Meeting of the Central Valley Flood Protection Board
October 28, 2016

Staff Report

Transfer of Interim Operation, Maintenance, Repair, Replacement and Rehabilitation Responsibilities
South Sacramento County Streams, California
San Joaquin River Basin, Flood Control Project

Sacramento Area Flood Control Agency, Sacramento County

1.0 – ITEM

Consider approval of Resolution 2016-17 (Attachment A) to transfer the project elements completed thus far of the *South Sacramento County Streams, California, San Joaquin River Basin, Flood Control Project* (Project) (Attachment B) for interim operation, maintenance, repair, replacement, and rehabilitation to the Sacramento Area Flood Control Agency (SAFCA). Resolution 2016-17 in pertinent part:

- accepts, from the U.S. Army Corps of Engineers (USACE), interim responsibilities for operation, maintenance, repair, replacement, and rehabilitation (OMRR&R) of the Project, constructed by USACE under a Project Cooperation Agreement with the Reclamation Board (now the Central Valley Flood Protection Board (Board)) executed May 2005 (Attachment C), and pursuant to USACE Sacramento District letter (Attachment D) to the Board; and
- transfers those interim OMRR&R responsibilities to SAFCA in accordance with the USACE *Interim Operation, Maintenance, Repair, Replacement, & Rehabilitation Manual* (Attachment E1) and project as-built drawings (Attachment E2), and pursuant to a Local Project Cooperation Agreement executed May 2005 (Attachment F) between the Board and SAFCA. A draft Board letter transferring the above OMRR&R responsibilities is attached hereto as Attachment G.

2.0 – PROJECT LOCATION AND PURPOSE

The South Sacramento County Streams drainage basin lies in the southeast portion of the City of Sacramento (City). The upper-most parts of the basin lie in the lower foothills of the Sierra Nevada, and a portion of the basin lies within the City limits. Runoff from basin streams flows into the Mokelumne River in the northern Delta, and from there into the San Joaquin River.

The authorized project purposes are flood damage reduction for the 100-year event, ecosystem restoration, and recreational improvements for Morrison, Florin, Elder, and Unionhouse Creeks. In the Beach-Stone Lakes area, the Project provides protection from flooding that could result from failure of the Beach Lake levee protecting the Pocket Area in south Sacramento, and a perimeter levee protecting the Sacramento Regional County Sanitation District's (SRCSD) Sacramento Regional Wastewater Treatment Plant (SRWTP).

3.0 – PROJECT PROPONENTS AND AGREEMENTS

USACE is the federal project proponent, the Board is the non-federal project sponsor, and SAFCA is the local project sponsor.

USACE completed a reconnaissance study in 1995. Subsequently, a feasibility study was completed in 1998 by the USACE in partnership with SAFCA. The feasibility study developed, analyzed, and recommended flood risk reduction alternatives. Congress authorized the Project through the Water Resources Development Act (WRDA) of 1999, (Public Law 106-53).

The Board executed a Project Cooperation Agreement (PCA) with USACE and a Local Project Cooperation Agreement (LPCA) with SAFCA in May 2005 to construct the Project.

Pursuant to LPCA Section V.A, "Upon completion of the Project or any functional portion thereof as determined by the Government, the Board shall turn the completed Project, including all required lands and rights of way acquired by or on behalf of the Board, over to the Local Sponsor for operation and maintenance." (Water Code Section 12642 and LPCA Section II.J.2.) The turnover will be accompanied by a copy of the Government's Interim Manual for the Operation, Maintenance, Repair, Replacement and Rehabilitation of the Project, as provided by Article VIII of the PCA. USACE has completed the project elements as described in Section 4.0 and those elements are ready to be transferred to SAFCA by the Board.

4.0 – PROJECT DESCRIPTION

The Project includes modifications to channels and storm drain outfalls; construction of stop log structures and floodwalls or the raising of levees along Beach Lake, Morrison,

Elder, Florin, and Unionhouse Creeks; improvement of maintenance roads and under-crossings; and construction of a perimeter levee around the SRWTP.

On June 22, 2015, USACE transmitted a letter (Attachment D) to the Board stating that certain elements of the project had been completed, and that those elements were being transferred to the Board for OMRR&R responsibility. The transferred elements include:

- North Beach Lake Levee and Floodwall Improvements, West of Union Pacific Railroad (UPRR) to Sacramento River (Contract 1A, completed January 27, 2006);
- Morrison Creek Levee and Floodwall Improvements, East of UPRR to Franklin Boulevard (Contract 1B1, completed November 13, 2008);
- Unionhouse, Florin, and Elder Creeks Levee Improvements upstream to Franklin Boulevard (Contract 1B2, completed November 26, 2008);
- Morrison Creek left bank (east) floodwall along UPRR (Contract 2A, completed November 1, 2013).

5.0 – AUTHORITY OF THE BOARD

- Code of Federal Regulations, Title 33, Chapter II, Part 208
- California Water Code § 12642 and § 12670.14(d)
- California Code of Regulations, Title 23, Division 1 (Title 23)

6.0 – CEQA ANALYSIS

SAFCA, as lead agency under the California Environmental Quality Act (CEQA) (Public Resources Code sections 21000 et seq.), has prepared several joint and independent environmental documents for the Project.

In 1998, the United States Army Corps of Engineers (USACE) and Sacramento Area Flood Control Agency (SAFCA) prepared a joint Environmental Impact Study (EIS)/Environmental Impact Report (EIR) (State Clearinghouse Number (SCH. No.) 1997102056) in accordance with NEPA and CEQA.

In 2001, SAFCA certified a Supplemental EIR/EA for the Camray Borrow Site and Additional Aspects of the North Beach Lake Levee Improvement Project (SCH. No. 1997102056). The Board, as a responsible agency, independently reviewed the

analyses in the above mentioned environmental documents for the project, which included the SAFCA Lead Agency findings, Statement of Overriding Considerations (SOC), and the Mitigation Monitoring and Reporting Plans (MMRP). The Board adopted Resolution 2002-05, made appropriate CEQA findings, and filed determinations with the State Clearinghouse.

Following completion of the 1998 EIS/EIR and project approval, the USACE and SAFCA developed a series of refined design elements which were evaluated in the South Sacramento Streams Group Project Design Refinements Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) prepared by the USACE in 2004, and in a Supplemental EIR (South Sacramento County Streams Project Supplemental EIR) (SEIR) (SCH No. 2004102009) prepared by SAFCA. SAFCA certified the SEIR and approved the project refinements in February 2005. The Board, as a responsible agency, independently reviewed the analyses in the SEIR for the project, which included the SAFCA Lead Agency findings, SOC, and the MMRP. The Board adopted Resolution 2005-01, made appropriate CEQA findings, and filed determinations with the State Clearinghouse.

In 2011, USACE and SAFCA prepared an Environmental Assessment/Initial Study (EA/IS) and Mitigated Negative Declaration (MND) for South Sacramento County Streams Morrison Creek – Union Pacific Railroad Flood Damage Reduction Project, a supplemental NEPA/CEQA document intended to address design changes from the 1998 EIS/EIR. The Board, as a CEQA responsible agency, considered the Final EA/IS and MND, SAFCA Lead Agency Findings, and the MMRP. The Board adopted Resolution 2011-23, made appropriate CEQA findings, and filed determinations with the State Clearinghouse.

In addition, SAFCA prepared an IS/MND for the Florin Creek Project, the final construction phase of the South Sacramento Streams Group Project. The IS/MND addressed design refinements from the original proposed project as described in the 1998 EIS/EIR. The Board, as a CEQA responsible agency, considered the Final IS/MND, SAFCA Lead Agency Findings, and the MMRP. The Board approved the project and filed a Notice of Determination with the State Clearinghouse on July 8, 2014 (SCH No. 2014042026).

The action before the Board described in this Staff Report consists solely of the transfer of interim OMRR&R responsibilities and corresponding documents for completed project elements to SAFCA. Final OMRR&R documents are expected after Florin Creek Project construction is completed. This action constitutes a ministerial action statutorily exempt from CEQA under Guidelines section 15268.

7.0 – STAFF CONCLUSIONS

Board staff concludes that the interim OMRR&R responsibilities for project elements completed under Contracts 1A, 1B1, 1B2, and 2A have been appropriately transferred by USACE to the Board pursuant to the PCA, and may now be transferred from the Board to SAFCA pursuant to the LPCA.

8.0 – STAFF RECOMMENDATION

Staff recommends that the Board adopt Resolution 2016-17, which:

- **accepts** interim responsibilities for OMRR&R from USACE;
- **determines** that the proposed transfers from the Board to SAFCA are ministerial actions statutorily exempt from CEQA under Guidelines section 15268;
- **transfers** those responsibilities pursuant to the LPCA, and as described in the Interim OMRR&R Manual and as-built drawings, to SAFCA;
- **directs** the Board's Executive Officer to:
    - execute the draft letter to SAFCA in substantially the form provided, and
    - file a Notice of Exemption with the State Clearinghouse.

9.0 – LIST OF ATTACHMENTS

A. Board Resolution 2016-17

B. Project Location Map

C. PCA between the Board and USACE, May 2005

D. USACE OMRR&R Transfer Letter to the Board, June 2015

E. Part 1, USACE Interim OMRR&R Manual, June 2015

E. Part 2, USACE As-Built Drawings

F. LPCA between the Board and SAFCA, May 2005

G. Draft Board OMRR&R Transfer Letter to SAFCA, October 2016

Prepared By:	Deb Biswas, PE, Engineer, WR
Environmental Review:	Ruth Darling, Senior Environmental Scientist
Staff Report Review:	Eric Butler, PE, Plan Implementation and Compliance Branch Chief
	Mitra Emami, PE, Acting Chief Engineer
	Kanwarjit Dua, Board Counsel

STATE OF CALIFORNIA
CALIFORNIA NATURAL RESOURCES AGENCY
CENTRAL VALLEY FLOOD PROTECTION BOARD

DRAFT RESOLUTION NO. 2016-17

FINDINGS AND DECISION AUTHORIZING TRANSFER OF
INTERIM OPERATIONS, MAINTENANCE, REPAIR, REPLACEMENT
AND REHABILITATION RESPONSIBILITIES FOR THE
SOUTH SACRAMENTO COUNTY STREAMS, CALIFORNIA
SAN JOAQUIN RIVER BASIN, FLOOD CONTROL PROJECT
TO THE SACRAMENTO AREA FLOOD CONTROL AGENCY

WHEREAS, the U.S. Army Corps of Engineers (USACE) completed a reconnaissance study in 1995 for the South Sacramento County Streams, California, San Joaquin River Basin, Flood Control Project (Project) to protect the Pocket Area in south Sacramento and the Sacramento Regional Wastewater Treatment Plant (SRWTP); and

WHEREAS, USACE completed a feasibility study for the Project in 1998 in partnership with the Sacramento Area Flood Control Agency (SAFCA) to develop, analyze, and recommend flood risk reduction alternatives for the Project; and

WHEREAS, Congress authorized levee and channel improvements known as the Project in the Water Resources Development Act (WRDA) of 1999 (Public Law 106-53); and

WHEREAS, the Project was authorized by the State Legislature in Water Code Section 12670.14 (d); and

WHEREAS, the Reclamation Board (now the Central Valley Flood Protection Board (Board)), is the non-federal sponsor and California Environmental Quality Act (CEQA) responsible agency for the Project; USACE is the federal sponsor and lead agency under the National Environmental Policy Act (NEPA); and SAFCA is the local sponsor and lead agency under CEQA (Public Resources Code sections 21000 et seq.); and

WHEREAS, in 1998, USACE and SAFCA prepared a joint Environmental Impact Study (EIS)/Environmental Impact Report (EIR) (State Clearinghouse Number (SCH. No)1997102056) in accordance with NEPA and CEQA; and

WHEREAS, in 2001, SAFCA certified a Supplemental EIR/Environmental Assessment for the Camray Borrow Site and Additional Aspects of the North Beach Lake Levee Improvement Project (SCH. No. 1997102056); and

WHEREAS, The Board, as a responsible agency, independently reviewed the analyses in the above mentioned environmental documents for the project, which included the SAFCA Lead Agency findings, Statement of Overriding Considerations (SOC), and the Mitigation Monitoring and Reporting Plans (MMRP). The Board adopted Resolution 2002-05, made appropriate CEQA findings, and filed determinations with the State Clearinghouse; and

WHEREAS, following completion of the 1998 EIS/EIR and project approval, the USACE and SAFCA developed a series of refined design elements which were evaluated in the South Sacramento Streams Group Project Design Refinements Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) prepared by USACE in 2004, and in a Supplemental EIR (South Sacramento County Streams Project Supplemental EIR) (SEIR) (SCH No. 2004102009) prepared by SAFCA; and

WHEREAS, SAFCA certified the SEIR and approved the project refinements in February 2005; and

WHEREAS, the Board, as a responsible agency, independently reviewed the analyses in SEIR for the project, which included the SAFCA Lead Agency findings, SOC, and the MMRP. The Board adopted Resolution 2005-01, made appropriate CEQA findings, and filed determinations with the State Clearinghouse; and

WHEREAS, in 2011, USACE and SAFCA prepared an Environmental Assessment/Initial Study (EA/IS) and Mitigated Negative Declaration (MND) for South Sacramento County Streams Morrison Creek – Union Pacific Railroad Flood Damage Reduction Project, a supplemental NEPA/CEQA document intended to address design changes from the 1998 EIS/EIR; and

WHEREAS, the Board, as a CEQA responsible agency, considered the Final EA/IS and MND, SAFCA Lead Agency Findings, and MMRP, adopted Resolution 2011-23, made appropriate CEQA findings, and filed determinations with the State Clearinghouse; and

WHEREAS, SAFCA prepared an Initial Study/Mitigated Negative Declaration (IS/MND) for the Florin Creek Project, the final construction phase of the Project. The IS/MND addressed design refinements from the original proposed project as described in the 1998 EIS/EIR; and

WHEREAS, the Board, as a CEQA responsible agency, considered the Final IS/MND, SAFCA Lead Agency Findings, and the MMRP, and approved the project and filed a Notice of Determination with the State Clearinghouse on July 8, 2014 (SCH No. 2014042026); and

WHEREAS, the Board executed a Project Cooperation Agreement (PCA) with USACE dated May 20, 2005, and a Local Project Cooperation Agreement (LPCA) with SAFCA dated May 19, 2005, for Operation, Maintenance, Repair, Replacement, and Rehabilitation (OMRR&R) responsibilities; and

WHEREAS, as per Section II.J.2 of the LPCA, SAFCA is obligated to operate, maintain, repair, replace, and rehabilitate the facilities and related features constructed as part of the Project, including any environmental mitigation and monitoring features described in Section V.A of the LPCA, in accordance with the regulations or directions prescribed by the Secretary of the Army; and

WHEREAS, as per Section V.A of the LPCA, "Upon completion of the Project or any functional portion thereof as determined by USACE, the Board shall turn the completed Project, including all required lands and rights of way acquired by or on behalf of the Board, over to SAFCA for operation and maintenance." (Water Code Section 12642 and LPCA Section I.J.2.) The turnover will include copies of the USACE's Interim Manual for the Operation, Maintenance, Repair, Replacement and Rehabilitation of the Project, and as-built drawings, as provided by Article VIII of PCA; and

WHEREAS, the Board staff received a letter dated June 22, 2015 from USACE along with the Interim Operation, Maintenance, Repair, Replacement, and Rehabilitation Manual and as-built drawings transferring completed elements of the Project to the Board for the following:

- North Beach Lake Levee and Floodwall Improvements, West of Union Pacific Railroad (UPRR) to Sacramento River (Contract 1A, completed January 27, 2006);
- Morrison Creek Levee and Floodwall Improvements, East of UPRR to Franklin Boulevard (Contract 1B1, completed November 13, 2008);
- Unionhouse, Florin, and Elder Creeks Levee Improvements, upstream to Franklin Boulevard (Contract 1B2, completed November 26, 2008);
- Morrison Creek left bank (east) floodwall along UPRR (Contract 2A, completed November 1, 2013); and

WHEREAS, the Board concludes that interim OMRR&R responsibilities for project elements completed by USACE have been appropriately transferred by USACE to the Board pursuant to the Project Cooperation Agreement, and may now be transferred from the Board to SAFCA pursuant to LPCA; and

WHEREAS, the Board conducted a public hearing on October 28, 2016 regarding transfer of the interim OMRR&R responsibilities to SAFCA; and

WHEREAS, the Board reviewed the report of its staff, the USACE Interim OMRR&R Manual, and all project-related documents and correspondence in the Board files.

NOW, THEREFORE, BE IT RESOLVED THAT,

Findings of Fact

1. The Board hereby adopts as findings the facts set forth in the accompanying staff report.
2. The Board has reviewed all Attachments, Exhibits, Figures, and References listed in the staff report.

CEQA Findings

3. The Board, as a responsible agency, has previously reviewed the Project NEPA/CEQA documents including Lead Agency Findings, Statement of Overriding Considerations, and MMRPs. The Board approved the NEPA/CEQA documents and the Project, adopted Resolutions 2002-05, 2005-01, and 2011-23 and filed Notices of Determinations with the State Clearinghouse.

   The action before the Board described in the Staff Report consists solely of the transfer of interim OMRR&R responsibilities and corresponding documents for completed project elements to SAFCA. Final OMRR&R documents will be transferred at a later date. The Board finds that no new environmental effects could occur and no new mitigation measures are required pursuant to CEQA Guidelines section 15162. Therefore, no new environmental document is required pursuant to CEQA Guidelines section 15168. This action constitutes a ministerial action statutorily exempt from CEQA under Guidelines section 15268.

4. **Custodian of Record.** The custodian of the CEQA records for the Board is its Executive Officer, at the Board's office, located at 3310 El Camino Avenue, Suite 170, Sacramento, California 95821. The CEQA records are available for review in hard copy at the Board office.

Other Findings/Conclusions

5. Based on the foregoing, the Board finds that the transfer of interim OMRR&R responsibilities to SAFCA, the Interim O&M Manual prepared by USACE are in compliance with the OMRR&R agreement between the Board and SAFCA, and are in the public interest.

6. This resolution shall constitute the written decision of the Board for this matter.

Approval of Board Action

7. Based on the foregoing, the Board hereby adopts Resolution 2016-17 which:

- **accepts** interim responsibilities for OMRR&R from USACE;

- **determines** that the proposed transfers from the Board to SAFCA are ministerial actions and are statutorily exempt from CEQA under Guidelines section 15268;

- **transfers** those responsibilities pursuant to the LPCA, and as described in the Interim OMRR&R Manual and as-built drawings, to SAFCA;

- **directs** the Board's Executive Officer to:
    - execute the draft letter to SAFCA in substantially the form provided, and
    - file a Notice of Exemption with the State Clearinghouse.

PASSED AND ADOPTED by vote of the Board on _____, 2016.

