS comment letter.
February 18, 1997	FHWA/Caltrans to USACE EPA FWS	Preliminary information for a meeting to obtain concurrence.
February 27, 1997	FHWA/Caltrans, USACE FWS	Meeting to discuss project.
March 6, 1997	FHWA/Caltrans, USACE, EPA, FWS	Pre-application Interagency Meeting
March 17, 1997	FHWA/Caltrans to USACE, EPA, FWS	Requesting concurrence again.
March 21, 1997	FWS, to FHWA/Caltrans	Concurrence on projects purpose and need, range of alternatives and criteria for selection of alternatives.
April 7, 1997	USACE, to FHWA/Caltrans	Concurrence on purpose & need, range of alternatives, design parameters.
May 6, 1997	EPA, to FHWA/Caltrans	Concurrence on purpose & need, range of alternatives, design parameters.

When	Who to Whom	What
February 7, 2000	FHWA/Caltrans, USACE, EPA, FWS,	Meeting to re-acquaint the agencies with the project, review the Natural Environment Study and update the agencies on the project.
November 15-January 15, 2001	Caltrans	Circulation of Draft Environmental Impact Report/Statement
December 2001	Caltrans	FHWA/Caltrans identifies D13 North as the preferred alternative
April 20, 2001	FHWA/Caltrans, USACE, EPA, FWS,	Meeting to present the Habitat Mitigation and Monitoring Proposal.
August 29, 2002	FHWA/Caltrans and EPA	Caltrans and EPA have an initial meeting on the LEDPA. Caltrans agrees to prepare a revised Alternatives Analysis prior to requesting concurrence on LEDPA
September 24, 2002	FHWA/Caltrans and EPA	Caltrans submitted a revised alternatives analysis to EPA.
September 30, 2002	FHWA/Caltrans and EPA	Caltrans/FHWA submits request for concurrence that includes additional information regarding impacts, development patterns and habitat fragmentation.
October 7,2002	FHWA/Caltrans and EPA	EPA receives from Caltrans the revised Alternatives Analysis (dated Sept 24, 2002), a request for LEDPA concurrence on D13N (dated Sept 30, 2002), and information on the General Plan for the City of Lincoln. The deadline for LEDPA concurrence is set for NOV 18th
October 31, 2002	FHWA/Caltrans and EPA	A meeting ensued with EPA, City of Lincoln, Placer County and Caltrans to discuss growth in the region. From the information that was presented, EPA requested further information pertaining to development, Williamson Act contracts, development potential and growth pressure in relation to interchanges and intersections.
November 6, 2002	FHWA/Caltrans and EPA	Email received from EPA requesting information on the practicability of the A alternatives.
December 5, 2002	FHWA/Caltrans and EPA	Caltrans/FHWA submits a second request for concurrence and includes supplemental information to support LEDPA. The supplemental information includes impacts to key resources, community impacts of the AC alternatives, discussion on the growth in Lincoln and surrounding areas and Placer Legacy activities. Updated maps from Placer County and the City of Lincoln were also submitted in package.

When	Who to Whom	What
December 20, 2002	FHWA/Caltrans and EPA	Caltrans submits email to EPA answering additional questions regarding LEDPA regarding residential housing impacts. Analysis had included impacts to houses that were in various planning or construction stages and EPA requested verification of actual built housing versus not built.
January 13, 2003	FHWA/Caltrans and EPA	Meeting with EPA, USACE, City of Lincoln, Congressman Doolittle's office and Caltrans to discuss LEDPA. EPA requests further information on cumulative and indirect analysis and how they relate to natural resources on the D alignment, why the AC alternatives were not practicable, cost estimates for right-of-way, clarification on necessity of interchanges at Wise Road and Nelson and information on impacts on homes along the AC alignment. Caltrans agrees to develop a work plan that will be presented to EPA and USACE to ensure that concerns are addressed regarding LEDPA concurrence.
January 16, 2003	FHWA/Caltrans and EPA	Letter from EPA agreeing to postponement of the January 24, 2003 deadline for EPA concurrence on LEDPA and requesting further information on "A" alternatives and a work plan.
January 27, 2003	FHWA/Caltrans and EPA	Caltrans provides EPA information on direct and indirect impacts for the A alignments and Foskett Ranch.
February 4, 2003	FHWA/Caltrans and EPA	FHWA/Caltrans provides EPA information on the D13 alignment and the proposed interchanges. Caltrans submits showing the criteria used to determine the practicability of the AC alignments.
February 13, 2003	FHWA/Caltrans and EPA	EPA sends reference materials and suggestions on how to address cumulative and secondary impacts of transportation projects
February 25, 2003	FHWA/Caltrans and EPA	EPA sends letter with concerns over constraints within the A corridor.
March 20, 2003	FHWA/Caltrans and EPA	FHWA/Caltrans submits work plan for discussion.
March 21, 2003	FHWA/Caltrans and EPA	Meeting with EPA, Caltrans, FHWA, City of Lincoln, Placer County Transportation Planning Agency and USACE to discuss work plan, LEDPA process, design variation and communication protocol.
March 26, 2003	FHWA/Caltrans and EPA	EPA submits feedback on Caltrans work plan.