_____
William H. Edgar
President

_____
Jane Dolan
Secretary

Attachment B - Project Map

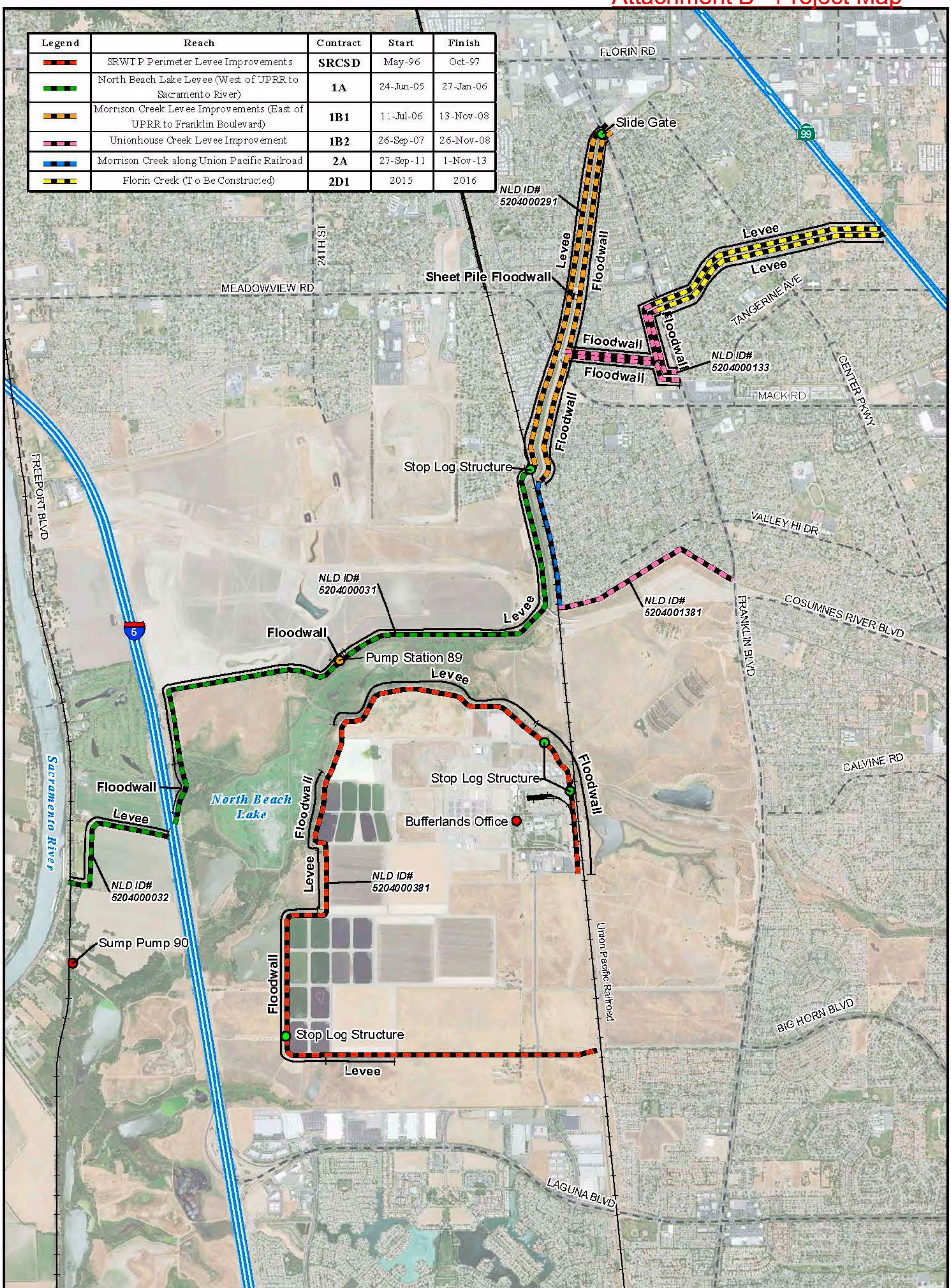


Exhibit A - Location Map

PROJECT COOPERATION AGREEMENT BETWEEN THE DEPARTMENT OF THE ARMY AND THE STATE OF CALIFORNIA, THE RECLAMATION BOARD FOR CONSTRUCTION OF THE SOUTH SACRAMENTO COUNTY STREAMS, CA, SAN JOAQUIN RIVER BASIN, FLOOD CONTROL PROJECT

THIS AGREEMENT is entered into this 20th day of May, 2005, by and between the DEPARTMENT OF THE ARMY (hereinafter the "Government"), represented by the U.S. Army Engineer for Sacramento District, and the STATE OF CALIFORNIA, represented by the President of THE RECLAMATION BOARD (hereinafter the "Non-Federal Sponsor").

WITNESSETH, THAT:

WHEREAS, construction of the San Joaquin River Basin, South Sacramento County Streams project in Sacramento County, California was authorized by Section 101(a)(8) of the Water Resources Development Act of 1999 (Public Law 106-53).

WHEREAS, the Government and the Non-Federal Sponsor desire to enter into a Project Cooperation Agreement for construction of the flood control portion only of the San Joaquin River Basin, South Sacramento County Streams project (hereinafter the "Project", as defined in Article I.A. of this Agreement);

WHEREAS, Section 103 of the Water Resources Development Act of 1986, Public Law 99-662, as amended, specifies the cost-sharing requirements applicable to the Project;

WHEREAS, Section 221 of the Flood Control Act of 1970, Public Law 91-611, as amended, and Section 103 of the Water Resources Development Act of 1986, Public Law 99-662, as amended, provide that the Secretary of the Army shall not commence construction of any water resources project, or separable element thereof, until the Non-Federal Sponsor has entered into a written agreement to furnish its required cooperation for the project or separable element;

Attachment C - PCA between USACE and Board

STATE OF CALIFORNIA
STANDARD AGREEMENT
STD 213 (Rev 06/03)

AGREEMENT NUMBER
4600002777
REGISTRATION NUMBER

1. This Agreement is entered into between the State Agency and the Contractor named below:

STATE AGENCY'S NAME
Department of Water Resources/The Reclamation Board

CONTRACTOR'S NAME
The Department of the Army Corps of Engineers

2. The term of this Agreement is: February 15, 2005 through Notice of completion
This Agreement shall not become effective until approved by the Department of General Services.

3. The maximum amount of this Agreement is: $ 93,692,000.00
Ninety three million and six-ninety two thousand dollars and no cents.

4. The parties agree to comply with the terms and conditions of the following exhibits which are by this reference made a part of the Agreement.

See Project Cooperation Agreement Between the State of California The Reclamation Board for construction of the South Sacramento County Streams Project, CA, San Joaquin River Basin, Flood Control Project, which is attached and made a part of this Agreement by this reference.

Signatures appear on page 34 of the Agreement.

IN WITNESS WHEREOF, this Agreement has been executed by the parties hereto.

CONTRACTOR	California Department of General Services Use Only
CONTRACTOR'S NAME *(if other than an individual, state whether a corporation, partnership, etc.)*	
BY *(Authorized Signature)* — DATE SIGNED *(Do not type)*	MAY 18 2005 DEPT OF GENERAL SERVICES
PRINTED NAME AND TITLE OF PERSON SIGNING	
ADDRESS	
STATE OF CALIFORNIA	
AGENCY NAME	
BY *(Authorized Signature)* — DATE SIGNED *(Do not type)*	
PRINTED NAME AND TITLE OF PERSON SIGNING	
ADDRESS	

WHEREAS, Section 104 of the Water Resources Development Act of 1986, Public Law 99-662 authorizes the Assistant Secretary of the Army (Civil Works) to afford a credit for work accomplished by the Non-Federal Sponsor;

WHEREAS, the Non-Federal Sponsor does not qualify for a reduction of the maximum non-Federal cost share pursuant to the guidelines that implement Section 103(m) of the Water Resources Development Act of 1986, Public Law 99-662, as amended;

WHEREAS, Section 902 of Public Law 99-662 establishes the maximum amount of costs for the South Sacramento County Streams project for flood control, environmental restoration and recreation, and sets forth procedures for adjusting such maximum amount; and

WHEREAS, the Government and Non-Federal Sponsor have the full authority and capability to perform as hereinafter set forth and intend to cooperate in cost-sharing and financing of the construction of the Project in accordance with the terms of this Agreement.

NOW, THEREFORE, the Government and the Non-Federal Sponsor agree as follows:

ARTICLE I - DEFINITIONS AND GENERAL PROVISIONS

For purposes of this Agreement:

A. The term "Project" shall mean providing flood damage reduction to the Morrison Creek stream group and Beach-Stone lakes drainage basins in Sacramento County, CA. The project includes raising and extending the ring levee around the Sacramento Regional Wastewater Treatment Plant; raising the North Beach Lake levee; strengthening and raising levees or floodwalls on Morrison Creek and its major tributaries, Elder, Florin, and Unionhouse Creeks; modifying channels to increase capacity; retrofitting 17 bridges and removing one bridge; and associated environmental mitigation as generally described in the San Joaquin River Basin, South

Sacramento County Streams Final Feasibility Report with Appendices, dated March 1998, and Addendum to Final Feasibility Report dated September 1998, and approved by Chief of Engineers on 6 October, 1998 and the Limited Reevaluation Report approved by the Division Commander on 10 February 2005. The Project includes the Section 104 work described in Article I.K. of this Agreement.

B. The term "total project costs" shall mean all costs incurred by the Non-Federal Sponsor and the Government in accordance with the terms of this Agreement directly related to construction of the Project. Subject to the provisions of this Agreement, the term shall include, but is not necessarily limited to: continuing planning and engineering costs incurred after October 1, 1985; advanced engineering and design costs; preconstruction engineering and design costs; engineering and design costs during construction; the costs of investigations to identify the existence and extent of hazardous substances in accordance with Article XV.A. of this Agreement; costs of historic preservation activities in accordance with Article XVIII.A. of this Agreement; actual construction costs, including the costs of alteration, lowering, raising, or replacement and attendant removal of existing railroad bridges and approaches thereto; the credit amount for the Section 104 work performed by the Non-Federal Sponsor afforded in accordance with Article II.D.5. of this Agreement, supervision and administration costs; costs of participation in the Project Coordination Team in accordance with Article V of this Agreement; costs of contract dispute settlements or awards; the value of lands, easements, rights-of-way, relocations, and suitable borrow and dredged or excavated material disposal areas for which the Government affords credit in accordance with Article IV of this Agreement; and costs of audit in accordance with Article X of this Agreement. The term does not include any costs for operation, maintenance, repair, replacement, or rehabilitation; any costs due to betterments; or any costs of dispute resolution under Article VII of this Agreement.

C. The term "financial obligation for construction" shall mean a financial

obligation of the Government, a financial obligation of the Non-Federal Sponsor for Section 104 work, and work other than an obligation pertaining to the provision of lands, easements, rights-of-way, relocations, and borrow and dredged or excavated material disposal areas, that results or would result in a cost that is or would be included in total project costs.

D. The term "non-Federal proportionate share" shall mean the ratio of the Non-Federal Sponsor's total cash contribution required in accordance with Articles II.D.1. and II.D.3. of this Agreement to total financial obligations for construction, as projected by the Government.

E. The term "period of construction" shall mean the time from the date the Government first notifies the Non-Federal Sponsor in writing, in accordance with Article VI.B. of this Agreement, of the scheduled date for issuance of the solicitation for the first construction contract to the date that the U.S. Army Engineer for the Sacramento District (hereinafter the "District Engineer") notifies the Non-Federal Sponsor in writing of the Government's determination that construction of the Project is complete.

F. The term "highway" shall mean any public highway, roadway, street, or way, including any bridge thereof.

G. The term "relocation" shall mean providing a functionally equivalent facility to the owner of an existing utility, cemetery, highway or other public facility, or railroad (excluding existing railroad bridges and approaches thereto) when such action is authorized in accordance with applicable legal principles of just compensation or as otherwise provided in the authorizing legislation for the Project or any report referenced therein. Providing a functionally equivalent facility may take the form of alteration, lowering, raising, or replacement and attendant removal of the affected facility or part thereof.

H. The term "fiscal year" shall mean one fiscal year of the Government. The Government fiscal year begins on October 1 and ends on September 30.

I. The term "functional portion of the Project" shall mean a portion of the Project that is suitable for tender to the Non-Federal Sponsor to operate and maintain in advance of completion of the entire Project. For a portion of the Project to be suitable for tender, the District Engineer must notify the Non-Federal Sponsor in writing of the Government's determination that the portion of the Project is complete and can function independently and for a useful purpose, although the balance of the Project is not complete.

J. The term "betterment" shall mean a change in the design and construction of an element of the Project resulting from the application of standards that the Government determines exceed those that the Government would otherwise apply for accomplishing the design and construction of that element.

K. The term "Section 104 work" shall mean the planning, engineering design and construction of the Sacramento Regional Waste Water Treatment Plant ring levee and planning and engineering design of improvements to the North Beach Lake levee and Morrison Creek west levee to Mack Road approved by the Assistant Secretary of the Army (Civil Works) on September 12, 1996, and as described in Chapter 10 of the San Joaquin River Basin, South Sacramento County Streams Final Feasibility Report with Appendices, dated March 1998, and Addendum to Final Feasibility Report dated September 1998 and the Limited Reevaluation Report dated December 2004. The Section 104 work includes construction of the authorized improvements as well as planning, engineering, design, supervision and administration, and other activities associated with construction, but does not include the construction of betterments or the provision of lands, easements, rights-of-way, relocations, or suitable borrow and dredged or excavated material disposal areas associated with the Section 104 work.

ARTICLE II - OBLIGATIONS OF THE GOVERNMENT

AND THE NON-FEDERAL SPONSOR

A. The Government, subject to receiving funds appropriated by the Congress of the United States (hereinafter, the "Congress") and using those funds and funds provided by the Non-Federal Sponsor, shall expeditiously construct the Project (including alteration, lowering, raising, or replacement and attendant removal of existing railroad bridges and approaches thereto), applying those procedures usually applied to Federal projects, pursuant to Federal laws, regulations, and policies.

1. The Government shall afford the Non-Federal Sponsor the opportunity to review and comment on the solicitations for all contracts, including relevant plans and specifications, prior to the Government's issuance of such solicitations. The Government shall not issue the solicitation for the first construction contract until the Non-Federal Sponsor has confirmed in writing their willingness to proceed with the Project. To the extent possible, the Government shall afford the Non-Federal Sponsor the opportunity to review and comment on all contract modifications, including change orders, prior to the issuance to the contractor of a Notice to Proceed. In any instance where providing the Non-Federal Sponsor with notification of a contract modification or change order is not possible prior to issuance of the Notice to Proceed, the Government shall provide such notification in writing at the earliest date possible. To the extent possible, the Government also shall afford the Non-Federal Sponsor the opportunity to review and comment on all contract claims prior to resolution thereof. The Government shall consider in good faith the comments of the Non-Federal Sponsor, but the contents of solicitations, award of contracts, execution of contract modifications, issuance of change orders, resolution of contract claims, and performance of all work on the Project (whether the work is performed under contract or by Government personnel), shall be exclusively within the control of the Government.

2. Throughout the period of construction, the District Engineer shall

furnish the Non-Federal Sponsor with a copy of the Government's Written Notice of Acceptance of Completed Work for each contract for the Project.

3. Notwithstanding paragraph A.1. of this Article, if, upon the award of any contract for construction of the Project, cumulative financial obligations for construction would exceed $86,390,000 the Government and the Non-Federal Sponsor agree to defer award of that contract and all subsequent contracts for construction of the Project until such time as the Government and the Non-Federal Sponsor agree to proceed with further contract awards for the Project, but in no event shall the award of contracts be deferred for more than three years. Notwithstanding this general provision for deferral of contract awards, the Government, after consultation with the Non-Federal Sponsor, may award a contract or contracts after the Assistant Secretary of the Army (Civil Works) makes a written determination that the award of such contract or contracts must proceed in order to comply with law or to protect life or property from imminent and substantial harm.

B. The Non-Federal Sponsor may request the Government to accomplish betterments. Such requests shall be in writing and shall describe the betterments requested to be accomplished. If the Government in its sole discretion elects to accomplish the requested betterments or any portion thereof, it shall so notify the Non-Federal Sponsor in a writing that sets forth any applicable terms and conditions, which must be consistent with this Agreement. In the event of conflict between such a writing and this Agreement, this Agreement shall control. The Non-Federal Sponsor shall be solely responsible for all costs due to the requested betterments and shall pay all such costs in accordance with Article VI.C. of this Agreement.

C. When the District Engineer determines that the entire Project is complete or that a portion of the Project has become a functional portion of the Project, the District Engineer shall so notify the Non-Federal Sponsor in writing and furnish the Non-Federal Sponsor with an Operation, Maintenance, Repair,

Replacement, and Rehabilitation Manual (hereinafter the "OMRR&R Manual") and with copies of all of the Government's Written Notices of Acceptance of Completed Work for all contracts for the Project or the functional portion of the Project that have not been provided previously. Upon such notification, the Non-Federal Sponsor shall operate, maintain, repair, replace, and rehabilitate the entire Project or the functional portion of the Project in accordance with Article VIII of this Agreement.

D. The Non-Federal Sponsor shall contribute a minimum of 35 percent, but not to exceed 50 percent, of total project costs in accordance with the provisions of this paragraph.

1. The Non-Federal Sponsor shall provide a cash contribution equal to five percent of total project costs in accordance with Article VI.B. of this Agreement.

2. In accordance with Article III of this Agreement, the Non-Federal Sponsor shall provide all lands, easements, rights-of-way, and suitable borrow and dredged or excavated material disposal areas that the Government determines the Non-Federal Sponsor must provide for the construction, operation, and maintenance of the Project, and shall perform or ensure performance of all relocations that the Government determines to be necessary for the construction, operation, and maintenance of the Project.

3. If the Government projects that the value of the Non-Federal Sponsor's contributions under paragraphs D.1. and D.2. of this Article and Articles V, X, and XV.A. of this Agreement will be less than 35 percent of total project costs, the Non-Federal Sponsor shall provide an additional cash contribution, in accordance with Article VI.B. of this Agreement, in the amount necessary to make the Non-Federal Sponsor's total contribution equal to 35 percent of total project costs.

4. If the Government determines that the value of the Non-Federal

Sponsor's contributions provided under paragraphs D.2. and D.3. of this Article and Articles V, X, and XV.A. of this Agreement has exceeded 45 percent of total project costs, the Government, subject to the availability of funds, shall reimburse the Non-Federal Sponsor for any such value in excess of 45 percent of total project costs. After such a determination, the Government, in its sole discretion, may provide any remaining Project lands, easements, rights-of-way, and suitable borrow and dredged or excavated material disposal areas and perform any remaining Project relocations on behalf of the Non-Federal Sponsor.

5. The Congress, in authorizing the Project, included authority for the Assistant Secretary of the Army (Civil Works) to afford credit for Section 104 work in the estimated amount of $ 5,910,000. The affording of such credit shall be subject to an on-site inspection by the Government to verify that the work was accomplished in a satisfactory manner and is suitable for inclusion in the Project. The actual amount of credit shall be subject to an audit in accordance with Article X.C. of this Agreement to determine reasonableness, allocability, and allowability of costs. To afford such credit, the Government shall apply the credit amount toward any additional cash contribution required under paragraph D.3. of this Article. If the credit amount exceeds the amount of such additional cash contribution, the Government, subject to the availability of funds, shall, on behalf of the Non-Federal Sponsor, provide Project lands, easements, rights-of-way, and suitable borrow and dredged or excavated material disposal areas, or perform Project relocations, equal in value to such excess credit amount. As an alternative, and in its sole discretion, the Government may make a payment to the Non-Federal Sponsor in an amount equal to such excess credit amount, up to the value of contributions under paragraph D.2. of this Article and Articles V, X, and XV.A. of this Agreement. In no event shall the credit amount afforded exceed the lesser of 45 percent of total project costs or the value of the Non-Federal Sponsor's contributions required under paragraphs D.2. and D.3. of this Article

and Articles V, X, and XV.A. of this Agreement.

E. The Non-Federal Sponsor may request the Government to provide lands, easements, rights-of-way, and suitable borrow and dredged or excavated material disposal areas or perform relocations on behalf of the Non-Federal Sponsor. Such requests shall be in writing and shall describe the services requested to be performed. If in its sole discretion the Government elects to perform the requested services or any portion thereof, it shall so notify the Non-Federal Sponsor in a writing that sets forth any applicable terms and conditions, which must be consistent with this Agreement. In the event of conflict between such a writing and this Agreement, this Agreement shall control. The Non-Federal Sponsor shall be solely responsible for all costs of the requested services and shall pay all such costs in accordance with Article VI.C. of this Agreement. Notwithstanding the provision of lands, easements, rights-of-way, and suitable borrow and dredged or excavated material disposal areas or performance of relocations by the Government, the Non-Federal Sponsor shall be responsible, as between the Government and the Non-Federal Sponsor, for the costs of cleanup and response in accordance with Article XV.C. of this Agreement.

F. The Government shall perform a final accounting in accordance with Article VI.D. of this Agreement to determine the contributions provided by the Non-Federal Sponsor in accordance with paragraphs B., D., and E. of this Article and Articles V, X, and XV.A. of this Agreement and to determine whether the Non-Federal Sponsor has met its obligations under paragraphs B., D., and E. of this Article.

G. The Non-Federal Sponsor shall not use Federal funds to meet the Non-Federal Sponsor's share of total project costs under this Agreement unless the Federal granting agency verifies in writing that the expenditure of such funds is expressly authorized by statute.

H. The Non-Federal Sponsor agrees to participate in and comply with applicable Federal floodplain management and flood insurance programs.

I. Not less than once each year the Non-Federal Sponsor shall inform affected interests of the extent of protection afforded by the Project.

J. The Non-Federal Sponsor shall publicize flood plain information in the area concerned and shall provide this information to zoning and other regulatory agencies for their use in preventing unwise future development in the flood plain and in adopting such regulations as may be necessary to prevent unwise future development and to ensure compatibility with protection levels provided by the Project.

K. The Non-Federal Sponsor shall comply with Section 402 of the Water Resources Development Act of 1986, as amended (33 U.S.C. 701b-12), which requires a Non-Federal interest to have prepared within one year after the date of signing this Agreement, a floodplain management plan. The plan shall be designed to reduce the impacts of future flood events in the project area, including but not limited to, addressing those measures to be undertaken by Non-Federal interests to preserve the level of flood protection provided by this Project. As required by Section 402, as amended, the Non-Federal interest shall implement such plan not later than one year after completion of construction of the Project. The Non-Federal Sponsor shall provide an information copy of the plan to the Government upon its preparation.

ARTICLE III - LANDS, RELOCATIONS, DISPOSAL AREAS, AND PUBLIC LAW 91-646 COMPLIANCE

A. The Government, after consultation with the Non-Federal Sponsor, shall determine the lands, easements, and rights-of-way required for the construction, operation, and maintenance of the Project, including those required for relocations, borrow materials, and dredged or excavated material disposal. The Government in a timely manner shall provide the Non-Federal Sponsor with general written descriptions, including maps as appropriate, of the lands, easements, and rights-of-way that the Government determines the Non-Federal Sponsor must provide, in detail

sufficient to enable the Non-Federal Sponsor to fulfill their obligations under this paragraph, and shall provide the Non-Federal Sponsor with a written notice to proceed with acquisition of such lands, easements, and rights-of-way. Prior to the end of the period of construction, the Non-Federal Sponsor shall acquire all lands, easements, and rights-of-way set forth in such descriptions. Furthermore, prior to issuance of the solicitation for each construction contract, the Non-Federal Sponsor shall provide the Government with authorization for entry to all lands, easements, and rights-of-way the Government determines the Non-Federal Sponsor must provide for that contract. For so long as the Project remains authorized, the Non-Federal Sponsor shall ensure that lands, easements, and rights-of-way that the Government determines to be required for the operation and maintenance of the Project and that were provided by the Non-Federal Sponsor are retained in public ownership for uses compatible with the authorized purposes of the Project.

B. The Government, after consultation with the Non-Federal Sponsor, shall determine the improvements required on lands, easements, and rights-of-way to enable the proper disposal of dredged or excavated material associated with the construction, operation, and maintenance of the Project. Such improvements may include, but are not necessarily limited to, retaining dikes, wasteweirs, bulkheads, embankments, monitoring features, stilling basins, and de-watering pumps and pipes. The Government in a timely manner shall provide the Non-Federal Sponsor with general written descriptions of such improvements in detail sufficient to enable the Non-Federal Sponsor to fulfill its obligations under this paragraph, and shall provide the Non-Federal Sponsor with a written notice to proceed with construction of such improvements. Prior to the end of the period of construction, the Non-Federal Sponsor shall provide all improvements set forth in such descriptions. Furthermore, prior to issuance of the solicitation for each Government construction contract, the Non-Federal Sponsor shall prepare plans and specifications for all improvements the Government determines to be required for the proper disposal of dredged or excavated material under that contract, submit such plans and specifications to the Government for approval, and provide such improvements in accordance

with the approved plans and specifications.

C. The Government, after consultation with the Non-Federal Sponsor, shall determine the relocations necessary for the construction, operation, and maintenance of the Project, including those necessary to enable the removal of borrow materials and the proper disposal of dredged or excavated material. The Government in a timely manner shall provide the Non-Federal Sponsor with general written descriptions, including maps as appropriate, of such relocations in detail sufficient to enable the Non-Federal Sponsor to fulfill its obligations under this paragraph, and shall provide the Non-Federal Sponsor with a written notice to proceed with such relocations. Prior to the end of the period of construction, the Non-Federal Sponsor shall perform or ensure the performance of all relocations as set forth in such descriptions. Furthermore, prior to issuance of the solicitation for each Government construction contract, the Non-Federal Sponsor shall prepare or ensure the preparation of plans and specifications for, and perform or ensure the performance of, all relocations the Government determines to be necessary for that contract.

D. The Non-Federal Sponsor in a timely manner shall provide the Government with such documents as are sufficient to enable the Government to determine the value of any contribution provided pursuant to paragraphs A., B., or C. of this Article. Upon receipt of such documents the Government, in accordance with Article IV of this Agreement and in a timely manner, shall determine the value of such contribution, include such value in total project costs, and afford credit for such value toward the Non-Federal Sponsor's share of total project costs.

E. The Non-Federal Sponsor shall comply with the applicable provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, Public Law 91-646, as amended by Title IV of the Surface Transportation and Uniform Relocation Assistance Act of 1987 (Public Law 100-17), and the Uniform Regulations contained in 49 C.F.R. Part 24, in acquiring lands, easements, and rights-of-way required for the construction, operation, and maintenance of the Project, including those necessary for

relocations, borrow materials, and dredged or excavated material disposal, and shall inform all affected persons of applicable benefits, policies, and procedures in connection with said Act.

ARTICLE IV - CREDIT FOR VALUE OF LANDS, RELOCATIONS, AND DISPOSAL AREAS

A. The Non-Federal Sponsor shall receive credit toward its share of total project costs for the value of the lands, easements, rights-of-way, and suitable borrow and dredged or excavated material disposal areas that the Non-Federal Sponsor must provide pursuant to Article III of this Agreement, and for the value of the relocations that the Non-Federal Sponsor must perform or for which it must ensure performance pursuant to Article III of this Agreement. However, the Non-Federal Sponsor shall not receive credit for the value of any lands, easements, rights-of-way, relocations, or borrow and dredged or excavated material disposal areas that have been provided previously as an item of cooperation for another Federal project. The Non-Federal Sponsor also shall not receive credit for the value of lands, easements, rights-of-way, relocations, or borrow and dredged or excavated material disposal areas to the extent that such items are provided using Federal funds unless the Federal granting agency verifies in writing that such credit is expressly authorized by statute.

B. For the sole purpose of affording credit in accordance with this Agreement, the value of lands, easements, and rights-of-way, including those necessary for relocations, borrow materials, and dredged or excavated material disposal, shall be the fair market value of the real property interests, plus certain incidental costs of acquiring those interests, as determined in accordance with the provisions of this paragraph.

1. Date of Valuation. The fair market value of lands, easements, or rights-of-way owned by the Non-Federal Sponsor on the effective date of this Agreement shall be the fair market value of such real property interests as of the date the Non-Federal Sponsor provides

the Government with authorization for entry thereto. However, for lands, easements, or rights-of-way owned by the Non-Federal Sponsor on the effective date of this Agreement that are required for the construction of the Section 104 work, fair market value shall be the value of such real property interests as of the date the Non-Federal Sponsor awards the first construction contract for the Section 104 work, or, if the Non-Federal Sponsor performs the construction with their own labor, the date that the Non-Federal Sponsor begins construction of the Section 104 work. The fair market value of lands, easements, or rights-of-way acquired by the Non-Federal Sponsor after the effective date of this Agreement shall be the fair market value of such real property interests at the time the interests are acquired.

2. General Valuation Procedure. Except as provided in paragraph B.3. of this Article, the fair market value of lands, easements, or rights-of-way shall be determined in accordance with paragraph B.2.a. of this Article, unless thereafter a different amount is determined to represent fair market value in accordance with paragraph B.2.b. of this Article.

   a. The Non-Federal Sponsor shall obtain, for each real property interest, an appraisal that is prepared by a qualified appraiser who is acceptable to the Non-Federal Sponsor and the Government. The appraisal must be prepared in accordance with the applicable rules of just compensation, as specified by the Government. The fair market value shall be the amount set forth in the Non-Federal Sponsor's appraisal, if such appraisal is approved by the Government. In the event the Government does not approve the Non-Federal Sponsor's appraisal, the Non-Federal Sponsor may obtain a second appraisal, and the fair market value shall be the amount set forth in the Non-Federal Sponsor's second appraisal, if such appraisal is approved by the Government. In the event the Government does not approve the Non-Federal Sponsor's

second appraisal, or the Non-Federal Sponsor chooses not to obtain a second appraisal, the Government shall obtain an appraisal, and the fair market value shall be the amount set forth in the Government's appraisal, if such appraisal is approved by the Non-Federal Sponsor. In the event the Non-Federal Sponsor does not approve the Government's appraisal, the Government, after consultation with the Non-Federal Sponsor, shall consider the Government's and the Non-Federal Sponsor's appraisals and determine an amount based thereon, which shall be deemed to be the fair market value.

b. Where the amount paid or proposed to be paid by the Non-Federal Sponsor for the real property interest exceeds the amount determined pursuant to paragraph B.2.a. of this Article, the Government, at the request of the Non-Federal Sponsor, shall consider all factors relevant to determining fair market value and, in its sole discretion, after consultation with the Non-Federal Sponsor, may approve in writing an amount greater than the amount determined pursuant to paragraph B.2.a. of this Article, but not to exceed the amount actually paid or proposed to be paid. If the Government approves such an amount, the fair market value shall be the lesser of the approved amount or the amount paid by the Non-Federal Sponsor, but no less than the amount determined pursuant to paragraph B.2.a. of this Article.

3. Eminent Domain Valuation Procedure. For lands, easements, or rights-of-way acquired by eminent domain proceedings instituted after the effective date of this Agreement, the Non-Federal Sponsor shall, prior to instituting such proceedings, submit to the Government notification in writing of its intent to institute such proceedings and an appraisal of the specific real property interests to be acquired in such proceedings. The Government shall have 60 days after receipt of such a notice and appraisal within which to review the appraisal, if

not previously approved by the Government in writing.

a. If the Government previously has approved the appraisal in writing, or if the Government provides written approval of, or takes no action on, the appraisal within such 60-day period, the Non-Federal Sponsor shall use the amount set forth in such appraisal as the estimate of just compensation for the purpose of instituting the eminent domain proceeding.

b. If the Government provides written disapproval of the appraisal, including the reasons for disapproval, within such 60-day period, the Government and the Non-Federal Sponsor shall consult in good faith to promptly resolve the issues or areas of disagreement that are identified in the Government's written disapproval. If, after such good faith consultation, the Government and the Non-Federal Sponsor agree as to an appropriate amount, then the Non-Federal Sponsor shall use that amount as the estimate of just compensation for the purpose of instituting the eminent domain proceeding. If, after such good faith consultation, the Government and the Non-Federal Sponsor cannot agree as to an appropriate amount, then the Non-Federal Sponsor may use the amount set forth in its appraisal as the estimate of just compensation for the purpose of instituting the eminent domain proceeding.

c. For lands, easements, or rights-of-way acquired by eminent domain proceedings instituted in accordance with sub-paragraph B.3. of this Article, fair market value shall be either the amount of the court award for the real property interests taken, to the extent the Government determined such interests are required for the construction, operation, and maintenance of the Project, or the amount of any stipulated settlement or portion thereof that the Government approves in writing.

4. Incidental Costs. For lands, easements, or rights-of-way acquired by the Non-Federal Sponsor within a five-year period preceding the effective date of this Agreement, or at any time after the effective date of this Agreement, the value of the interest shall include the documented incidental costs of acquiring the interest, as determined by the Government, subject to an audit in accordance with Article X.C. of this Agreement to determine reasonableness, allocability, and allowability of costs. Such incidental costs shall include, but not necessarily be limited to, closing and title costs, appraisal costs, survey costs, attorney's fees, plat maps, and mapping costs, as well as the actual amounts expended for payment of any Public Law 91-646 relocation assistance benefits provided in accordance with Article III.E. of this Agreement.

C. After consultation with the Non-Federal Sponsor, the Government shall determine the value of relocations in accordance with the provisions of this paragraph.

1. For a relocation other than a highway, the value shall be only that portion of relocation costs that the Government determines is necessary to provide a functionally equivalent facility, reduced by depreciation, as applicable, and by the salvage value of any removed items.

2. For a relocation of a highway, the value shall be only that portion of relocation costs that would be necessary to accomplish the relocation in accordance with the design standard that the State of California would apply under similar conditions of geography and traffic load, reduced by the salvage value of any removed items.

3. Relocation costs shall include, but not necessarily be limited to, actual costs of performing the relocation; planning, engineering and design costs; supervision and administration costs; and documented incidental costs associated with performance of the relocation, but shall not include any costs due to betterments, as determined by the

Government, nor any additional cost of using new material when suitable used material is available. Relocation costs shall be subject to an audit in accordance with Article X.C. of this Agreement to determine reasonableness, allocability, and allowability of costs.

4. Any credit afforded for the value of relocations performed within the Project boundaries is subject to satisfactory compliance with applicable Federal labor laws covering non-Federal construction, including, but not limited to, 40 U.S.C. 3141-3148 and 40 U.S.C. 3701-3708 (revising, codifying and enacting without substantive change the provisions of the Davis-Bacon Act (formerly 40 U.S.C. 276a *et seq.*), the Contract Work Hours and Safety Standards Act (formerly 40 U.S.C. 327 *et seq.*) and the Copeland Anti-Kickback Act (formerly 40 U.S.C. 276c)). Crediting may be withheld, in whole or in part, as a result of the Non-Federal Sponsor's failure to comply with its obligations under these laws.

D. The value of the improvements made to lands, easements, and rights-of-way for the proper disposal of dredged or excavated material shall be the costs of the improvements, as determined by the Government, subject to an audit in accordance with Article X.C. of this Agreement to determine reasonableness, allocability, and allowability of costs. Such costs shall include, but not necessarily be limited to, actual costs of providing the improvements; planning, engineering and design costs; supervision and administration costs; and documented incidental costs associated with providing the improvements, but shall not include any costs due to betterments, as determined by the Government.

ARTICLE V - PROJECT COORDINATION TEAM

A. To provide for consistent and effective communication, the Non-Federal Sponsor and the Government, not later than 30 days after the effective date of this Agreement, shall appoint named senior representatives to a Project Coordination Team. Thereafter, the Project Coordination Team shall meet

regularly until the end of the period of construction. The Government's Project Manager and a counterpart named by the Non-Federal Sponsor shall co-chair the Project Coordination Team.

B. The Government's Project Manager and the Non-Federal Sponsor's counterpart shall keep the Project Coordination Team informed of the progress of construction and of significant pending issues and actions, and shall seek the views of the Project Coordination Team on matters that the Project Coordination Team generally oversees.

C. Until the end of the period of construction, the Project Coordination Team shall generally oversee the Project, including issues related to design; plans and specifications; scheduling; real property and relocation requirements; real property acquisition; contract awards and modifications; contract costs; the application of and compliance with 40 U.S.C. 3141-3148 and 40 U.S.C. 3701-3708 (revising, codifying and enacting without substantive change the provisions of the Davis-Bacon Act (formerly 40 U.S.C. 276a et seq.), the Contract Work Hours and Safety Standards Act (formerly 40 U.S.C. 327 et seq.) and the Copeland Anti-Kickback Act (formerly 40 U.S.C. 276c)) for relocations; the Government's cost projections; final inspection of the entire Project or functional portions of the Project; preparation of the proposed OMRR&R Manual; anticipated requirements and needed capabilities for performance of operation, maintenance, repair, replacement, and rehabilitation of the Project; and other related matters. This oversight shall be consistent with a project management plan developed by the Government after consultation with the Non-Federal Sponsor.

D. The Project Coordination Team may make recommendations that it deems warranted to the District Engineer on matters that the Project Coordination Team generally oversees, including suggestions to avoid potential sources of dispute. The Government in good faith shall consider the recommendations of the Project Coordination Team. The Government, having the legal authority and responsibility for construction of the Project, has the discretion to accept, reject, or modify the Project Coordination

Team's recommendations.

E. The costs of participation in the Project Coordination Team shall be included in total project costs and cost shared in accordance with the provisions of this Agreement.

ARTICLE VI - METHOD OF PAYMENT

A. The Government shall maintain current records of contributions provided by the parties and current projections of total project costs and costs due to betterments. By **April 1st** of each year and at least quarterly thereafter, the Government shall provide the Non-Federal Sponsor with a report setting forth all contributions provided to date and the current projections of total project costs, of total costs due to betterments, of the maximum amount of total project costs determined in accordance with Article XIX of this Agreement, of the components of total project costs, of each party's share of total project costs, of the Non-Federal Sponsor's total cash contributions required in accordance with Articles II.B., II.D., and II.E. of this Agreement, of the non-Federal proportionate share, and of the funds the Government projects to be required from the Non-Federal Sponsor for the upcoming fiscal year. On the effective date of this Agreement, total project costs are projected to be $86,390,000 and the Non-Federal Sponsor's cash contribution required under Article II.D. of this Agreement is projected to be $21,747,000. Such amounts are estimates subject to adjustment by the Government and are not to be construed as the total financial responsibilities of the Government and the Non-Federal Sponsor.

B. The Non-Federal Sponsor shall provide the cash contribution required under Articles II.D.1. and II.D.3. of this Agreement in accordance with the provisions of this paragraph.