When	Who to Whom	What
March 27, 2003	FHWA/Caltrans and EPA	Weekly teleconference meetings between Caltrans, USACE and EPA begin. EPA submits final changes to work plan.
May 5, 2003	FHWA/Caltrans and EPA	Caltrans submits work plan to EPA.
May 9, 2003	FHWA/Caltrans and EPA	Teleconference meeting with EPA regarding analysis. EPA discusses concern over the lack of conclusion regarding indirect and cumulative impacts, the design variation in relation to the initial phase versus the final facility and the design changes regarding the overcrossing. Caltrans clarifies design changes.
May 15, 2003	FHWA/Caltrans and EPA	Teleconference meeting with EPA, FHWA and Caltrans to discuss analysis.
July 9, 2003	FHWA/Caltrans and EPA	Letter from EPA concurring with D 13 North as the LEDPA
August 8, 2003	FHWA/Caltrans and USACE	Letter from USACE concurring with D13 North as the LEDPA
February 15, 2004	FHWA/Caltrans and FWS, NMFS	Submitted BA to NMFS and FWS
March 17, 2004	FHWA/Caltrans and FWS, NMFS	Received informal comments from FWS.
April 28, 2004	FHWA/Caltrans, FWS, DFG and USACE	Field meeting at Aitken Ranch to discuss mitigation site
April 30, 2004	FHWA/Caltrans, FHWA and FWS	Caltrans responds in letter to FWS comments
May 4, 2004	FHWA/Caltrans, FHWA and FWS	Meeting to discuss project and submit additional information
May 10, 2004	FHWA/Caltrans and FWS	Submittal of revised BA and request for formal Section 7 consultation
May 10, 2004	FHWA/Caltrans and NMFS	Submittal of revised BA and request for formal consultation
May 19, 2004	FHWA/Caltrans and NMFS	Received concurrence on "Not Likely to Adversely Affect" determination ending formal consultation
May 24, 2004	FWS and FHWA/Caltrans	Received letter requesting additional project information
June 22, 2004	FHWA/Caltrans, FWS and DFG	Field meeting in Lincoln to discuss project and it's impacts
July 20, 2004	FHWA/Caltrans, City of Lincoln and FWS	Meeting to discuss revised impacts and mitigation requirements

When	Who to Whom	What
September 7, 2004	FHWA/Caltrans and FWS	FHWA submits letter containing additional project information and a second request for formal consultation
September 16, 2004	FHWA, Caltrans, LSA and FWS	Meeting to discuss project indirect and direct impacts and recommendations were given to offset these impacts
November 1, 2004	FHWA, Caltrans, USACE, EPA, City and County	Meeting at Congressman's office to discuss project impacts and compensation measures
November 5, 2004	FHWA, Caltrans, USACE, EPA, City and County	Meeting to discuss additional compensation and conservation measures
November 19, 2004	FHWA/Caltrans, FWS, EPA and USACE	Caltrans submits Draft Mitigation and Monitoring Plan (MMP) for project to obtain concurrence from agencies
December 17, 2004	FHWA/Caltrans Caltrans and EPA	Received letter of concurrence on the Conceptual Mitigation Plan that includes recommendations for Final plan
December 27, 2004	FHWA/Caltrans and USACE	Received letter providing concurrence on draft Mitigation and Monitoring Plan and provides additional recommendations for Final plan
January 7, 2005	FWS, FHWA and Caltrans	A draft BO was submitted to FHWA that outlined mitigation and conservation requirements
February 2, 2005	FWS, FHWA and Caltrans	A Final BO was submitted to FHWA and Caltrans that outlines final mitigation and conservation requirements
December 21, 2005	FWS, FHWA and Caltrans	Caltrans requests to amend the BO
March 21, 2006	FWS, FHWA and Caltrans	FWS submits an amended BO.