1. Not less than 30 calendar days prior to the scheduled date for issuance of the solicitation for the first construction contract, the Government shall notify the Non-Federal Sponsor in writing of such

scheduled date and the funds the Government, after consideration of any credit afforded pursuant to Article II.D.5. of this Agreement, determines to be required from the Non-Federal Sponsor to meet the non-Federal proportionate share of projected financial obligations for construction on a quarterly basis, including the non-Federal proportionate share of financial obligations for construction incurred prior to the commencement of the period of construction. Not later than such scheduled date, the Non-Federal Sponsor shall provide the Government with the full amount of the required funds by delivering a check payable to "FAO, USAED, Sacramento" to the District Engineer or verifying to the satisfaction of the Government that the Non-Federal Sponsor has deposited the required funds in an escrow or other account acceptable to the Government, with interest accruing to the Non-Federal Sponsor or presenting the Government with an irrevocable letter of credit acceptable to the Government for the required funds or providing an Electronic Funds Transfer in accordance with procedures established by the Government.

2. For the second and subsequent quarters of construction, the Government shall notify the Non-Federal Sponsor in writing, no later than 60 calendar days prior to the beginning of that quarter, of the funds the Government, after consideration of any credit afforded pursuant to Article II.D.5. of this Agreement, determines to be required from the Non-Federal Sponsor to meet the non-Federal proportionate share of projected financial obligations for construction for that quarter. No later than 30 calendar days prior to the beginning of the quarter, the Non-Federal Sponsor shall make the full amount of the required funds for that quarter available to the Government through any of the payment mechanisms specified in Article VI.B.1. of this Agreement.

3. The Government shall draw from the funds provided by the Non-Federal Sponsor such sums as the Government, after consideration of any credit afforded pursuant to Article II.D.5.and of this Agreement, deems necessary to cover: (a) the non-Federal

proportionate share of financial obligations for construction incurred prior to the commencement of the period of construction; and (b) the non-Federal proportionate share of financial obligations for construction as they are incurred during the period of construction.

4. If at any time during the period of construction the Government determines that additional funds will be needed from the Non-Federal Sponsor to cover the non-Federal proportionate share of projected financial obligations for construction for the current quarter, the Government shall notify the Non-Federal Sponsor in writing of the additional funds required, and provide an explanation of why additional funds are required, and the Non-Federal Sponsor, no later than **60** calendar days from receipt of such notice, shall make the additional required funds for that quarter available through any of the payment mechanisms specified in Article VI.B.1. of this Agreement.

C. In advance of the Government incurring any financial obligation associated with additional work under Article II.B. or II.E. of this Agreement, the Non-Federal Sponsor shall provide the Government with the full amount of the funds required to pay for such additional work on a quarterly basis by delivering a check payable to "FAO, USAED, Sacramento" to the District Engineer. The Government shall draw from the funds provided by the Non-Federal Sponsor such sums as the Government deems necessary to cover the Government's financial obligations for such additional work as they are incurred. In the event the Government determines that the Non-Federal Sponsor must provide additional funds to meet its cash contribution, the Government shall notify the Non-Federal Sponsor in writing of the additional funds required. Within 30 calendar days thereafter, the Non-Federal Sponsor shall provide the Government with a check for the full amount for that quarter of the additional required funds.

D. Upon completion of the Project or termination of this Agreement, and upon resolution of all relevant claims and appeals, the Government shall conduct a final accounting and furnish the Non-Federal Sponsor with the results of the final accounting. The final accounting shall determine total project

costs, each party's contribution provided thereto, and each party's required share thereof. The final accounting also shall determine costs due to betterments and the Non-Federal Sponsor's cash contribution provided pursuant to Article II.B. of this Agreement.

1. In the event the final accounting shows that the total contribution provided by the Non-Federal Sponsor is less than its required share of total project costs plus costs due to any betterments provided in accordance with Article II.B. of this Agreement, the Non-Federal Sponsor shall, no later than 90 calendar days after receipt of written notice, make a cash payment to the Government of whatever sum is required to meet the Non-Federal Sponsor's required share of total project costs plus costs due to any betterments provided in accordance with Article II.B. of this Agreement.

2. In the event the final accounting shows that the total contribution provided by the Non-Federal Sponsor exceeds its required share of total project costs plus costs due to any betterments provided in accordance with Article II.B. of this Agreement, the Government shall, subject to the availability of funds, refund the excess to the Non-Federal Sponsor no later than 90 calendar days after the final accounting is complete; however, the Non-Federal Sponsor shall not be entitled to any refund of the 5 percent cash contribution required pursuant to Article II.D.1. of this Agreement. In the event existing funds are not available to refund the excess to the Non-Federal Sponsor, the Government shall seek such appropriations as are necessary to make the refund.

ARTICLE VII - DISPUTE RESOLUTION

As a condition precedent to a party bringing any suit for breach of this Agreement, that party must first notify the other party in writing of the nature of the purported breach and seek in good faith to resolve the dispute through negotiation. If the parties cannot resolve the dispute through negotiation, they may agree to a mutually acceptable method of non-binding alternative dispute resolution with a qualified third

party acceptable to both parties. The parties shall each pay 50 percent of any costs for the services provided by such a third party as such costs are incurred. The existence of a dispute shall not excuse the parties from performance pursuant to this Agreement.

ARTICLE VIII - OPERATION, MAINTENANCE, REPAIR, REPLACEMENT, AND REHABILITATION (OMRR&R)

A. Upon notification in accordance with Article II.C. of this Agreement and for so long as the Project remains authorized, the Non-Federal Sponsor shall operate, maintain, repair, replace, and rehabilitate the entire Project or the functional portion of the Project, at no cost to the Government, in a manner compatible with the Project's authorized purposes and in accordance with applicable Federal and State laws as provided in Article XI of this Agreement and specific directions prescribed by the Government in the OMRR&R Manual and any subsequent amendments thereto.

B. The Non-Federal Sponsor hereby gives the Government a right to enter, at reasonable times and in a reasonable manner, upon property that the Non-Federal Sponsor owns or controls for access to the Project for the purpose of inspection and, if necessary, for the purpose of completing, operating, maintaining, repairing, replacing, or rehabilitating the Project. If an inspection shows that the Non-Federal Sponsor for any reason is failing to perform its obligations under this Agreement, the Government shall send a written notice describing the non-performance to the Non-Federal Sponsor. If, after 30 calendar days from receipt of notice, the Non-Federal Sponsor continues to fail to perform, then the Government shall have the right to enter, at reasonable times and in a reasonable manner, upon property that the Non-Federal Sponsor owns or controls for access to the Project for the purpose of completing, operating, maintaining, repairing, replacing, or rehabilitating the Project. No completion, operation, maintenance, repair, replacement, or rehabilitation by the Government shall operate to relieve the Non-Federal Sponsor of responsibility to meet the Non-Federal Sponsor's obligations as set forth in this Agreement, or to preclude the Government from pursuing any other remedy at law or equity to ensure

faithful performance pursuant to this Agreement.

ARTICLE IX - INDEMNIFICATION

The Non-Federal Sponsor shall hold and save the Government free from all damages arising from the construction, operation, maintenance, repair, replacement, and rehabilitation of the Project and any Project related betterments, except for damages due to the fault or negligence of the Government or its contractors.

ARTICLE X - MAINTENANCE OF RECORDS AND AUDIT

A. Not later than 60 calendar days after the effective date of this Agreement, the Government and the Non-Federal Sponsor shall develop procedures for keeping books, records, documents, and other evidence pertaining to costs and expenses incurred pursuant to this Agreement. These procedures shall incorporate, and apply as appropriate, the standards for financial management systems set forth in the Uniform Administrative Requirements for Grants and Cooperative Agreements to State and Local Governments at 32 C.F.R. Section 33.20. The Government and the Non-Federal Sponsor shall maintain such books, records, documents, and other evidence in accordance with these procedures and for a minimum of three years after the period of construction and resolution of all relevant claims arising therefrom. To the extent permitted under applicable Federal laws and regulations, the Government and the Non-Federal Sponsor shall allow mutual examination and audit of books, documents, records, and other evidence for a period of three years after final payment of this agreement.

B. Pursuant to 32 C.F.R. Section 33.26, the Non-Federal Sponsor is responsible for complying with the Single Audit Act of 1984, 31 U.S.C. Sections 7501-7507, as implemented by Office of Management and Budget (OMB) Circular No. A-133 and Department of Defense Directive 7600.10. Upon request of the Non-Federal Sponsor and to the extent permitted under applicable Federal laws and regulations, the Government shall

provide to the Non-Federal Sponsor and independent auditors any information necessary to enable an audit of the Non-Federal Sponsor's activities under this Agreement. The costs of any non-Federal audits performed in accordance with this paragraph shall be allocated in accordance with the provisions of OMB Circulars A-87 and A-133, and such costs as are allocated to the Project shall be included in total project costs and cost shared in accordance with the provisions of this Agreement.

C. In accordance with 31 U.S.C. Section 7503, the Government may conduct audits in addition to any audit that the Non-Federal Sponsor is required to conduct under the Single Audit Act. Any such Government audits shall be conducted in accordance with Government Auditing Standards and the cost principles in OMB Circular No. A-87 and other applicable cost principles and regulations. The costs of Government audits performed in accordance with this paragraph shall be included in total project costs and cost shared in accordance with the provisions of this Agreement.

ARTICLE XI - FEDERAL AND STATE LAWS

In the exercise of their respective rights and obligations under this Agreement, the Non-Federal Sponsor and the Government agree to comply with all applicable Federal and State laws and regulations, including, but not limited to: Section 601 of the Civil Rights Act of 1964, Public Law 88-352 (42 U.S.C. 2000d) and Department of Defense Directive 5500.11 issued pursuant thereto; Army Regulation 600-7, entitled "Nondiscrimination on the Basis of Handicap in Programs and Activities Assisted or Conducted by the Department of the Army"; and all applicable Federal labor standards requirements including, but not limited to, 40 U.S.C. 3141-3148 and 40 U.S.C. 3701-3708 (revising, codifying and enacting without substantive change the provisions of the Davis-Bacon Act (formerly 40 U.S.C. 276a et seq.), the Contract Work Hours and Safety Standards Act (formerly 40 U.S.C. 327 et seq.) and the Copeland Anti-Kickback Act (formerly 40 U.S.C. 276c)).

ARTICLE XII - RELATIONSHIP OF PARTIES

A. In the exercise of their respective rights and obligations under this Agreement, the Government and the Non-Federal Sponsor each act in an independent capacity, and neither is to be considered the officer, agent, or employee of the other.

B. In the exercise of its rights and obligations under this Agreement, neither party shall provide, without the consent of the other party, any contractor with a release that waives or purports to waive any rights such other party may have to seek relief or redress against such contractor either pursuant to any cause of action that such other party may have or for violation of any law.

ARTICLE XIII - OFFICIALS NOT TO BENEFIT

No member of or delegate to the Congress, nor any resident commissioner, shall be admitted to any share or part of this Agreement, or to any benefit that may arise therefrom.

ARTICLE XIV - TERMINATION OR SUSPENSION

A. If at any time the Non-Federal Sponsor fails to fulfill its obligations under Article II.B., II.D., II.E., VI, or XVIII.C. of this Agreement, the Assistant Secretary of the Army (Civil Works) shall terminate this Agreement or suspend future performance under this Agreement unless he determines that continuation of work on the Project is in the interest of the United States or is necessary in order to satisfy agreements with any other non-Federal interests in connection with the Project.

B. If the Government fails to receive annual appropriations in amounts sufficient to meet Project expenditures for the then-current or upcoming fiscal year, the Government shall so notify the Non-Federal Sponsor in writing, and 60 calendar days thereafter either party may elect without penalty to terminate this Agreement or to suspend future performance

under this Agreement. In the event that either party elects to suspend future performance under this Agreement pursuant to this paragraph, such suspension shall remain in effect until such time as the Government receives sufficient appropriations or until either the Government or the Non-Federal Sponsor elects to terminate this Agreement.

C. In the event that either party elects to terminate this Agreement pursuant to this Article or Article XV of this Agreement, both parties shall conclude their activities relating to the Project and proceed to a final accounting in accordance with Article VI.D. of this Agreement.

D. Any termination of this Agreement or suspension of future performance under this Agreement in accordance with this Article or Article XV of this Agreement shall not relieve the parties of liability for any obligation previously incurred. Any delinquent payment shall be charged interest at a rate, to be determined by the Secretary of the Treasury, equal to 150 per centum of the average bond equivalent rate of the 13-week Treasury bills auctioned immediately prior to the date on which such payment became delinquent, or auctioned immediately prior to the beginning of each additional 3-month period if the period of delinquency exceeds 3 months.

ARTICLE XV - HAZARDOUS SUBSTANCES

A. After execution of this Agreement and upon direction by the District Engineer, the Non-Federal Sponsor shall perform, or cause to be performed, any investigations for hazardous substances that the Government or the Non-Federal Sponsor determines to be necessary to identify the existence and extent of any hazardous substances regulated under the Comprehensive Environmental Response, Compensation, and Liability Act (hereinafter "CERCLA"), 42 U.S.C. Sections 9601-9675, that may exist in, on, or under lands, easements, and rights-of-way that the Government determines, pursuant to Article III of this Agreement, to be required for the construction, operation, and maintenance of the Project. However, for lands that the Government determines to be subject to the

navigation servitude, only the Government shall perform such investigations unless the District Engineer provides the Non-Federal Sponsor with prior specific written direction, in which case the Non-Federal Sponsor shall perform such investigations in accordance with such written direction. All actual costs incurred by the Non-Federal Sponsor for such investigations for hazardous substances shall be included in total project costs and cost shared in accordance with the provisions of this Agreement, subject to an audit in accordance with Article X.C. of this Agreement to determine reasonableness, allocability, and allowability of costs.

B. In the event it is discovered through any investigation for hazardous substances or other means that hazardous substances regulated under CERCLA exist in, on, or under any lands, easements, or rights-of-way that the Government determines, pursuant to Article III of this Agreement, to be required for the construction, operation, and maintenance of the Project, the Non-Federal Sponsor and the Government shall provide prompt written notice to each other, and the Non-Federal Sponsor shall not proceed with the acquisition of the real property interests until both parties agree that the Non-Federal Sponsor should proceed.

C. The Government and the Non-Federal Sponsor shall determine whether to initiate construction of the Project, or, if already in construction, whether to continue with work on the Project, suspend future performance under this Agreement, or terminate this Agreement for the convenience of the Government, in any case where hazardous substances regulated under CERCLA are found to exist in, on, or under any lands, easements, or rights-of-way that the Government determines, pursuant to Article III of this Agreement, to be required for the construction, operation, and maintenance of the Project. Should the Government and the Non-Federal Sponsor determine to initiate or continue with construction after considering any liability that may arise under CERCLA, the Non-Federal Sponsor shall be responsible, as between the Government and the Non-Federal Sponsor, for the costs of clean-up and response, to include the costs of any studies and investigations necessary to determine an appropriate response to the contamination. Such costs shall not be considered a part of total project

costs. In the event the Non-Federal Sponsor fails to provide any funds necessary to pay for clean up and response costs or to otherwise discharge the Non-Federal Sponsor's responsibilities under this paragraph upon direction by the Government, the Government may, in its sole discretion, either terminate this Agreement for the convenience of the Government, suspend future performance under this Agreement, or continue work on the Project.

D. The Non-Federal Sponsor and the Government shall consult with each other in accordance with Article V of this Agreement in an effort to ensure that responsible parties bear any necessary clean up and response costs as defined in CERCLA. Any decision made pursuant to paragraph C. of this Article shall not relieve any third party from any liability that may arise under CERCLA.

E. As between the Government and the Non-Federal Sponsor, the Non-Federal Sponsor shall be considered the operator of the Project for purposes of CERCLA liability. To the maximum extent practicable, the Non-Federal Sponsor shall operate, maintain, repair, replace, and rehabilitate the Project in a manner that will not cause liability to arise under CERCLA.

ARTICLE XVI - NOTICES

A. Any notice, request, demand, or other communication required or permitted to be given under this Agreement shall be deemed to have been duly given if in writing and either delivered personally or by telegram or mailed by first-class, registered, or certified mail, as follows:

If to the Non-Federal Sponsor: The State of California
The Reclamation Board
P.O. Box 942836
Sacramento, CA 94236-0001

If to the Government: USAED, Sacramento

1325 J Street
Sacramento, CA 95814-2922

B. A party may change the address to which such communications are to be directed by giving written notice to the other party in the manner provided in this Article.

C. Any notice, request, demand, or other communication made pursuant to this Article shall be deemed to have been received by the addressee at the earlier of such time as it is actually received or seven calendar days after it is mailed.

ARTICLE XVII - CONFIDENTIALITY

To the extent permitted by the laws governing each party, the parties agree to maintain the confidentiality of exchanged information when requested to do so by the providing party.

ARTICLE XVIII - HISTORIC PRESERVATION

A. The costs of identification, survey and evaluation of historic properties shall be included in total project costs and cost shared in accordance with the provisions of this Agreement.

B. As specified in Section 7(a) of Public Law 93-291 (16 U.S.C. Section 469c(a)), the costs of mitigation and data recovery activities associated with historic preservation shall be borne entirely by the Government and shall not be included in total project costs, up to the statutory limit of one percent of the total amount authorized to be appropriated for the Project.

C. The Government shall not incur costs for mitigation and data recovery that exceed the statutory one percent limit specified in paragraph B. of this Article unless and until the Assistant Secretary of the Army (Civil Works)

has waived that limit in accordance with Section 208(3) of Public Law 96-515 (16 U.S.C. Section 469c-2(3)). Any costs of mitigation and data recovery that exceed the one percent limit shall not be included in total project costs but shall be cost shared between the Non-Federal Sponsor and the Government consistent with the minimum non-Federal cost sharing requirements for the underlying flood control purpose, as follows: 35 percent borne by the Non-Federal Sponsor, and 65 percent borne by the Government.

ARTICLE XIX - SECTION 902 PROJECT COST LIMITS

The Non-Federal Sponsor has reviewed the provisions set forth in Section 902 of Public Law 99-662, as amended, and understands that Section 902 establishes the maximum amount of total project costs for South Sacramento County Streams, California. The Section 902 limitation is a common value for the entire South Sacramento County Streams project authorization and applies to all project elements in aggregate regardless of separate Project Cooperation Agreements. Notwithstanding any other provision of this Agreement, the Government shall not make a new Project financial obligation, make a Project expenditure, or afford credit toward total project costs for the value of any contribution provided by the Non-Federal Sponsor, if such obligation, expenditure, or credit would result in total project costs exceeding this maximum amount, unless otherwise authorized by law. On the effective date of this Agreement, this maximum amount is estimated to be $93,692,000 as calculated in accordance with ER 1105-2-100 using October 1, 2004 price levels and allowances for projected future inflation. The Government shall adjust this maximum amount in accordance with Section 902.

ARTICLE XX -OBLIGATIONS OF FUTURE APPROPRIATIONS

A. Nothing herein shall constitute, nor be deemed to constitute, an obligation of future appropriations by the Legislature of the State of California, where creating such an obligation would be inconsistent with Article XVI, Section 1 of the Constitution.