8 LIST OF AGENCIES, ORGANIZATIONS AND PERSONS TO WHOM COPIES OF FINAL EIR/S WERE SENT

ELECTED OFFICIALS

U.S. CONGRESSMAN
Honorable John Doolittle
1228 Longworth House Office Building
Washington, D.C. 20515

U.S. SENATORS
Honorable Dianne Feinstein
Hart Senate Office BLDG., Suite 331
Constitution Ave. & 2nd Street, NE
Washington, D.C. 20515

Honorable Barbara Boxer
Hart Senate Office BLDG., Suite 112
Constitution Ave. & 2nd Street, NE
Washington, D.C. 20515

STATE ASSEMBLYMAN
Honorable David Knowles
The State Assembly
State Capitol
Sacramento, CA 95814

STATE SENATOR
Honorable Tim Leslie
The State Senate
State Capitol
Sacramento, CA 95814

FEDERAL AGENCIES

Ms. Duane James, Chief
U.S. Environmental Protection Agency Region IX
Attn: Nancy Levin
75 Hawthorne St.
San Francisco, CA 94105-3901

Mr. Tom Cavanaugh, Acting Chief
U.S. Army Corps of Engineers Sacramento District, Regulatory Section
Attn: Tom Cavanaugh
1325 J St.
Sacramento, CA 95814-6340

Wayne S. White, Field Supervisor
U.S. Fish and Wildlife Service, Ecological Services
Attn: Jerry Bielfeldt,
Sacramento Field Office
2800 Cottage Way, W-2605
Sacramento, CA 95825

Mike Acituno, Supervisor
U.S. National Marine Fisheries Service
Attn: Kelly Finn
650 Capital Mall, Suite 6066A
Sacramento, CA 95814

STATE AGENCIES

State Clearinghouse
Office of Planning and Research
1400 10th Street, Room 121
Sacramento, CA 95814

California Dept. of Fish and Game, Region 2
Sandy Moley, Regional Manager
Attn: Jeff Finn
1701 Nimbus Rd. Suite A
Rancho Cordova, CA 95670

Executive Officer, **State Water Resources Control Board**
901 P Street
Sacramento, CA 95814

State Historic Preservation Officer
Office of Historic Preservation
Dept. of Parks and Recreation
P.O. Box 942896
Sacramento, CA 94296-0001

Executive Officer, **State Air Resources Board**
1102 Q Street
Sacramento, CA 95814

LOCAL AND COUNTY GOVERNMENT AGENCIES

City of Lincoln City Council
640 5th Street
Lincoln, CA 95648

City of Lincoln Planning Commission
1530 3rd Street, Suite 211
Lincoln, CA 95648

Placer County Board of Supervisors
175 Fulweiler Avenue
Auburn, CA 95603

Placer County Planning Director
11414 B Avenue
Auburn, CA 95603

Placer County Director of Public Works
11444 B Avenue
Auburn, CA 95603
Director of Public Works

Sheridan Municipal Advisory Committee
Attention Ms. Nancy Evans
P.O. Box 356
Sheridan, CA 95681

South Sutter Water District
Mr. Robert L. Melton, General Manager/Secretary,
2464 Pacific Avenue
Trowbridge, CA 95659

CIVIC AND MISCELLANEOUS ORGANIZATIONS

Executive Director
Sacramento Area Council of Governments
3000 S Street, Suite 300
Sacramento, CA 95816

Mr. Celia McAdam, Executive Director
Placer County Local Transportation Planning Agency
835 Lincoln Way, Suite 109
Auburn, CA 95604

Lincoln Area Chamber of Commerce
1530 3rd Street
Lincoln, CA 95648

INDIVIDUALS

Carol Scheiber
Moore Road
Lincoln, CA

FINAL EIS WAS MADE AVAILABLE AT:

City of Lincoln City Hall
1390 First St.
Lincoln, CA 95648

Lincoln Public Library
590 Fifth St.
Lincoln, CA 95648-1854

Caltrans District 3, Sacramento
2389 Gateway OaksDr.
Sacramento, CA 95833

Caltrans District Office, Marysville
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Marysville, CA 95901

9 LIST OF PREPARERS

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Karen McWilliams, Senior Environmental Planner. B.A. Environmental Studies, California State University, Sacramento. 12 years experience in Environmental Documents. Environmental Coordinator and Principal Writer

John Ballentyne, Right of Way Agent. BS Management, California State University, Chico. 12 years experience in real estate, 2 years as a Right of Way Agent. Draft Relocation Impact Study

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ACRONYMS

AADT	Average Annual Daily Traffic
AASHTO	American Association of State Highway and Transportation Officials
ACC/MVM	Accidents per million vehicle miles
ACHP	Advisory Council on Historic Preservation
ADT	Average Daily Traffic
APCD	Air Pollution Control District
APE	Area of Potential Effect
AQMD	Air Quality Management District
ASR	Archaeological Survey Report
BCAG	Butte County Association of Governments
BFE	Base Flood Elevations
BMP	Best Management Practices
CAA	Federal Clean Air Act
Cal EPA	California Environmental Protection Agency
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CCAA	California Clean Air Act
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CHP	California Highway Patrol
CMA	Congestion Management Agency
CMP	Congestion Management Plan
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Survey
CO	Carbon Monoxide
CSHC	California Streets and Highways Code
CTC	California Transportation Commission
CWA	Clean Water Act
dB	Decibel
dBA	A-weighted decibel
dBA Leq A-	weighted decibel equivalent sound level
DBH	Diameter at Breast Height measurement for trees.
DEIS	Draft Environmental Impact Statement
DHS	State of California Department of Health Services

DTSC	California Department of Toxic Substance Control
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
ESU	Evolutionary Significant Unit
FAA	Federal Aviation Administration
FCWA	Federal Clean Water Act
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
ft	Foot or feet
FTA	Federal Transit Administration
FWPCA	Federal Water Pollution Control Act
ha	Hectare or hectares
HAER	Historic American Engineering Record
HASR	Historic Architecture Survey Report
HOV	High Occupancy Vehicle
HPSR	Historic Properties Survey Report
HUD	Department of Housing and Urban Development
HWIS	Hazardous Waste Information System
ISA	Initial Site Assessment
km	Kilometer or kilometers
LEDPA	Least Environmentally Damaging Alternative
Leq	Equivalent Sound Level
LRT	Light Rail Transit
LTMS	Long-Term Management Strategy
LUST	Leaking Underground Storage Tank
m	Meter or meters
MCE	Maximum Credible Earthquake
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MPO	Metropolitan Planning Organization
MSL	Mean Sea Level
NAAQS	National Ambient Air Quality Standards
NAC	Noise Abatement Criteria
NEPA	National Environmental Policy Act
NES/BA	Natural Environment Study and Biological Assessment
NGVD	National Geodetic Vertical Datum
NMFS	National Marine Fisheries Service

NOI	Notice of Intent
NOx	Nitrogen Oxides
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NWP	Nationwide Permit
O3	Ozone
PA/SI	Preliminary Assessment/Site Investigation
Pb	Lead
PCB	Polychlorinated Biphenyl
PCE	Tetrachloroethene
PCM	Permanent Control Measures
PDT	Project Development Team
PM10	Particulate Matter with an Aerodynamic Diameter less than Ten Micrometers
PM2.5	Particulate Matter with an Aerodynamic Diameter less than 2.5 Micrometers
PPE	Personal Protective Equipment
ppm	Parts per Million
PS&E	Plans Specifications and Estimates
PSI	Preliminary Site Investigation
RCRA	Resource Conservation and Recovery Act
RMP	Regional Monitoring Program
ROD	Record of Decision
RTIP	Regional Transportation Improvement Program
RTP	Regional Transportation Plan
RWQCB	Central Valley Regional Water Quality Control Board
SARA	Superfund Amendments and Reauthorization Act
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SO2	Sulfur Dioxides
STIP	State Transportation Improvement Program
SVOC	Semi-Volatile Organic Compound
SWPPP	Storm Water Pollution Prevention Plan
TASAS	Traffic Accident Surveillance and Analysis System
TIP	Transportation Improvement Program
TMP	Transportation Management Plan
TPH	Total Petroleum Hydrocarbons
TRPH	Total Recoverable Petroleum Hydrocarbons
TSCA	Toxic Substance Control Act
TSM	Transportation Systems Management

ug/L	Micrograms per Liter
ug/m3	Micrograms per Cubic Meter
USACE	U.S. Army Corps of Engineers
USC	United States Code
USCG	U.S. Coast Guard
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	Underground Storage Tank
VOC	Volatile Organic Compound
WWTP	Wastewater Treatment Plant