B. The Non-Federal Sponsor intends to satisfy its obligations under this Agreement. The Non-Federal Sponsor shall include in its budget request or otherwise propose, for each fiscal period, appropriations sufficient to cover the Non-Federal Sponsor's obligations under this Agreement for each year, and will use all reasonable and lawful means to secure the appropriations for that year sufficient to make the payments necessary to fulfill its obligations hereunder. The Non-Federal Sponsor reasonably believes that funds in amounts sufficient to discharge these obligations can and will lawfully be appropriated and made available for this purpose. In the event the budget or other means of appropriations does not provide funds in sufficient amounts to discharge these obligations, the Non-Federal Sponsor shall use its best efforts to satisfy any requirements for payments under this Agreement from any other source of funds legally available for this purpose. Further, if the Non-Federal Sponsor is unable to satisfy its obligations hereunder, the Government may exercise any legal rights it has to protect the Government's interests related to this Agreement.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement, which shall become effective upon the date it is signed by the District Engineer.

THE DEPARTMENT OF THE ARMY

BY: Ronald N. Light

Ronald N. Light
Colonel, Corps of Engineers
District Engineer

DATE: 5/20/05

THE STATE OF CALIFORNIA,
THE RECLAMATION BOARD

BY: Betsy A. Marchand

Betsy Marchand
President
The Reclamation Board

DATE: 4/5/05

Approved as to legal form and sufficiency:

Asst Chief Counsel, DWR

CERTIFICATE OF AUTHORITY

I, Scott Morgan, do hereby certify that I am the principal legal officer of the State of California, The Reclamation Board, that The Reclamation Board is a legally constituted public body with full authority and legal capability to perform the terms of the Agreement between the Department of the Army and the State of California, The Reclamation Board and the Sacramento Area Flood Control Agency in connection with the South Sacramento County Stream, CA, and to pay damages in accordance with the terms of this Agreement, if necessary, in the event of the failure to perform, as required by Section 221 of Public Law 91-611 (42 U.S.C. Section 1962d-5b), and that the persons who have executed this Agreement on behalf of the State of California, The Reclamation Board have acted within their statutory authority.

IN WITNESS WHEREOF, I have made and executed this certification this 28th day of March 2005.

Scott R. Morgan

Scott Morgan
Counsel
The Reclamation Board

CERTIFICATION REGARDING LOBBYING

The undersigned certifies, to the best of his or her knowledge and belief that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

BY: Stephen T. Bradley DATE: 4-19-05
for Peter Rabbon, General Manager
State of California, The Reclamation Board

BUDGET DETAIL AND PAYMENT PROVISIONS

I. INVOICING AND PAYMENT: Method of payment shall be in accordance with provisions stated in Article VI on page 13 of this Agreement.

II. BUDGET CONTINGENCY CLAUSE: It is mutually agreed that if the Budget Act of the current year and/or any subsequent years covered under this Agreement does not appropriate sufficient funds for the program, this Agreement shall be of no further force and effect. In this event, the State shall have no liability to pay any funds whatsoever to Contractor or to furnish any other considerations under this Agreement and Contractor shall not be obligated to perform any provisions of this Agreement.

If funding for any fiscal year is reduced or deleted by the Budget Act for purposes of this program, the State shall have the option to either: cancel this Agreement with no liability occurring to the State, or offer an Agreement Amendment to Contractor to reflect the reduced amount.

EXHIBIT –Special Terms and Conditions for Department Of Water Resources (Department of the Army Corps of Engineers)

1. AVAILABILITY OF FUNDS: Work to be performed under this contract is subject to availability of funds through the State's normal budget process.

2. AUDIT CLAUSE: For contracts in excess of $10,000, the contracting parties shall be subject to the examination and audit of the State Auditor for a period of three years after final payment under the contract (Government Code Section 8546.7).

3. CONFLICT OF INTEREST:

   a. Current and Former State Employees: Contractor should be aware of the following provisions regarding current or former state employees. If Contractor has any questions on the status of any person rendering services or involved with the Agreement, the awarding agency must be contacted immediately for clarification.

      (1) Current State Employees: (PCC §10410)

         (a) No officer or employee shall engage in any employment, activity or enterprise from which the officer or employee receives compensation or has a financial interest and which is sponsored or funded by any state agency, unless the employment, activity or enterprise is required as a condition of regular state employment.

         (b) No officer or employee shall contract on his or her own behalf as an independent contractor with any state agency to provide goods or services.

      (2) Former State Employees: (PCC §10411)

         (a) For the two-year period from the date he or she left state employment, no former state officer or employee may enter into a contract in which he or she engaged in any of the negotiations, transactions, planning, arrangements or any part of the decision-making process relevant to the contract while employed in any capacity by any state agency.

         (b) For the twelve-month period from the date he or she left state employment, no former state officer or employee may enter into a contract with any state agency if he or she was employed by that state agency in a policy-making position in the same general subject area as the proposed contract within the 12-month period prior to his or her leaving state service.

   b. Penalty for Violation:

      (a) If the Contractor violates any provisions of above paragraphs, such action by Contractor shall render this Agreement void. (PCC §10420)

   c. Members of Boards and Commissions:

      (a) Members of boards and commissions are exempt from this section if they do not receive payment other than payment of each meeting of the board or commission, payment for preparatory time and payment for per diem. (PCC §10430 (e)

d. Representational Conflicts of Interest:

The Contractor must disclose to the DWR Program Manager any activities by contractor or subcontractor personnel involving representation of parties, or provision of consultation services to parties, who are adversarial to DWR. DWR may immediately terminate this contract if the contractor fails to disclose the information required by this section. DWR may immediately terminate this contract if any conflicts of interest cannot be reconciled with the performance of services under this contract.

e. Financial Interest in Contracts:

Contractor should also be aware of the following provisions of Government Code §1090:

"Members of the Legislature, state, county district, judicial district, and city officers or employees shall not be financially interested in any contract made by them in their official capacity, or by any body or board of which they are members. Nor shall state, county, district, judicial district, and city officers or employees be purchasers at any sale or vendors at any purchase made by them in their official capacity."

f. Prohibition for Consulting Services Contracts:

For consulting services contracts (see PCC §10335.5), the Contractor and any subcontractors (except for subcontractors who provide services amounting to 10 percent or less of the contract price) may not submit a bid/SOQ, or be awarded a contract, for the provision of services, procurement of goods or supplies or any other related action which is required, suggested, or otherwise deemed appropriate in the end product of such a consulting services contract (see PCC § 10365.5).

Attachment D - USACE Letter to the Board

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CALIFORNIA 95814-2922

REPLY TO
ATTENTION OF

Flood Protection and Navigation Section

JUN 22 2015

Ms. Leslie M. Gallagher
Acting Executive Officer, Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, California 95821

Dear Ms. Gallagher:

This letter is to serve as a Notice of Project Completion for Contracts 1A, 1B1, 1B2, and 2A transferring the completed elements to the Central Valley Flood Protection Board (CVFPB) for Operation, Maintenance, Repair, Replacement, and Rehabilitation (OMRR&R). The work was completed under the "Project Cooperation Agreement Between The Department of the Army and the State of California, The Reclamation Board for Construction of the South Sacramento County Streams, CA, San Joaquin River Basin, Flood Control Project," dated May 20, 2005. The South Sacramento County Streams project was authorized by Section 101(a)(8) of the Water Resources Development Act of 1999 (Public Law 106-53).

The completed work is hereby transferred to the CVFPB for OMRR&R in accordance with the enclosed paper copy of the Interim OMRR&R manual. "As-built" drawings are on the enclosed CD. Consultation with the U.S. Fish and Wildlife Service (USFWS) is on-going for potential Giant Garter Snake impacts caused by grouting of rodent burrows as currently required by this OMRR&R manual. Should a rodent burrow be discovered during inspection, please contact this office for coordination with the USFWS. This letter of acceptance into the Federal flood risk reduction system should not be construed as an endorsement for inclusion into the National Flood Insurance Program as outlined in Title 44 of the Code of Federal Regulations Section 65.10 of the National Flood Insurance Regulations (44 CFR Section 65.10).

Please contact Mr. Marshall Marik, Project Manager, at (916) 557-7698 regarding any project questions you may have; Mr. Ryan Larson at (916) 557-7568, Flood Protection and Navigation Section is available to answer transfer questions.

Sincerely,

Michael J. Farrell
Colonel, U.S. Army
District Commander

Enclosure

Attachment D - USACE Letter to the Board

U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT

STAFF ACTION SUMMARY SHEET

The proponent agency is CESPK-DE

INITIATION DATE: 04/17/2015

SUSPENSE DATE: 05/01/2015

CLASSIFICATION: UNCLASSIFIED

ACTION TO BE TAKEN:

☐ INFORMATION ☒ DECISION/APPROVAL ☐ OTHER

EXECUTIVE OFFICE USE ONLY

ISSUE ID NUMBER

SUBJECT: North Beach Lake Levee Notice of Completion Letter

FINAL APPROVAL NEEDED FROM: ☐ DDC ☐ DPM ☒ DE

PURPOSE:

Formal notification to the CVFPB of OMRR&R responsibilities for the North Beach Lake Levee (NBLL) segment of the South Sac Streams project.

BACKGROUND/DISCUSSION:

The NBLL design was performed by the CVFPB/SAFCA as part of Section 104 crediting, but was constructed by SPK in 2005/2006. The manual was unable to be completed until now, due to the presence of nine 100 year-old oak trees left in the slope as designed. ~~Language regarding vegetation has been incorporated into the manual for the CVFPB to prepare a SWIF~~.

RECOMMENDATION:

Please review and approve.

COORDINATION

OFF. SYMBOL	NAME	DATE IN	DATE OUT	INITIALS	OFF. SYMBOL	NAME	DATE IN	DATE OUT	INITIALS
SPK-ED-D	Rick Torbik	23-Apr	23-Apr	RT					
SPK-ED-D	Will Hall	4/22/15	4/22/15	WH					
SPK-ED	Rick Poeppelman	4/22/15	4/22/15	SJR					
SPK-CO-O	Randy Olsen	4/22/15	5/15/15	RO					
SPK-OC	~~Alarice Hansberry~~ Carolyn Alexander	6/8/15	6/10/15	CA					

POSITION	NAME	DATE IN	DATE OUT	INITIALS	POSITION	NAME	DATE IN	DATE OUT	INITIALS
ACTION OFFICER (AO)	Marshall Marik	17-Apr	17-Apr		EXECUTIVE ASSISTANT	J. Mijares	10 Jun	12 Jun	
AO SECTION CHIEF	Veronica Petrovsky	17 Apr	17 Apr		DEPUTY COMMANDER	MAJ Palazzini	12 Jun	15 Jun	
AO BRANCH CHIEF	Nicole Ortega-Jewell	20 Apr 15	20 Apr 15		DPM	T. Eller	16 Jun	16 Jun	
AO DIVISION CHIEF					COMMANDER	COL Farrell		19 Jun	
EXECUTIVE SECRETARY	P. Mizia	10 Jun	10 Jun						

POC FOR PICK UP:

NAME Marshall Marik PHONE 916-557-7698

or Marissa Cruz x6898

SOUTH SACRAMENTO COUNTY STREAMS, CALIFORNIA
SAN JOAQUIN RIVER BASIN FLOOD CONTROL PROJECT

INTERIM OPERATION, MAINTENANCE, REPAIR, REPLACEMENT, & REHABILITATION MANUAL

June 2015

U. S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

TABLE OF CONTENTS

EXHIBITS V

ACRONYMS & ABBREVIATIONS VI

SECTION 1 1

GENERAL 1

1.1 BACKGROUND 1
1.2 PURPOSE 1
1.3 ORGANIZATION 2
1.4 REFERENCES TO APPROVED REGULATIONS 2

SECTION 2 3

AUTHORIZATION 3

2.1 AUTHORIZING LEGISLATION 3
2.2 RELEVANT REPORTS AND AGREEMENTS 3

SECTION 3 4

LOCATION 4

3.1 LOCATION 4
3.2 STUDY AREA 4
3.3 WATERSHED 4
3.3.1 UPPER BASIN - MORRISON CREEK STREAM GROUP 4
3.3.2 LOWER BASIN - BEACH-STONE LAKES 4

SECTION 4 5

PERTINENT INFORMATION 5

4.1 PURPOSE 5
4.2 HISTORY OF THE DRAINAGE AREA 5
4.2.1 SRCSD SEASONAL WETLAND IRRIGATION ACTIVITIES 5
4.3 CLIMATE AND WEATHER 5
4.4 HYDROLOGIC DATA * 6
4.6 PROJECT CONTROL DATA 6

SECTION 5 7

CONSTRUCTION HISTORY 7

5.1 PURPOSE 7
5.2 CONTRACTS 7
5.2.1 PERIMETER LEVEE IMPROVEMENTS 7
5.2.2 NORTH BEACH LAKE LEVEE IMPROVEMENTS 7
5.2.3 MORRISON CREEK LEVEE IMPROVEMENTS 7
5.2.5 BUFFERLANDS ECOSYSTEM RESTORATION PROJECT 8
5.3 CONSTRUCTION HISTORY 8

SECTION 6 10

PROJECT PERFORMANCE 10

6.1 PURPOSE 10
6.2 FLOOD PROTECTION 10

6.3 MITIGATION AND RESTORATION 11
6.4 RESPONSIBILITY OF LOCAL SPONSOR 12

SECTION 7 13

PROJECT COOPERATION AGREEMENT 13

7.1 PURPOSE 13
7.2 LIMITS OF RESPONSIBILITY FOR FLOOD RISK REDUCTION FACILITIES 13
7.3 LIMITS OF RESPONSIBILITY FOR ECOSYSTEM RESTORATION 13

SECTION 8 14

OPERATION 14

8.1 PURPOSE 14
8.2 PROJECT DESIGN 14
8.3 LEVEE OPERATIONS 14
8.4 CHANNEL OPERATIONS 15
8.5 OPERATIONS RECORDS 15

SECTION 9 16

EMERGENCY OPERATIONS 16

9.1 PURPOSE 16
9.2 EMERGENCY OPERATIONS RESPONSIBILITIES 16
9.2.1 LEAD AGENCY 16
9.2.2 SECONDARY AGENCY 16
9.3 EMERGENCY ASSISTANCE 17
9.4 EMERGENCY OPERATION PROCEDURES 17
9.4.1 PRELIMINARY ACTIVITIES 17
9.4.2 PRE-FLOOD ACTIVITIES 18
9.4.3 FLOOD FIGHTING METHODS 18
9.4.4 STOP LOG STRUCTURE 20
9.5 DISASTER RELIEF 20
9.6 CONTACT LIST 21

SECTION 10 22

MAINTENANCE AND INSPECTION 22

10.1 INTRODUCTION 22
10.2 INSPECTION REPORT 22
10.3 FLOOD RISK REDUCTION FACILITIES 23
10.3.1 LEVEES 23
10.3.2 EARTHEN CHANNELS 25
10.3.3 RELIEF WELLS 26
10.3.4 STOP LOG STRUCTURE 26
10.3.5 CONCRETE FLOODWALL AND CONCRETE STRUCTURES 27
10.3.6 STEEL SHEET PILE FLOODWALL STRUCTURES 28
10.4 REVETMENT 29
10.5 UTILITIES 29
10.5.1 INTERIOR DRAINAGE FACILITIES 29
10.5.2 UTILITY CROSSINGS 30
10.6 SITE SECURITY AND ACCESS 31
10.6.1 SECURITY GATE AND FENCING 31
10.6.2 PATROL ROADS AND ACCESS RAMPS 31
10.7 ENVIRONMENTAL MAINTENANCE AND INSPECTION 32

10.7.1 VEGETATION MANAGEMENT 32
10.7.2 ENVIRONMENTAL COMMITMENTS AND PERMITS 33

SECTION 11 34

SURVEILLANCE 34

11.1 INTRODUCTION 34
11.2 SURVEILLANCE PROGRAM 34
11.3 SURVEILLANCE AFTER EMERGENCY EVENTS 34

SECTION 12 35

REPAIR, REPLACEMENT, AND REHABILITATION 35

12.1 INTRODUCTION 35
12.2 FLOOD RISK REDUCTION FACILITIES 35
12.2.1 EARTHEN STRUCTURES 35
12.2.2 CONCRETE AND STEEL STRUCTURES 36
12.3 UTILITY FACILITIES 36

SECTION 13 37

NOTIFICATION OF DISTRESS 37

13.1 INTRODUCTION 37
13.2 RESPONSIBILITIES 37
13.3 EVIDENCE OF DISTRESS 37

EXHIBITS

Exhibit	Description
A	Location Maps
B	As-Built Drawings
C	Code of Federal Regulations
D	Project Agreements
E	Checklist for Inspection - Flood Damage Reduction System Inspection Report - Semi-Annual Report Cover Letter
F	Environmental Commitments
G	Suggested Flood Fighting Methods
H	North Beach Lake Levee Relief Well O&M Procedures
I	Datum Conversion Procedures

ACRONYMS & ABBREVIATIONS

CDFG	California Department of Fish and Game
CDM	Camp Dresser and McKee, Inc.
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CRB	California Reclamation Board
CVFPB	Central Valley Flood Protection Board
CWA	Clean Water Act
DWR	Department of Water Resources
ERDC	Engineering Research and Development Center
FEMA	Federal Emergency Management Agency
LRR	Limited Re-evaluation Report
MMP	Mitigation and Monitoring Plan
NEPA	National Environmental Policy Act
NGVD	National Geodetic Vertical Datum
OMRR&R	Operation, Maintenance, Repair, Replacement, and Rehabilitation
PCA	Project Cooperation Agreement
PB	Parson Brinkerhoff Quade & Douglas, Inc.
R&U	Risk and Uncertainty
SRCSD	Sacramento Regional County Sanitation District
SAFCA	Sacramento Area Flood Control Agency
SRWTP	Sacramento Regional Wastewater Treatment Plant
UPRR	Union Pacific Rail Road
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WRDA	Water Resources Development Act
SWIF	System-Wide Improvement Frameworks

SECTION 1

GENERAL

1.1 BACKGROUND

The Morrison Creek stream group in south Sacramento County, California, has periodically flooded urban areas in the county and city of Sacramento. High water in the Beach-Stone Lakes Basin and backwater impeding stream flow contribute to the potential for property damage due to flooding. The reconnaissance study, completed by the U.S. Army Corps of Engineers (USACE) in 1995, compared the estimated project costs to the estimated cost of flood losses and determined flood risk measures to be economically feasible. The Project is known as the South Sacramento County Streams, California, San Joaquin River Basin, Flood Control Project. A feasibility study, completed in 1998 by the USACE in partnership with the Sacramento Area Flood Control Agency (SAFCA), developed, analyzed, and recommended flood risk reduction alternatives. The Design Criteria and Analysis Documentation Report (USACE, 2000) and Limited Reevaluation Report (USACE, 2004) defined the project. A Location Map (Exhibit A) delineates constructed projects which are the subject of this manual. Other components of the project that have not yet been constructed will become part of the OMRR&R Manual in the future.

- Floodwalls and levees along the north side of Unionhouse Creek from Franklin Boulevard to Union Pacific Railroad UPRR (Contract 1B2)
- Floodwalls and levees along Elder Creek between Morrison Creek and Franklin Boulevard. (Contract 1B2)
- Floodwalls and levees along Morrison Creek between Franklin Boulevard and UPRR (Contract 1B1)
- Levee along the east side and floodwall along the west side of Florin Creek from Franklin Boulevard to Elder Creek (Contract 1B2)
- The Perimeter Levee around the Regional Wastewater Treatment Plant (SCRSD Contract)
- Levee and Floodwalls along North Beach Lake from the UPRR to I-5 (Contract 1A)
- Floodwalls along Morrison Creek from UPRR to Unionhouse Creek (Contract 2A).