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ACRONYMS

AADT	Average Annual Daily Traffic
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ADT	Average Daily Traffic
APCD	Air Pollution Control District
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BMP	Best Management Practices
CAA	Federal Clean Air Act
Cal EPA	California Environmental Protection Agency
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CCAA	California Clean Air Act
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CHP	California Highway Patrol
CMA	Congestion Management Agency
CMP	Congestion Management Plan
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Survey
CO	Carbon Monoxide
CSHC	California Streets and Highways Code
CTC	California Transportation Commission
CWA	Clean Water Act
dB	Decibel
dBA	A-weighted decibel
dBA Leq A-	weighted decibel equivalent sound level
DBH	Diameter at Breast Height measurement for trees.
DEIS	Draft Environmental Impact Statement
DHS	State of California Department of Health Services

DTSC	California Department of Toxic Substance Control
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
ESU	Evolutionary Significant Unit
FAA	Federal Aviation Administration
FCWA	Federal Clean Water Act
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
ft	Foot or feet
FTA	Federal Transit Administration
FWPCA	Federal Water Pollution Control Act
ha	Hectare or hectares
HAER	Historic American Engineering Record
HASR	Historic Architecture Survey Report
HOV	High Occupancy Vehicle
HPSR	Historic Properties Survey Report
HUD	Department of Housing and Urban Development
HWIS	Hazardous Waste Information System
ISA	Initial Site Assessment
km	Kilometer or kilometers
LEDPA	Least Environmentally Damaging Alternative
Leq	Equivalent Sound Level
LRT	Light Rail Transit
LTMS	Long-Term Management Strategy
LUST	Leaking Underground Storage Tank
m	Meter or meters
MCE	Maximum Credible Earthquake
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MPO	Metropolitan Planning Organization
MSL	Mean Sea Level
NAAQS	National Ambient Air Quality Standards
NAC	Noise Abatement Criteria
NEPA	National Environmental Policy Act
NES/BA	Natural Environment Study and Biological Assessment
NGVD	National Geodetic Vertical Datum
NMFS	National Marine Fisheries Service

NOI	Notice of Intent
NOx	Nitrogen Oxides
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NWP	Nationwide Permit
O3	Ozone
PA/SI	Preliminary Assessment/Site Investigation
Pb	Lead
PCB	Polychlorinated Biphenyl
PCE	Tetrachloroethene
PCM	Permanent Control Measures
PDT	Project Development Team
PM10	Particulate Matter with an Aerodynamic Diameter less than Ten Micrometers
PM2.5	Particulate Matter with an Aerodynamic Diameter less than 2.5 Micrometers
PPE	Personal Protective Equipment
ppm	Parts per Million
PS&E	Plans Specifications and Estimates
PSI	Preliminary Site Investigation
RCRA	Resource Conservation and Recovery Act
RMP	Regional Monitoring Program
ROD	Record of Decision
RTIP	Regional Transportation Improvement Program
RTP	Regional Transportation Plan
RWQCB	Central Valley Regional Water Quality Control Board
SARA	Superfund Amendments and Reauthorization Act
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SO2	Sulfur Dioxides
STIP	State Transportation Improvement Program
SVOC	Semi-Volatile Organic Compound
SWPPP	Storm Water Pollution Prevention Plan
TASAS	Traffic Accident Surveillance and Analysis System
TIP	Transportation Improvement Program
TMP	Transportation Management Plan
TPH	Total Petroleum Hydrocarbons
TRPH	Total Recoverable Petroleum Hydrocarbons
TSCA	Toxic Substance Control Act
TSM	Transportation Systems Management

ug/L	Micrograms per Liter
ug/m3	Micrograms per Cubic Meter
USACE	U.S. Army Corps of Engineers
USC	United States Code
USCG	U.S. Coast Guard
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	Underground Storage Tank
VOC	Volatile Organic Compound
WWTP	Wastewater Treatment Plant

GLOSSARY

1602 Agreement An agreement pursuant to Section 1602 of the California Fish and Game Code between the Department of Fish and Game and a public agency, designed to protect the fish and wildlife values of a lake or stream. It is required whenever a proposed activity will substantially divert or obstruct the natural flow or changes the bed, channel or bank of any river, stream or lake designated by the Department of Fish and Game. A 1602 Agreement is also required if any material from the streambeds is used.

404 Permit The Corps of Engineers requires this permit under Section 404 of the Clean Water Act for all projects that involve dredging or filling of lakes, streams, tidelands, marshes, or low-lying areas behind dikes or levees, as well as for disposal of dredged materials to any waterway or ocean.

Anadromous Migrating up rivers from the sea to breed in freshwater (*American Heritage Dictionary*, p. 106).

base floodplain elevation (BFE) The area subject to flooding by the base flood. The base flood is the flood or tide having a one percent chance of being exceeded in any given year (100 year flood).

Basin Plan A specific plan for control of water quality within one of the nine hydrologic basins of the State under the regulation of a Water Quality Control Board.

Beneficial Use A use of a natural water resource that enhances the social, economic, and environmental well-being of the user. Twenty-one beneficial uses are defined for the waters of California; they are listed and described below:

Agricultural Supply (ARG) – Includes crop, orchard, and pasture irrigation, stock watering support of vegetation for range grazing, and all uses in support of farming and ranching operations.

Preservation of Areas of Special Biological Significance (BIOL) – Such areas include marine life refuges, ecological or environmental reserves or preserves, areas where kelp propagation and maintenance require special protection, and formally designated Areas of Special Biological Significance.

Cold Freshwater Habitat (COLD) – Provides a cold water habitat to sustain aquatic resources associated with a cold water environment.

Ocean Commercial and Non-Fresh Water Sportfishing (COMM) – Includes the commercial collection of fish and shellfish, including those collected for bait, plus sportfishing in the oceans, bays, estuaries, and similar non-fresh water areas.

Fresh Water Replenishment (FRSH) – Provides a source of fresh water for replenishment of inland lakes and streams of varying salinity.

Ground Water Recharge (GWR) – Includes natural or artificial recharge for future extraction for beneficial uses and to maintain salt balance or halt saltwater intrusion into freshwater aquifers.

Industrial Service Supply (IND) – Includes uses which do not depend primarily on water quality, such as mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, and oil-well repressurization.

Marine Habitat (MAR) – Provides a water supply (and supports a vegetative habitat) for the maintenance of wildlife.

Fish Migration (MIGR) – Provides a migration route and temporary aquatic environment for anadromous or other fish species.

Municipal and Domestic Supply (MUN) – Includes usual uses in community or military water systems and domestic uses from individual water supply systems.

Navigation (NAV) – Includes commercial and naval shipping.

Hydroelectric Power Generation (POW) – Is that supply used for hydropower generation.

Industrial Process Supply (PROC) – Includes process water supply and all uses related to the manufacturing of products.

Preservation of Rare and Endangered Species (RARE) – Provides an aquatic habitat necessary, at least in part, for the survival of certain species established as being rare and endangered species.

Water-Contact Recreation (REC 1) – Includes all recreational uses involving actual body contact with water, such as swimming, wading, water-skiing, surfing, sport fishing, uses in therapeutic spas, and other uses where ingestion of water is reasonably possible.

Non-Contact Water Recreation (REC 2) – Covers recreational uses which involve the presence of water but do not require contact with water, such as picnicking, sunbathing, hiking, beachcombing, camping, pleasure boating, tidepool and marine life study, hunting, and aesthetic enjoyment in conjunction with the above activities as well as sightseeing.

Saline Water Habitat (SAL) – Provides an inland saline water habitat for aquatic and wildlife resources.

Shellfish Harvesting (SHEL) – The collection of shellfish such as clam, oysters, abalone, shrimp, crab, and lobster for sport or commercial purposes.

Fish Spawning (SPWN) – Provides a high-quality aquatic habitat especially suitable for fish spawning.

Warm Freshwater Habitat (WARM) – Provides a warm water habitat to sustain aquatic resources associated with a warm water environment.

Wildlife Habitat (WILD) – Provides a water supply and vegetative habitat for the maintenance of wildlife

Best Management Practice (BMP) Any program, technology, process, siting criteria, operating method, measure, or device that controls, prevents, removes, or reduces pollution.

Bypass An arterial highway that permits traffic to avoid all or part of a certain area such as an urban area or park.

CNPS California Native Plant Society. The California Native Plant Society produces an inventory of rare and endangered plants vascular plants of California. The inventory includes five lists which categorize the degree of concern for the plant, List 1A, 1B, 2, 3, and 4. Plants in List 1A, 1B and 2 are protected under Section 1901, Chapter 10 (Native Plant Protection Act) and Sections 2062 and 2067 of the California Endangered Species Act and are eligible for State listing. It is mandatory that they be fully considered during preparation of environmental documents relating to CEQA.

Chemical Oxygen Demand (COD) A monitoring test that measures all the oxidizable matter found in a runoff sample, a portion of which could deplete dissolved oxygen in receiving waters.

Conventional Highway A highway with no control of access (no control of access roads onto the highway) which may or may not be divided or have grade separations at interchanges.