1.2 PURPOSE

The authorized project purposes are flood damage reduction, ecosystem restoration, and recreational improvements for Morrison, Florin, Elder, and Unionhouse Creeks in the Morrison Creek basin. In the Beach-Stone Lakes area, the project would provide protection from flooding that could result from failure of the Beach Lake levee, which protects the Pocket Area in south Sacramento and the ring levee that protects the Sacramento Regional Wastewater Treatment Plant (SRWTP). The project is intended to provide flood protection for an event having 1

chance in 100 of occurring in any given year and would have a conditional probability of non-exceedence (reliability) of no less than 90 percent for the 1 in 100 chance event.

The purpose of this manual is to provide information, guidance, and requirements for the Operation, Maintenance, Repair, Replacement, and Rehabilitation (OMRR&R) of the Project. The local, Non-Federal Sponsor (Sponsor) for the Project is the Central Valley Flood Protection Board (CVFPB) formerly known as the State of California, the Reclamation Board (CRB). The CVFPB is responsible for maintenance and operation of the Project.

1.3 ORGANIZATION

This manual complies with USACE Engineer Regulation 1110-2-401, Operation, Maintenance, Repair, Replacement, and Rehabilitation Manual for Projects and Separable Elements Managed by Project Sponsor (ER 1110-2-401).

The projects described in this manual were designed and constructed in segments at various times by different construction contractors. As-built record documents of project facilities grouped by contract reach are located in Exhibit B.

1.4 REFERENCES TO APPROVED REGULATIONS

This manual is prepared in accordance with the provisions of Code of Federal Regulations, Title 33-Navigation and Navigable Waters, Chapter II - Corps of Engineers, Department of the Army, Part 208 - Code of Federal Regulations (See Exhibit C). The regulations describe obligations assumed by the Sponsor and responsibilities of the Superintendent and the District Engineer of the Sacramento District Corps of Engineers (District Engineer).

SECTION 2

AUTHORIZATION

2.1 AUTHORIZING LEGISLATION

This project, authorized by the Water Resources Development Act (WRDA) of 1999 (Public Law 106-53 (August 17, 1999 STAT 275), states "the following projects are authorized for construction….South Sacramento County Streams, California. The project for flood risk reduction, environmental restoration and recreation, South Sacramento County Streams, California: Report of the Chief of Engineers dated October 6, 1998, at a total cost of $65,500,000, with an estimated Federal cost of $41,200,000 and an estimated non-Federal cost of $24,300,000."

2.2 RELEVANT REPORTS AND AGREEMENTS

The following are the relevant approvals and agreements necessary to construct, operate, and maintain the project:

- Final Feasibility Report and Environmental Impact Statement / Environmental Impact Report, March 1998. Recommendations were submitted to the Secretary of the Army by the Chief of Engineers on October 6, 1998 (Exhibit F).

- Project Cooperation Agreement (PCA) between the Department of the Army and the State of California, the Reclamation Board for (now known as the CVFPB) construction of the South Sacramento County Streams, CA, San Joaquin River Basin, Flood Control Project May 20, 2005 (Exhibit D).

- Section 104 Activities and Credit Approval – On January 25, 2006 the USACE approved a $7,193,252 credit for in-kind services. The following services were credited towards CVFPBs portion of the cost shared project:
    - Preparation of the plans and specifications and construction of the Perimeter Levee around the Sacramento Regional Wastewater Treatment Plant
    - Preparation of plans and specifications for the North Beach Lake Levee.

- South Sacramento County Streams, California – Limited Reevaluation Report (LRR) and Environmental Assessment (USACE, 2004). The LRR contained a new hydraulic analysis which resulted in a change to the proposed channel improvements in the technical memorandum.

SECTION 3

LOCATION

3.1 LOCATION

The South Sacramento County Streams Drainage Basin lies in the southeast portion of the City of Sacramento. Most of the basin is in the Sacramento Valley. The eastern-most parts of the basin are in the lower foothills of the Sierra Nevada. A portion of the basin lies within the Sacramento city limits, south of the city center.

3.2 STUDY AREA

The study area is surrounded by four major river basins. To the north is the American River, and to the west is the Sacramento River. To the southeast are the Mokelumne and Cosumnes Rivers. Overbank flows from all rivers may flood parts of the study area.

3.3 WATERSHED

The area contains two basins, Morrison Creek stream group and Beach-Stone Lakes. The upper basin, the Morrison Creek stream group, drains into the lower basin, Beach-Stone Lakes. See Exhibit A - Location Map.

3.3.1 UPPER BASIN - MORRISON CREEK STREAM GROUP

The upper basin includes the Morrison Creek stream group and is 131-square-miles. The basin includes Laguna Creek, Morrison Creek and the smaller tributaries Gerber, Strawberry, Florin, Elder, and Unionhouse Creeks. Generally, flooding in this basin is due to inadequate channel capacity and bridges that impede flow. Feasibility studies indicate Laguna Creek does not pose a significant flood threat to adjacent urbanized lands.

3.3.2 LOWER BASIN - BEACH-STONE LAKES

The lower basin includes the Beach-Stone Lakes and is 49-square-miles. Flood flows enter the lower basin from the Morrison Creek Stream Groups and backwater from surrounding rivers cause extensive ponding. Beach-Stone Lakes is low, flat land with the predominant land uses of agriculture, wildlife preserve, and open space.

SECTION 4

PERTINENT INFORMATION

4.1 PURPOSE

This section provides a history of the area and a summary of information pertinent to the development of the OMRR&R Manual. This section describes flooding history, climate, weather, and hydrologic data.

4.2 HISTORY OF THE DRAINAGE AREA

The flood risk reduction project consists of the 131-square-mile Morrison Creek stream group and the 49-square-mile Beach Stone Lakes basins. The area has experienced nine major flood events between 1952 and 2011. The largest of these major floods were in 1986, 1995, and 1997.

The flood of February 1986 resulted from high flows on Morrison Creek and unusually high water levels in the Beach-Stone Lakes (14.1 feet peak stage NGVD 29). During this event, levees of five key Delta islands failed; otherwise peak stage would have been higher. Extensive backwater from Beach-Stone Lakes prevented Morrison Creek and tributaries from passing flows efficiently.

Normal annual precipitation ranges from 15.5 inches in the lower Beach-Stone Lakes basin to 20 inches in the Morrison Creek basin. In January 1995, the most intense rainfall recorded in the watershed resulted in record flows on Morrison, Unionhouse, and Strawberry Creeks. Overbank flows occurred on Morrison Creek, Florin Creek, and Unionhouse Creek. Most of the damage was caused by severe interior flooding due to intense local showers, clogged drains, and power failure of interior drainage pumps.

4.2.1 SRCSD SEASONAL WETLAND IRRIGATION ACTIVITIES

The elevation of Morrison Creek is raised annually by the SRCSD to an elevation of 2 feet for approximately three weeks between May and July to maintain wetland habitat between North Beach Lake and the UPRR. SRCSD controls the water surface elevation by downstream control gates located 6,400 feet upstream from Sump 90.

4.3 CLIMATE AND WEATHER

The Sacramento basins are characterized by hot, dry summers and mild winters with relatively light precipitation. Winter temperatures range between 30-50 degrees Fahrenheit (F). Spring temperatures are typically 60 degrees F and summer temperatures are 90 degrees F with an average of 11 peak days reaching 100 degrees F. The rainy season begins in November. Normal annual precipitation ranges from 15.5 inches in the Beach-Stone Lakes basin to 20 inches in the

Morrison Creek Basin. In January 1995, cumulative precipitation in the Morrison Creek basin reached 27.6 inches.

4.4 HYDROLOGIC DATA *

Morrison Creek low flows from minor storms are pumped into the Sacramento River through a pump station north of North Beach Lake. The pump station is owned and operated by the City of Sacramento and has a maximum capacity of 90 cfs. Flows exceeding this capacity overtop a weir on the north side of Lower Beach Lake and flow south along a slough on the east side of the old Southern Pacific (SP) Railroad embankment. The slough, known as the SP Cut, exits Beach-Stone Lakes basin through flapgates under Lambert Road and drains into Snodgrass Slough, then into Mokelumne River and then into the Delta.

Effluent from the SRWTP, east of the Laguna Creek confluence with Morrison Creek, is pumped directly into the Sacramento River and does not enter Morrison Creek.

The upper basin is drained by Morrison Creek which flows into Beach-Stone Lakes. Beach-Stone Lakes are natural, permanent freshwater lakes. Flows in the lower basin are slow, and the area is subject to frequent inundation. Most of the Beach-Stone Lakes area is within the boundaries of the Stone Lakes National Wildlife Refuge. The waterways, agricultural lands, habitat mitigation lands, and buffer lands of the Beach-Stone Lakes area serve as a wetland preserve and as a detention basin for floodflows from both the south and the north.

* South Sacramento County Streams, California – LRR and Environmental Assessment, 2004.

Information on the Morrison Creek Watershed gauges is located at the following:

- http://waterdata.usgs.gov/usa/nwis/sw
- http://www.sacflood.org/mappg/morrison.html

4.6 PROJECT CONTROL DATA

All elevations referenced in this manual are in NGVD 29 datum.

- Datum conversion equation is NGVD 29 = NAVD 88 - 2.54ft. See Exhibit E, Sacramento District Datum Documentation Report.

SECTION 5

CONSTRUCTION HISTORY

5.1 PURPOSE

This section provides a historical summary of construction start and completion dates, costs, names of contractors, contracting officers, and resident engineers for the various construction contracts associated with the Project.

5.2 CONTRACTS

The Project includes modification to channels, bridges, and storm drain outfalls; construction of stop log structures and floodwalls or the raising of levees along various creeks; improvement of maintenance roads, under-crossings, and the perimeter levee around SRWTP.

5.2.1 PERIMETER LEVEE IMPROVEMENTS

The design and construction management for the SRWTP Perimeter Levee Improvements were performed under an agreement between SAFCA and SRCSD. The purpose of the project is to improve existing flood protection facilities and construct new facilities to enhance the flood protection level for the SRWTP located immediately south of Morrison Creek. An O&M Manual for perimeter levee improvements was prepared in December 1997. The December 1997 document is superseded by this O&M Manual. As an approved creditable element of the project, the Sponsor is responsible for operation and maintenance of the perimeter flood risk reduction facilities per the project O&M Manual. The project improved 2.8 miles of existing levee, constructed 0.9 miles of new levee, and constructed 1.9 miles of new floodwall. Stop log structures were constructed in locations where levee improvements cross UPRR railroad tracks.

5.2.2 NORTH BEACH LAKE LEVEE IMPROVEMENTS

The location of the project is on Morrison Creek along the North Beach Lake levee, north of the SRWTP from the Sacramento River, east of the UPRR tracks. North Beach Lake Levee Improvements were designed by Parson Brinckerhoff Quade & Douglas, Inc. (PB) and constructed by Kin Enterprises Inc under contract with USACE. Improvements include raising 4.4 miles of an existing levee by 4 feet, building 0.5 miles of new levee, relief wells, and constructing 3,400 linear feet of concrete flood walls.

5.2.3 MORRISON CREEK LEVEE IMPROVEMENTS

Morrison Creek Levee Improvements were designed and constructed by 2 separate contract reaches. The first reach, East of UPRR to Franklin Boulevard was designed by PB and constructed by Nordic Enterprises Inc under contract with USACE. This reach of the flood risk reduction project includes channel widening and construction of a low flow concrete lined

channel, construction of 2.3 miles of concrete or sheet pile floodwall, construction of 0.1 mile of new levee, a stop log structure across UPRR, and 1.5 miles of improvements to existing levees. The second reach, also east of UPRR to Unionhouse Creek was designed by MGE Inc. and constructed by Four M Contracting, Inc. under contract with USACE. This reach of the flood risk reduction project consisted of a flood wall between the confluence of Union House Creek and the UPRR bridge. The project consists of a 2,850 linear feet of reinforced concrete flood wall and 80 linear feet of levee along the east side of the UPRR right-of-way.

5.2.4 FLORIN, ELDER, AND UNIONHOUSE CREEK LEVEE IMPROVEMENTS

Florin, Elder, and Unionhouse Creek Levee Improvements were designed by PB and constructed by SMP Services under contract with USACE. Project features include channel widening and deepening, constructing a concrete lined low flow channel, concrete floodwalls, concrete retaining walls, levees, earthwork, geotextile placement, access roads, stone protection, cast-in-drill-hole concrete piles, cast-in-place structural concrete, fencing and seeding. Construction includes approximately 4,500 feet of flood risk reduction structures along the right levee of Unionhouse Creek from Franklin Boulevard to Morrision Creek, approximately 3,000 feet of flood risk reduction structures along the right and left levees of Elder Creek from Franklin Boulevard to Morrison Creek, and approximately 1,500 feet of flood risk reduction structures along the right and left levee of Florin Creek from Franklin Boulevard to Elder Creek.

5.2.5 BUFFERLANDS ECOSYSTEM RESTORATION PROJECT

The South Sacramento County Streams project was authorized in Section 101 (a) (8) of the Water Resources Development Act of 1999 (Public Law 106-53). Design and construction management for the Bufferlands Restoration Project is performed by the Sacramento Regional County Sanitation District. The project is a 189 acre ecosystem restoration component of the South Sacramento County Streams Project located on the property surrounding the Sacramento Regional Wastewater Treatment Plant. The Bufferlands Restoration Project is maintained by SRCSD in accordance with the PCA dated September 18, 2003.

5.3 CONSTRUCTION HISTORY

Table 5-1 summarizes the construction history for the Project.

Table 5-1

Reach	Contract	Drawing Number	Contract Number	Start	Finish	Total Contract Amount
SRWTP Perimeter Levee Improvements	**SRCSD**	Sacramento Regional Wastewater Treatment Plant Perimeter Levee Improvements, dated 5-30-96		May 1996	October 1997	$7,192,252 (creditable)
North Beach Lake Levee (West of UPRR to Sacramento River)	**1A**	**6-25-2204**	W91238-05-C-0018	June 14, 2005	January 27, 2006	$6,870,530
Morrison Creek Levee Improvements (East of UPRR to Franklin Boulevard	**1B1**	**6-04-2208**	W91238-06-C-0020	July 11, 2006	November 13,2008	$18,335,780
Unionhouse Creek Levee Improvement with options for Florin and Elder Creek Levee Improvement	**1B2**	**6-04-2208**	W91238-07-C-0024	September 26, 2007	November 26,2008	$13,928,043
Morrison Creek along Union Pacific Railroad	**2A**	**6-04-2214**	W91238-11-C-0020	September 27, 2011	November 1, 2013	$9,386,122
Total						$55,712,727

SECTION 6

PROJECT PERFORMANCE

6.1 PURPOSE

This section describes the following:

- Flood protection provided by the project
- Environmental mitigation and benefits of the project.

The primary objective of OMRR&R is to protect the project benefits and ensure project facilities will perform as designed.

6.2 FLOOD PROTECTION

Flood risk reduction features are designed to adequately and safely pass the Risk & Uncertainty (R&U) flood event, the 1% flood event at 95% assurance with 2 feet of freeboard or at 90% assurance with 3 feet of freeboard. The leveed channels of South Sacramento Streams are subject to backwater conditions from Beach Lake, therefore the levees were designed to stage elevations based on peak stages in Beach Lake and the governing flow associated with the peak stages. Table 6-1 lists the flows (per channel and reach) that were used to develop the water surface elevations that were used to develop the floodwall/levee heights per R&U guidance. However, it should be recognized that the water surface elevations in the lower end of the project are driven by the stage in Beach Lake; if the stage in the lake is lower, then it is possible that the channels could convey higher flows than noted. Typical high flow events occur in the winter months, typically December through February, flow peaks typically last a day or so while the stage peaks can last longer, depending on Beach Lake stages.

Table 6-1.

Creek	Reach	Flow (cfs)
Morrison Creek	Franklin Road to Elder Creek	3781
	Elder Creek to Unionhouse Creek	5362
	Unionhouse Creek to Laguna Creek	6875
	Downstream of Laguna Creek	11427
Unionhouse Creek	Franklin Blvd to Morrison Creek	2096
Elder Creek	Franklin Blvd to Florin Creek	1381
	Downstream of Florin Creek	1931
Florin Creek	Downstream of Franklin Blvd	665

6.3 MITIGATION AND RESTORATION

The Environmental Impact Statement / Environmental Impact Report (EIS/EIR, March 1998) contains information regarding environmental impacts and required mitigation. Mitigations for threatened, endangered and other listed species are approved by the USFWS and the California Department of Fish and Game (CDFG). A mitigation summary is listed below:

- Impacts to the burrowing owl were mitigated on property owned by the County of Sacramento, managed by the USFWS, and included in the Stone Lakes National Wildlife Refuge.
- Credits were purchased with Conservation Resources, LLC to mitigate for impacts to vernal pool species and the valley elderberry longhorn beetle.
- Credits were purchased with Westervelt Ecological Services and Bryte Ranch conservation bank to mitigate for impacts to the giant garter snake.
- A combined purchase of seasonal wetland creation credits with Westervelt Ecological Services mitigated for seasonal wetland, emergent marsh, and riparian scrub.
- Ecosystem restoration provides 215 acres of wildlife habitat including open water wetlands, riparian, and grassland cover at four sites in the SRWTP Bufferlands. The 2,500 acre bufferland area surrounding the SRWTP provides opportunities to enhance and expand wetland, riparian vegetation, and other habitat.

6.4 RESPONSIBILITY OF LOCAL SPONSOR

The local Sponsor will implement a floodplain management plan no later than one year after completion of project construction. The plan will address measures to be undertaken by non-federal interests to preserve the level of flood risk reduction provided by the Project.

SECTION 7

PROJECT COOPERATION AGREEMENT

7.1 PURPOSE

This section summarizes pertinent provisions from the Project Cooperation Agreements (PCA).

The Department of the Army, the State of California, the Reclamation Board (now the CVFPB) have entered into a Project Cooperation Agreement for the South Sacramento Streams Flood Control Project on May 20, 2005 as required by Public Law (99-662).

The Department of the Army and the Sacramento Regional County Sanitation District have entered into a Project Cooperation Agreement for Construction of the South Sacramento Streams Ecosystem Restoration Project on September 18, 2003 as required by Public Law (99-662).

See Exhibit D for a copy of the Project Cooperation Agreements.

7.2 LIMITS OF RESPONSIBILITY FOR FLOOD RISK REDUCTION FACILITIES

The CVFPB is the agency to fulfill the local interest responsibilities for the South Sacramento Streams Project in accordance with the Project Cooperation Agreement. After USACE transfers the completed project or functional portions to the CVFPB and provides the CVFPB with a copy of the OMRR&R Manual, the CVFPB, shall operate, maintain, repair, replace, and rehabilitate the completed project in accordance with regulations or directions prescribed by the federal government.