Cooperating Agency (NEPA) A cooperating agency may be any other federal agency , other than the lead agency, that has jurisdiction by law or special expertise with respect to the environmental impacts expected to result from a proposal. (See also Responsible Agency)

Controlled Access Highway A freeway, as defined by statute, is a highway in which the owners of abutting lands have no right or easement of access to or from their abutting lands or where the adjacent landowners owners have only limited or restricted right or easement of access. A facility may be designated a "controlled access highway" in lieu of the designation "freeway".

Cumulative Effects The Council on Environmental Quality regulations for implementing the National Environmental Policy Act define cumulative effects as follows:

> *The impact on the environment which results from the incremental impact of the action when added to other past, present and reasonable foreseeable future actions regardless of what agency (Federal or non-federal) or person undertakes such other actions (40 CFR 1508.7).*

Design Speed A speed selected to establish specific minimum geometric design elements for a particular section of highway

Design Year The future year used to estimate the probable traffic volume for which a highway is designed. A time, 10 to 20 years, from the start of construction is usually used.

Detention Basin A basin, usually surrounded by a dike or levee, which holds stormwater runoff until the receiving waters are low enough for the contained water to be discharged.

Direct Effects [Impacts] Direct effects are caused by the action and occur at the same time and place. (40 CFR. 1508.8(a)) (See also Indirect Effects)

Discharge Instantaneous rate of flow expressed in terms of volume per unit time.

Draft EIR/EIS Draft Environmental Impact Report (State), Environmental Impact Statement (Federal)

Drainage Basin (drainage catchments) The area in which all storm water will accumulate into one given stream.

Ecosystem The total dynamic complex of a community of organisms and its controlling environment functioning as a unit.

Erosion The wearing away of the land surface by running water, wind, ice, or other geological agents.

Expressway An arterial highway with at least partial control of access, where limits are placed on number and types of intersecting streets, roads and driveways. An expressway may or may not be divided or have separations at intersections

Federal Register A federal publication which provides official notice of federal administrative hearings and issuance of proposed and final federal administrative rules and regulations.

Fishery A stream capable of supporting angling activities. Usually streams which show evidence of spawning and nursery grounds.

Freeway A divided arterial highway with full control of access and with grade separations at intersections.

Grade Separation Utilized when two roads intersect at different grades (vertical planes). Normally provided as part of an interchange; in lieu of an at-grade intersection.

ha hectares (acres **×** **.**40469 = hectares)

Habitat The place or type of site where a plant or animal naturally or normally lives and grows.

Highway A road without controlled access and may not necessarily have grade separations at intersections

Hydric Soil Soils that are saturated, flooded, or ponded long enough during the growing seasons to develop anaerobic conditions in the upper part (ACOE/EPA 1987 Manual).

Indirect Effects Indirect effects are caused by an action but occur later in time or are further removed in distance, but must be reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use; population density or growth rate; and related effects on air, water and other natural systems or ecosystems. (40 CFR 1508 (b))

Intermittent Stream A stream which flows only during part of the year, usually during wet weather.

Kjeldahl Nitrogen The total concentration of ammonia and organic nitrogen present, not including nitrates or nitrites.

Leq The equivalent steady-state sound level which in a stated period of time contains the same acoustic energy as the time-varying sound level during the same period.

Leq(h)...The hourly value of Leq

Level of Service **(LOS)** a measurement of the capacity of the roadway.

Median...The portion of a divided highway separating the traveled ways for traffic in

opposite directions.

Mitigation-actions or project design features that reduce impacts on cultural, socioeconomic or natural resources by:

not taking a certain action or parts of action,

minimizing impacts by limiting the degree or magnitude of the action or its implementation,

rectifying the impact by repairing, rehabilitating or restoring the affected environment,

compensating for the impact by replacing or providing substitute resources or environments, or

reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.

NOD Notice of Determination, part of the CEQA process. It indicates that a project has been approved subject to the requirements of CEQA.

NOP Notice of Preparation, part of the CEQA process. Notice of intent to prepare an environmental impact report on a project.

NOI Notice of Intent, part of the NEPA process. A notice placed in the Federal Register to advise the public that an environmental impact statement will be prepared for a project.

Nonpoint Source A dispersed source of pollution that is not identifiable as to a specific location, but may be identified as contributing to water quality degradation from a tributary drainage area.

NPDES Construction Permit (National Pollutant Discharge Elimination System) – A permit regulated by the Regional Water Quality Control Board required if more than 2 ha (5 acres) of original ground is graded. One condition of this permit is that the contractor submit a Storm Water Pollution Prevention Plan (SWPPP), which is similar to the Water Pollution Control Plan required by Caltrans Standard Specification 7-1.01G.