7.3 LIMITS OF RESPONSIBILITY FOR ECOSYSTEM RESTORATION

The Sacramento Regional County Sanitation District (SRCSD) is the agency to fulfill local interest responsibilities for the South Sacramento Streams Ecosystem Restoration Project. The SRCSD shall operate, maintain, repair, replace, and rehabilitate the completed projects, or functional portion thereof, in accordance with regulations or directions prescribed by the federal government.

SECTION 8

OPERATION

8.1 PURPOSE

This section details the operations that are necessary for the safe and efficient functioning of the Project to produce the benefits set forth in the project authorization.

8.2 PROJECT DESIGN

The project flood risk reduction facilities are designed to pass the 1% flood with either 95% confidence and 2 feet of freeboard or the 90% confidence with 3 feet of freeboard for Morrison, Unionhouse, Elder, and Florin Creeks (LRR, July 2004). To successfully operate the project to pass these floods, the levees, floodwalls, drainage structures, pumping plants, channels, and other facilities must be properly operated and maintained.

8.3 LEVEE OPERATIONS

Operational requirements consist of monitoring for conditions that can adversely affect the safe performance of the earthen levee structure, as stated in CFR Part 208, Code of Federal Regulations, Section 208.10, Local Flood Protection Works; Maintenance and Operation of Structures and Facilities. Conditions causing concern are discussed in Section 10.3.1 Levees.

The Sacramento District Engineer shall review any proposed improvement passing over, under, or through the levee. The CVFPB must ensure that all encroachments are constructed and maintained in compliance with the conditions of the permit and that all recommendations from USACE are included in any permits that are issued.

The Superintendent shall provide annual training for maintenance personnel and inspectors reinforcing previous environmental commitments (See Exhibit F – Environmental Commitments) covering the following topics:

- Birds
  - Active bird nests.
  - Work near nests.
  - Consultation with agencies.
- Vegetation Removal
  - Removal of native trees.
  - Working with Elderberry shrubs.
  - Mowing operations.
  - Work prior to vegetation removal.
  - Time periods for removal of brush, trees, and other woody.
- Burrowing Animals
  - Abatement of burrowing mammals.

- Filling burrows. Care will be taken to ensure that the entire hole is addressed.
- Consultation before performing work around Burrowing Owls.
- Ground disturbing activity timeframes.

8.4 CHANNEL OPERATIONS

Operational requirements consist of monitoring for conditions that can adversely affect the safe performance of the earthen levee structure. Conditions causing concern are discussed in Section 10.3.2 Earthen Channels.

Debris accumulates at bridge piers during flood events and reduces the channel area. Debris removal is necessary to maintain channel hydraulics.

Sediment is conveyed and deposited during high water events. Therefore, periodic sediment removal is essential. The maintaining agency must abide by any governing Streambed Alteration Agreement with California Department of Fish & Game (CDFG) and water quality regulations when conducting sediment removal.

8.5 OPERATIONS RECORDS

The following operation records shall be maintained by the project Superintendent and made available for inspection upon request:

- Files, records, and drawings concerning the constructed project works;
- Levee log detailing encroachments into the project right of way;
- Permits for improvements, construction, and encroachments in the Project Right-of-Way
- Coordination of local activities;
- Inspection records (example – patrols during and after high water);
- Log of high water mark records and freeboard measurements.

SECTION 9

EMERGENCY OPERATIONS

9.1 PURPOSE

This section addresses flood emergency operation plans and responsibilities including preparations for and responses to project emergency conditions. It provides an outline of emergency operation records and covers:

- Chain of responsibility
- Emergency communications network including redundancies (internal and external)
- Local emergency response assistance such as fire, police, medical, and Red Cross
- State and Federal emergency response agencies
- Flood fight or other plans that may have been part of design documentation

9.2 EMERGENCY OPERATIONS RESPONSIBILITIES

9.2.1 LEAD AGENCY

The project Sponsor, CVFPB, is the lead agency in charge of Emergency Operations. During periods of flood danger, the CVFPB shall patrol the projects works area and maintain contact with secondary agencies.

9.2.2 SECONDARY AGENCY

The following are secondary agencies involved in emergency operations:

- Department of Water Resources (DWR), State Flood Operation Center
- City of Sacramento
- Sacramento County
- Sacramento Area Flood Control Agency (SAFCA)
- Union Pacific Railroad (UPRR)
- California Highway Patrol (CHP)
- California Department of Transportation (Caltrans)

9.3 EMERGENCY ASSISTANCE

The project Sponsor is the first line of defense during a flood-fighting event. The USACE has authority to assist in emergency actions in accordance with Public Law 84-99, as amended. During a flood alert, USACE Sacramento District, may advise local authorities on flood fighting methods and respond to written requests for assistance in flood fighting either from the project Sponsor or the DWR, State Flood Operation Center. The DWR State Flood Operations Center needs to be notified of all requests for assistance. In addition, Emergency Operations authority allows USACE to furnish required assistance in support of other agencies, as appropriate.

The state Office of Emergency Services and the Federal Emergency Management Agency can also provide emergency assistance resources. Once State resources are depleted, USACE assistance may include the following:

- Furnishing technical advice and assistance;
- Furnishing flood fighting materials; and
- Hiring equipment and operators for flood fighting operations.

USACE may also assist in repairing flood-damaged flood risk reduction facilities that are active in the Rehabilitation and Inspection Program (RIP) under authority of Public Law 84-99, as amended. In such situations, project Sponsor must assess damages and make a specific request to the USACE Sacramento District Engineer within 30 days of the flood event regarding the damages.

USACE personnel, whether military or civilian, are not vested with any civil police authority in performance of their engineering duties and they will not attempt to exercise any such authority. The responsibility for protecting flood risk reduction and recreational works against sabotage, acts of depredation, or other unlawful acts rests with the local interests through local and state government agencies. In the event that local law enforcement agencies prove inadequate, local interests, as provided by law, can request the aid of state forces and the aid of federal troops.

9.4 EMERGENCY OPERATION PROCEDURES

It is better to be over-prepared for a flood than it is to find at the last moment that preparations were incomplete or unsatisfactory. Confidence in experienced individuals, contractors, and operation in times of emergency is a valuable asset.

9.4.1 PRELIMINARY ACTIVITIES

Prior to each flood season, review the most current Emergency Operation Plan for the County and City of Sacramento. As of the date of this Manual, the most current Emergency Operation Plans are identified below:

- County of Sacramento Emergency Operation Plan, December 2008
- City of Sacramento, CA Emergency Operations Plan, April 2005

Electronic files of the City and County Emergency Operation Plans are located at the following website:

- http://www.sacramentoready.org/

9.4.2 PRE-FLOOD ACTIVITIES

The project Superintendent shall notify the appropriate agencies and labor crews of the impending flood emergency. The project Superintendent shall assign individuals to a defined section of the project. The assigned person, or section chief, shall perform the following tasks:

- Verify telephone numbers of all emergency team members.
- Know the location of equipment and material stockpiles (such as sacks, sandbags, brush, lumber, lights, etc.).
- Perform a final assessment of riverbanks, levees, floodwalls, berms, and access roads.
- Physically mark a dividing line defining section limits.
- Deliver a verbal and written notice at homeless encampments to move locations due to potential flooding.
- Assure all flap gates on culverts are operable, closed, and seated properly.
- Prepare areas of new levee construction, where vegetation is not established, for wave wash.

9.4.3 FLOOD FIGHTING METHODS

The following methods of combating various defects in the earthen levee have been proven effective during many years of flood fighting by various departments, both Federal and Non-Federal. See Exhibit G for Emergency Flood Fighting Methods from USACE and DWR.

9.4.3.1 SAND BOILS

Sand boils are dangerous if out flowing water discharges levee material. The common method for controlling sand boils consists of walling up a watertight sandbag ring around the boil to a height necessary to reduce the velocity of flow to a point where material is no longer discharged from the boil. The sandbag ring around the boil shall be large enough to protect the defective area immediately surrounding the boil. The sandbag ring diameter (D) shall be greater than 1.5 times the height (H), ($D > 1.5 \times H$) as shown in Exhibit G. Even though water shall continue to flow out of the boil, it shall not overtop the sandbag structure uncontrolled. There shall be a means to drain the water out of the sandbag structure using pipes or channels made out of lumber or sandbags. If several boils of sufficient force are displacing material, a sandbag sub-levee may be built around the entire nest of boils. The necessary height will reduce the outflow velocity to a point where material is no longer discharged from any boil.

9.4.3.2 WAVE WASH

The project Superintendent shall study the waterside slopes beforehand to determine the possibility of wave wash. All such reaches and potential trouble spots shall be located well in advance. Reserve supplies of sand filled sacks and rolls of polyethylene sheeting or canvas shall

be available for immediate use. If the slope is well sodded, a storm of an hour's duration shall cause very little damage. During periods of high wind and high water, experienced personnel shall observe where the washouts are occurring by sounding or by prodding along the submerged slope with a rod. Sections of canvas or polyethylene sheeting shall be placed on wave washed areas as shown in Exhibit G.

9.4.3.3 SCOUR

Careful observation for scour shall be made to the riverside of the levee at all locations where the surface current is greater than two feet per second and where profiles show a water slope of two feet per mile or greater. The ends of old levee dikes, road-crossing ramps, old traverses, and places where pipes, sewers and other structures penetrate the levee shall also be checked for scour. Sometimes, the first indication of erosion below the water surface of the waterside levee slope is the appearance of seepage and boils on the landside of the levee. This may be due to shortened seepage path created by the erosion of the waterside levee slope. If any sign of scour is observed in the pits or at the ends of the dikes, soundings shall be taken to observe the amount and progression of the scour. An approved method of construction to reduce scour in the pits, on the slopes, or at the ends of dikes will be to construct deflection dikes by wiring together brush, treetops, or lumber then anchor to the ground by driving stakes and fill in between with filled sandbags or stone. Another effective method of reducing scour is to place riprap into and adjacent to the eroded area. Riprap can also be used to construct short diversion dikes.

9.4.3.4 EMERGENCY TOPPING METHODS

The as-constructed line of protection, whether from the natural riverbanks or a structural flood risk reduction features (i.e., gabions, downstream levees, floodwalls, or stone protection), must maintain the original design grades (elevations) for the life of the projects. If any reaches or localized areas show signs of degradation below design grades, emergency grade raising shall be conducted at once to restore the necessary grade. Emergency grade raising, or topping, may include the following:

- **Sandbag Topping**
  Sandbag topping may be used to raise the crown of the levee by up to three feet. The first layer of sacks shall be laid stretcher-wise or along the levee, crosswise for the second layer, and so on. Sacks shall be lapped at least 1/3 either way or well hauled into place. When properly stacked and tamped, one sack will give about three to four inches of topping.

- **Lumber and Sandbag Topping**
  This is the most commonly used method of raising low levee reaches in an emergency. In putting on this topping, as well as other topping, a careful line of levels shall be run and grade stakes set in advance. 2" x 4" x 6' stakes shall then be driven on the riverside of the crown six feet apart, and 1" x 12" x 12'-0" boards nailed to the landside of the stakes. This wall, backed with a single tier of sacks, will hold out at least one foot of water. If a second foot is necessary, the layers of sacks will be increased in number and reinforced. The stakes shall be driven three feet in the ground, and shall project up three feet, thus providing a three-foot maximum topping if properly braced from behind with

sacks and earth. In some instances, it may be practical to back up the planking with tamped earth in lieu of the sacks.

- **Geotextile "Burrito" Filled With Sand**
  This type of emergency grade-raising is similar to a very large sandbag but is relatively easy to implement compared to sandbagging.

9.4.3.5 DEBRIS ACCUMULATION

During a major flood, bridge pier walls and foundations and inlet structures have the potential for becoming partially obstructed by large, floatable debris. In addition, vegetation planted along the levee banks could trap floodwater debris. Inlet structures and bridge pier structures shall be checked for debris accumulation and debris shall be removed as soon as possible. This can frequently be done with backhoe attachments.

9.4.4 STOP LOG STRUCTURE

The purpose of this section is to define Standard Operating Procedures (SOP) and interagency communication at the stop log structure, during a flood event within Morrison Creek.

All elevations referenced in this section are in the NGVD 29 datum and measured in relation to the future gage at the Sump 89 on Beach Lake levee on Morrison Creek. The creek stage elevation measured at the Sump 89 on Beach Lake levee will determine the timing of the stop log structure installation at the Beach Lake levee and UPRR Bridge. During a flood emergency, there are 6 steps to be taken by the project Superintendent. The details of each step are located in Exhibit G, "SOP for the Stop Log Structure.pdf". The document defines communication between agencies, and when to place and remove the structure in relation to a flood in Morrison Creek. The SOP for the Stop Log Structure at the SRWTP perimeter levee is located in Exhibit G. The 6 steps are:

STEP 1: Monitoring and Advisory (Creek Stage less than 14 feet)
STEP 2: Initiate Flood Warning (Creek stage 14 feet and rising)
STEP 3: Initiate Second Phase Flood Warning (Creek Stage 15 feet and rising)
STEP 4: Flood Warning On-Site Meeting (Creek Stage 15.5 feet and rising)
STEP 5: Installation of Stop Log Structure (Creek Stage 16 feet and rising)
STEP 6: Removal of Stop Log Structure (Creek Stage 16 feet and lowering)

9.5 DISASTER RELIEF

It is the responsibility of local, state, and municipal authorities supported by and working in connection with the American Red Cross to adopt measures for relief of flood disaster victims. Relief measures can be undertaken by the Department of the Army through its Army Area Commander under existing Army Regulations, but such measures will be undertaken only as a last resort in extreme cases and under compelling circumstances where local resources are clearly inadequate to cope with the situation.

9.6 CONTACT LIST

CVFPB
(916) 574-0609
- 8:00 am to 5:00 pm - CVFPB staff is available

Union Pacific Railroad
UPRR Emergency Response
1-888-877-7267
This is the UPRR single point of contact for dispatch of UPRR emergency responders.

City of Sacramento
Department of Utilities
Drainage / Flood Superintendent Office
(916) 808-6223
During high water events, someone is available at the phone number 24-hours a day.

SAFCA
(916) 874-7606
An answering machine will pick up if no one available.

Department of Water Resources
State Flood Operations Center
(916) 574-2619
This is a 24-hour phone number.
- 8:00 am to 5:00 pm - DWR staff responds to calls.
- 5:00 pm to 8:00 am - An answering service relays valid messages to the assigned DWR Duty Monitor who then responds to calls.

Current River and Reservoir Information System
1-800-952-5530
Recording of current river and reservoir conditions.

Sacramento Regional Wastewater Treatment Plant
Process Control Center (PCC)
(916) 875-9400

SECTION 10

MAINTENANCE AND INSPECTION

10.1 INTRODUCTION

This section defines the maintenance and inspection required for proper care of the project. Completed projects must be adequately maintained if they are to function as intended. The project Superintendent is responsible for keeping maintenance and inspection records and making them available for government inspection. Government inspections will be performed in consultation with the project Superintendent. The District Engineer may update this manual for changed conditions and, if warranted, to correct conditions discovered during inspections. Such updates will be performed in consultation with the project Superintendent. The maintenance and inspection requirements included herein apply to all items constructed by and necessary for the operation of the Project.

10.2 INSPECTION REPORT

Features shall be inspected in accordance with the checklist items in the "Flood Damage Reduction System Inspection Report.pdf" located in Exhibit E. The report, completed during the inspection, shall indicate necessary maintenance, repair, rehabilitation, replacement, and urgency for a needed action. The project Superintendent shall use personnel with appropriate expertise to evaluate the need for a site-specific maintenance program based on actual problems encountered during field inspection.

Code of Federal Regulations, Title 33, Chapter II, paragraph 208.10 (a)(6) states, "it shall be the duty of the project Superintendent to submit a semi-annual report to the District Engineer covering inspection, maintenance, and operation of the protective works." A suggested cover letter for the semi-annual report is located in Exhibit E.

The following hand tools are suggested for use in taking field measurements during field inspection and/or surveillance:

- **Comparator card and hand-held microscope.** Crack widths can be estimated by using a clear comparator card with lines of specified width marked on the card. If more accurate measurements are required, a crack comparator (a hand-held microscope with a scale on the lens closest to the surface being viewed) can be used.
- **Crack monitor.** For measuring crack movement.
- **Measuring tapes.** For measuring distance, height, length, or diameter. Be prepared to measure up to 100 feet.
- **Plumb bob.** For quick estimate of vertical alignment of structures.
- **Hand-held signing level.** For quick estimate of a level line of sight.
- **Survey equipment.** For measuring cross sections and sediment depths at each established sediment survey station.

- **Camera.** For photographic documentation of existing conditions, including annual documentation for sediment and vegetation management conditions.

10.3 FLOOD RISK REDUCTION FACILITIES

10.3.1 LEVEES

General Description and Use

The term levee as used herein is defined as an earthen structure whose primary purpose is to furnish flood protection from seasonal high water and subject to water loading for periods of only a few days or weeks per year.

Need for Inspection and Maintenance

Code of Federal Regulations, paragraph 208.10(b) (1) states,

> "The Superintendent shall provide at all times such maintenance as may be required to insure serviceability of the structure in time of flood . . . Such inspections shall be made immediately prior to the beginning of the flood season: immediately following each major high water period, and otherwise at intervals not exceeding 90 days, and such intermediate times as may be necessary to insure the best possible care of the levee."

A levee breach will result in extensive flooding of surrounding areas. Long-term structural integrity of the levees through continuous inspection and maintenance will ensure their ability to contain design flood flows. Ensure the channels are capable of passing the design flow with required freeboard.

The following summarize typical maintenance issues encountered with levees:

- The crown of the levee shall be maintained to allow surface runoff to drain readily and prevent ponding on the crest.
- Removal of unauthorized encroachments from the levee and designated setback areas that hinders access or maintenance.
- Grass and weeds on the levee shall be mown to three inches for inspections and natural grasses shall be allowed to seed at appropriate times of year to promote sod cover. However, the maximum grass height on levees shall be twelve inches.
- The levee cross section shall be maintained at its original design elevation and geometry. Routine maintenance operations shall replace areas of erosion, rills, gullies, and sloughed. Fill shall be compacted and, where possible, topsoil shall be placed and seeded. Rills and gullies in need of repair shall be filled with levee fill material. Levee fill material is soil with a maximum particle size of 2 inches, a minimum of 20% by weight passing the number 200 Standard Sieve, a Liquid Limit below 45, a Plasticity Index between 7 and 25, and is free of organic material. A minimum of six inches shall be excavated around the eroded area prior to placing fill. The excavated material may be re-used during the repair. Fill should be placed in loose layers not exceeding six inches in thickness and compacted to a density equal to that of the original embankment.
- Existing survey monuments shall be used to monitor the movement and possible subsidence of the levees.