Parkway An arterial highway for non-commercial traffic, with full or partial access control, and usually located within a park or ribbon of park like development.

Perennial Stream A stream with continuous year-round flow.

pH A measure of the hydrogen ion activity, which in dilute solution may be considered approximately equivalent to the hydrogen ion concentration.

PM_{10} Particulate matter less than 10 microns in diameter.

Point Source A source of pollution waste water that is emitted at a singular location, usually a conduit or drainage channel, at which both flow and quality can be determined. Also a source of air pollution emitted at a singular location.

Post Mile (P.M.) A method of identifying a location on the State Highway System using miles. When combined with the county and route, identifies unique locations along any State Route in terms of miles.

Project Development team (PDT) A multi-disciplinary group of individuals who guide a project's development; usually composed of members of Caltrans, FHWA, cooperating

agencies, other agencies and the public.

Project Report A report providing programming project information that describes the project, its scope and limits, costs and delivery schedule.

Responsible Agency Responsible agency means a public agency, other than the Lead Agency, which has responsibility for carrying out or approving a project under CEQA.

Retention Basin A basin that holds stormwater runoff without release except by means of evaporation, infiltration or emergency bypass.

Riparian Corridor A delimited area of riparian (moist soil) substrate, within whose boundaries riparian vegetation may grow and support associated wildlife species.

Riparian Pertaining to the banks and other adjacent terrestrial (as opposed to aquatic) environs of freshwater bodies, watercourses, estuaries, and surface-emergent aquifers (springs, seeps, oases) whose transported freshwater provides soil moisture sufficient in excess of that otherwise available through local precipitation to potentially support the growth of mesic vegetation.

ROD Record of Decision. A federal decision document under NEPA that explains why an alternative has been selected, summarizes mitigation and summarizes efforts made to minimize environmental impacts.

Route Concept Most likely facility on the route given present and future financial, planning and engineering factors.

Runoff – The storm water which is not absorbed into the ground.

Scoping...An activity of the lead agency in the environmental review process that ensures the inclusion of: (1) all significant issues; and (2) maximum participation for the development of the EIS/EIR.

Special Status Species Plants and animals that are protected by State or Federal governments. Listed below are the designations:

Federal

FPE Proposed for federal endangered listing

FE Endangered - Taxa in danger of extinction throughout all or a significant portion of its range.

FT Threatened

FPT Proposed for federal threatened listing

C Candidate species taxa for which the Fish and Wildlife Service has sufficient biological information to support a proposal to list as endangered or threatened.

State

SE State Endangered - The prospects for survival and reproduction of the taxa are in immediate jeopardy from one or more causes.

ST State Threatened - Although not presently threatened with extinction, it is likely to become an endangered species in the foreseeable future in the absence of special protection and management efforts.

SR State Rare - Although not presently threatened with extinction, it is in such small numbers throughout its present range that it may become endangered if its present environment worsens (applied to plants only).

CSC California Species Of Special Concern. These species face immediate extirpation in California if current trends continue. Although they have no special legal status, these species are given management consideration whenever possible.

California Native Plant Society (CNPS)

List 1B Rare, threatened or endangered in California and elsewhere

List 2 Rare, threatened or endangered in California but common elsewhere

List 3 A review list, more information is needed

List 4 A watch list, plants of limited distribution

Stochastic Involving or containing a random variable.

Suspended Solids The filterable fraction of the total solid present in water.

Total Dissolved Solids – The non-filterable fraction of the total solid present in water.

Turbidity- The measure of the resistance of water to the passage of light through it (Babbitt, Donald, p. 384).

Urban- **A**n area is considered urban if it has a population of 5000 or more for Federal-Aid purposes.

Waters of the United States As defined by the ACOE in 33 CFR §328.3(a):

1. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide,

2. All interstate waters including interstate wetlands,

3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce, including any such waters:

   (i) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or

   (ii) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or

   (iii) Which are used or could be used for industrial purposes by industries in interstate commerce,

4. All impoundment of waters otherwise defined as waters of the United States under this definition,

5. Tributaries of waters identified in paragraphs (1)-(4),

6. The territorial seas,

7. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (1)-(6).

Watershed The drainage basin contributing water, organic matter, dissolved nutrients, and sediments to a stream, estuary, or lake.

WET 2.0 Wetland Evaluation Technique, a methodology for the assessment of wetland

functions and values.

Wetland Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas (33 CFR §328.3 (b)).

Zone A A floodplain determination where no base flood elevations have been determined.

Zone AE A floodplain determination where base flood elevations have been determined.