- Rodent abatement: The government is currently consulting with U.S. Fish and Wildlife Service on the means of methods of properly abating holes created and where rodents potentially reside. Guidance is forthcoming in the next iteration of this manual.
- Protective embankment cover shall be maintained with shallow-rooted plants or grasses to minimize erosion and riling of slopes. Deep-rooted brush or trees shall not be allowed to grow on any areas of a levee or within 20 feet of the levee toe, or edge of easement area, whichever is shorter.
- Any vegetation impeding channel flow capacity shall be removed. No action shall compromise erosion protection of the levee. Do not allow grazing of stock animal or burning vegetation prior to the rainy season on the levee embankment.
- Public vehicle and pedestrian traffic are not permitted to access the levee.
- No encroachments shall be made into the levee right-of-way that might endanger the structure or hinder its proper and efficient functioning and maintenance during times of emergency.
- Ensure levee log is updated to include all encroachments into the project right of way. Cite any conditions from appropriate encroachment permit and permit number or page from the as-built drawings in the levee log. Any barren embankment side slopes that have been disturbed by maintenance and repair activities or other reasons shall be reseeded before the rainy season (November 15), if at all possible. Preventative measures such as employing straw rolls and straw mulch should be considered as temporary measures to prevent erosion, such as gullies and rills on levee slopes, especially if the barren areas are seeded later than October 15 of a given year. Some of the most important conditions that should be considered when planting native grasses for erosion control are: the importance of the grass to grow quickly and the overall amount of moisture in the soil during the year.
- Embankment side slopes shall be kept clear of debris and trash. It is common for woody debris and trash to be deposited on the waterside slope during flood events. These items must be removed from the slopes and within 15 feet of the waterside toes as soon as possible after they are observed. Woody debris and trash hinder grass mowing and inspection activities, and woody debris may encourage burrowing animals.

Potential Problems

Potential problems with levees may include but are not limited to the following:

- Levee overtopping occurs during extreme flood conditions when floodwater flows over the top of the levee. Levees shall be inspected for areas of potential overtopping, such as formation of gullies on the levee crest due to erosion or settlement.
- Bank erosion is one of the most common modes of levee failure. Levees shall be inspected for signs of erosion including bank sloughing, realignment of the levee toe, and loss of vegetation on the bank surface. While erosion commonly occurs along the riverside slope, landside slope erosion can also occur due to insufficient internal drainage.
- Internal erosion, or piping, is the loss of levee or foundation material due to seepage flow through the levee embankment or foundation. Holes created by burrowing animals and utility penetrations can weaken levee embankments, causing sinkholes and piping. Material

lost from the levee or foundation will result in lowering of the levee crest and failure by overtopping or can lead to a breach in the levee.

- Slope failure in the form of slump or slide failure along weak strata within the levee or foundation materials can be initiated by seepage or sudden drawdown of the water surface. While this mode of failure is uncommon, the consequences can significantly affect levee performance. Levees and channel banks shall be inspected regularly for cracks, irregular surface conditions, and progressive movement of soil at the levee toe which indicate slope or foundation failure.

10.3.2 EARTHEN CHANNELS

General Description and Use

Earthen river channels are located throughout the project. The majority of the banks and river channels are covered with grass and riparian vegetation.

Need for Inspection and Maintenance

Code of Federal Regulations, paragraph 208.10(g) (1) states,

> "Periodic inspections of improved channels and floodways shall be made by the Superintendent . . . Such inspections shall be made prior to the beginning of the flood season and otherwise at intervals not exceeding 90 days. Immediate steps will be taken to remedy any adverse conditions disclosed by such inspections."

Routine maintenance of earthen channels is summarized by the following:

- Clearing debris, weeds, and wild growth.
- Ensure shoals do not reduce channel capacity.
- Riprap sections and walls are in good condition
- Adjacent approach and egress channels are clear of obstructions.
- Any vegetation impeding channel flow capacity shall be removed.
- Displaced stones should be moved back to their proper location. Large areas of missing or deteriorated riprap should be repaired by placing of additional riprap of the same gradation as the original riprap.

Potential Problems

Potential problems with channels include but are not limited to the following:

- Accumulation of sediment in the channel.
- Erosion down cutting of channel invert.
- Debris in channel and at bridge crossings.
- Bank erosion along the channel.

10.3.3 RELIEF WELLS

General Description and Use

Relief wells are installed along the landside toe of levees to reduce uplift pressure and provide controlled outlets for seepage which may otherwise emerge uncontrolled on the landside of the levee as sand boils causing piping of foundation materials (Exhibit H).

Locations

Relief wells are located on the landside of North Beach Lake levee between the levee toe and access road. The main access to the site is from Freeport Boulevard.

Need for Inspection and Maintenance

- Sound wells for total depth and ground water level prior to each flood season.
- Flush discharge pipe if there is evidence of rodent intrusion.
- Pump test relief wells and compare against the baseline pump tests
- Rehabilitate relief wells in accordance with ER 1110-2-1942 if there are changes to capacities or efficiencies of the wells.
- Replace manhole cover locks if vandalized.

Potential Problems

Potential problems with relief wells may include but are not limited to the following:

- Unusual settlement, sloughing, or material loss of grade of the ground or embankment in the area of the wells
- Caving or erosion under or near the concrete pads due to rodents or surface runoff
- Seepage or saturated areas in the vicinity of the wells.
- Debris in the relief well chamber or discharge pipe.
- Bending or other damage to the discharge pipe or well casing.

10.3.4 STOP LOG STRUCTURE

General Description

Stop log structures are located at the UPRR crossing at Morrison Creek and the Perimeter Levee.

Need for Inspection and Maintenance

Code of Federal Regulations, paragraph 208.10(d) (1) state,

> "…the condition of the (stop log structure) equipment and its housing shall be inspected regularly and a trial installation of the emergency closure shall be made at least once a year."

Damaged and missing parts shall be replaced immediately. This includes the metal posts as well as the timbers and bolts. Closure materials will be carefully checked prior to and following flood periods. When installed in place during flooding, the stop log structure will be inspected to ascertain no undue leakage is occurring and drains provided for ordinary leakage are functioning properly.

Clean out the beams annually to prevent harmful build-up that may inhibit the installation process. If helpful, number the beams to ensure a tight seal and smooth erection of the structure. The pertinent requirements for the maintenance of closure structures are stated in CFR 208.10(e)(1) as follows:

- No parts are missing;
- Metal parts are adequately covered with paint;
- All movable parts are in satisfactory working order;
- Proper closure can be made promptly when necessary;

Potential Problems

Potential problems with wooden stop logs may include but are not limited to the following:

Wooden stop logs swell as they absorb moisture and stop log ends are easily damaged. Decay and rotting are common. The stop logs can warp and prevent a tight seal. Although damage to guide columns is unlikely, inspections shall ensure that stop logs can be inserted properly into the guide columns and create a tight seal.

10.3.5 CONCRETE FLOODWALL AND CONCRETE STRUCTURES

General Description and Use

The primary purpose of a floodwall is to furnish flood protection from seasonal high water and subject to water loading for periods of only a few days or weeks per year.

Reinforced concrete is used in the construction of floodwalls, storm sewer outfalls, drainage headwalls, retaining walls, low flow channels, bridge foundation protection, and stairs. Many of these concrete structures have sub drains and/or weep holes to relieve hydraulic pressure.

Need for Inspection and Maintenance

Code of Federal Regulations, paragraph 208.10(c) (1) states,

> "Periodic inspections shall be made by the Superintendent … inspections shall be made immediately prior to the beginning of the flood season, immediately following each major high water period, and otherwise at intervals not exceeding 90 days."

Typical maintenance items for concrete floodwalls include repair of damaged waterproof sealants and concrete. Inspection shall verify the following:

- No seepage, saturated areas, and sand boils.
- No settlement or uplift occurring effecting stability.
- No encroachment which may endanger the wall.
- Waterstop Joints in floodwalls are water tight.

Potential Problems

Potential problems with concrete, steel, and flood closure structures may include, but are not limited to the following:

- Two basic causes of cracks in concrete are tensile stress due to applied loads and stress due to drying shrinkage, or temperature changes in restrained conditions. Isolated hairline-width cracks in concrete are normal and are usually not a cause for concern. Clusters of hairline cracks and cracks that progress beyond hairline-width indicate serious problems.
- Chipping or spalling of concrete surfaces results from corrosive materials coming into contact with the concrete, freezing or thawing, or mechanical action such as turbulence in water or impact from floating debris.
- Racking refers to changes in the vertical alignment of wall resulting in the angle between the walls and slabs deviating from 90 degrees.
- Deformations typically occur because of the lack of support around the structure or the presence of unanticipated loads. Deformations that could occur are sagging in slabs, bulging in walls, or settlement or uplift of the structure causing openings in joints.
- Erosion or scour may occur at the ends of walls and slabs.

10.3.6 STEEL SHEET PILE FLOODWALL STRUCTURES

General Description and Use

Steel sheet piles are used in the construction of floodwalls. These steel sheet pile floodwalls have waterproof coatings and sealants applied at the joints.

Need for Inspection and Maintenance

Code of Federal Regulations, paragraph 208.10(c) (1) states,

> "Periodic inspections shall be made by the Superintendent … inspections shall be made immediately prior to the beginning of the flood season, immediately following each major high water period, and otherwise at intervals not exceeding 90 days."

Typical maintenance items for steel sheet pile floodwalls may includes repair of wooden headers, repair of damaged or deteriorated waterproof coatings and sealants, and backfill and recompaction in areas of weakening soil. Typical maintenance items for concrete floodwalls repair of damaged waterproof sealants and concrete. Inspection shall verify the following:

- No seepage, saturated areas, and sand boils.
- No settlement or uplift occurring effecting stability.
- No encroachment which may endanger the wall.

Potential Problems

Potential problems with steel sheet pile floodwalls may include, but are not limited to the following:

- Waterproof coatings and sealants can wear out causing corrosion and a reduction in water-tightness.

- Steel sheet pile walls depend on adjacent soil for adequate support. Walls that are trenched through organic material are subject to weakening over time as organic materials decompose. Check adjacent soil on both sides of the steel sheet pile wall for any settlement and softening.

10.4 REVETMENT

General Description and Use

Riprap and grouted stone are used for erosion protection of channel banks, levee slopes, storm drain outfalls, bridge piers and foundations, and locations that have potential for localized scour. Riprap is a layer of stone protection placed on areas requiring erosion protection.

Need for Inspection and Maintenance

Riprap can be undermined by erosion at the toe of the riprap blanket and dislodged by impingement of floating debris, vegetation growth, or hydraulic forces. Movement of riprap after it is placed can damage and expose the underlying bedding material and lead to progressive failure of the riprap blanket, erosion of the riverbank, and failure of adjacent structures. Damaged riprap shall be repaired. Displaced riprap shall be replaced and all vegetation impeding channel flow capacity shall be removed.

Potential Problems

Potential problems with stone protection and grouted riprap may include, but are not limited to the following:

- Erosion or undercutting at the toe of the riprap and at transitions to native soil or other in-stream structures.
- Exposure of underlying bedding material.
- Accumulation of sediment and debris.
- Growth of trees and vegetation that could displace or otherwise damage riprap areas.
- Deterioration of individual stones reduces the ability of the riprap to perform adequately during high water events.
- Displaced stones should be moved back to their proper location. Large areas of missing or deteriorated riprap should be repaired by placing of additional riprap of the same gradation as the original riprap.

10.5 UTILITIES

10.5.1 INTERIOR DRAINAGE FACILITIES

General Description and Use

Interior drainage structures include storm drain outlets, sub drain outlets, outfall structures, and pump stations. Interior drainage systems collect surface water from outside the project limits and discharge water into the project through storm drain outlets and outfall structures. This manual does not discuss operation, inspection, and maintenance of pump stations, but it does cover their outlets in the river.

Need for Inspection and Maintenance

Routine inspection and maintenance of outlets and flap gates is critical because failure or clogging will allow floodwater to enter the storm drain system and flood areas adjacent to the project. Typical maintenance includes cleaning debris, vegetation, trash, and sediment inside and outside of outlet pipes; repairing erosion adjacent to outlets; and repairing any settled, misaligned, or damaged structures. Flap gates shall be maintained as follows:

- Check the gate for alignment and seating.
- Adjustable pivot points shall be free of any stiff or binding action. Studs shall not be damaged. Gates shall not be jammed in an open position.
- Assembly bolts and pivot lugs shall be free of corrosion and shearing.

The condition of pipes through the levee and pipes through floodwalls must be assessed following the most current USACE engineering standards. As of the date of this manual, the condition of pipes through the levee must be visually or video inspected every five years in compliance with PACP coding.

Potential Problems

Potential problems with interior drainage facilities may include, but are not limited to the following:

- Blockage of outfalls and flap gates due to vegetation, siltation, and debris;
- Damage to outlet pipes by impact of floating debris;
- Erosion adjacent to drainage structures that endangers water tightness or stability of outlet pipes.

10.5.2 UTILITY CROSSINGS

Need for Inspection and Maintenance

Routine inspections ensure that erosion or scour has not exposed the utility.

Every five years, a visual inspection or other assurances are required to verify the utility does not pose a risk to the integrity of the levee and is needed every 5 years.

- Routine inspections to ensure that erosion or scour has not exposed the utility.

Potential Problems

Potential problems with utility crossings may include, but are not limited to the following:

- Exposure due to erosion or scour.
- Internal erosion of levee material due to a leaking pipe.

10.6 SITE SECURITY AND ACCESS

10.6.1 SECURITY GATE AND FENCING

General Description and Use

The public does not have access to the project area. Fencing, security gates, guardrails, and bollards are provided primarily to control access.

Need for Inspection and Maintenance

Controlling access and protecting project facilities from vandalism play a critical role in the security of the site. Typical maintenance for fences, gates, guardrails, and bollards includes fabric replacement, painting, and general repairs.

Potential Problems

Potential problems with fences and gates may include, but are not limited to the following:

- Damaged facilities due to accidents and vandalism; and
- Damaged locks and keys.

10.6.2 PATROL ROADS AND ACCESS RAMPS

General Description and Use

Patrol roads traverse the length of the project to provide access for maintaining various project features. Access ramps are provided for vehicle access to the channel bed or under bridges.

Need for Inspection and Maintenance

Patrol roads and access ramps shall be maintained throughout the year to provide access to project facilities for operation and maintenance activities. Routine maintenance for patrol roads and access ramps include the following:

- Debris on road surfaces shall be removed to avoid obstruction to traffic and drainage.
- Settlement damage, sub grade movement, or other road surface damage shall be repaired immediately. The methods and materials used for repair of maintenance roads shall conform to original specifications in the construction documents.
- Patrol roads shall be kept well graded so it drains away from its travel surface.
- Surface cracks in asphalt roads shall be sealed prior to the rainy season to prevent surface water from entering the base course and weakening the sub grade.
- During flood season, any damage to the access roads or access ramps shall be repaired immediately.
- Authorized vehicular travel shall be restricted and 15 mph speed limit on levee patrol roads.

Potential Problems

Potential problems with maintenance roads and access ramps may include, but are not limited to the following:

- Road surface damage such as cracks, potholes, and undulations;
- Erosion of areas adjacent to the road surface; and
- Inadequacy of surface drainage.

10.7 ENVIRONMENTAL MAINTENANCE AND INSPECTION

10.7.1 VEGETATION MANAGEMENT

General Description and Use

Vegetation management is necessary to maintain hydraulic capacity, maintain native plant integrity in riparian mitigation areas by removing invasive exotic weeds, prevent fire hazards to adjacent properties, prevent spreading of plant diseases, and ensure that facilities or appurtenant structures function as intended.

Need for Inspection and Maintenance

Depending on local conditions and species, vegetation may grow quickly, increasing roughness conditions and reducing hydraulic capacity.

The following general vegetation management guidelines shall be used throughout the project except where stated otherwise.

The vegetation-free zone is an area adjacent to the landside and riverside toe of a levee, floodwall, or drainage outlet structure. This vegetation-free zone measures 20 feet from the inboard and outboard toes of levees and 15 feet from any infrastructure (such as outfalls or floodwalls) or the edge of structures, or to the edge of the flood control easement, whichever is shorter. This area shall be kept clear of vegetation other than trimmed grass (maintained below 12 inches) to facilitate inspection and routine maintenance. Increases in the size of the landside strip may be considered where necessary for the efficient operation of mowing equipment or construction equipment during periods of flooding. This vegetation-free zone is required for maintenance and flood-fighting activities and must be easily accessible at all times. Additionally, all vegetation impeding channel flows shall be removed.

- Levees shall be maintained in accordance with the Corps Levee Vegetation Guidance, ETL 1110-2-583. Levee slopes and crest shall be clear of woody vegetation, and grass shall be maintained in accordance with guidelines below 12 inches, so as not to obscure evidence of burrow holes.
    - Trees and excessive vegetation shall be kept clear of an area within 15 feet of all drainage outlets and structures. Grass and low vegetation that do not block the inspection, maintenance and functionality of a structure are acceptable.
    - Beaver dams constructed in waterways shall be cleared out when necessary to not impede flows from upstream creeks.

10.7.2 ENVIRONMENTAL COMMITMENTS

Biological Opinion, Amendments and consultation letters for construction of the work in this manual are included Exhibit F.

- USFWS BO dated April 15, 2002
- USFWS BO amendment dated November 15, 2004
- USFWS Formal Consultation letter dated September 30, 2011
- USFWS Formal Consultation letter dated November 21, 2012

SECTION 11

SURVEILLANCE

11.1 INTRODUCTION

This section provides an outline of a surveillance program for the Project. Surveillance is to be performed by the project Superintendent and includes the use of measurements, observations, and other activities to verify that project benefits are being obtained.

11.2 SURVEILLANCE PROGRAM

The surveillance program includes of the following:

- Long term surveillance required through the semi-annual report (Section 10.2)
- Surveillance after an emergency event

Document surveillance through the Flood Damage Reduction System Inspection Report (Exhibit E).

11.3 SURVEILLANCE AFTER EMERGENCY EVENTS

Surveillance is required after an emergency event to identify any damage. Surveillance activities include post-flood surveillance, post-earthquake surveillance, and surveillance after other unusual events.

Post-flood surveillance shall occur after a 10-year flood or a larger event.

Post-earthquake surveillance shall occur based on the following criteria:

- For earthquakes measuring less than 5.0 on the Richter scale and the epicenter is within three miles of the project.
- For earthquakes measuring 5.0 to 6.0 on the Richter scale and the epicenter is less than 30 miles from the project.
- For earthquakes measuring 6.0 or higher on the Richter scale and the epicenter is less than 50 miles from the project.

SECTION 12

REPAIR, REPLACEMENT, AND REHABILITATION

12.1 INTRODUCTION

This section discusses the repair, replacement, & rehabilitation (RR&R) requirements for project features. Repair is considered to entail those activities of a routine nature that maintain the projects in a well-kept condition. Replacement covers those activities taken when a worn-out element or portion thereof is replaced. Rehabilitation refers to a set of activities as necessary to bring a deteriorated project back to its original condition. RR&R actions are to conform to the project as-built plans and specifications unless other arrangements are made with District Engineer. These activities are the responsibility of the project Sponsor.

12.2 FLOOD RISK REDUCTION FACILITIES

A licensed civil engineer shall evaluate the extents of the damage, assess the risk of further failure, develop a temporary solution to an unsafe area, and investigate, analyze, and develop a solution to the correct elements requiring RR&R. Document RR&R through the Flood Damage Reduction System Inspection Report (Exhibit E).

12.2.1 EARTHEN STRUCTURES

The following factors shall be considered when implementing RR&R activities.

- **Fill Materials.** Restoration of failed earthen structures requires careful consideration of fill materials. Cohesive soils are usually considered suitable due to low potential for seepage. However, saturated cohesive soils can lead to unsuitable conditions and shall be evaluated prior to their utilization. Chapter 7 of USACE EM 1110-2-1913 Design and Construction of Levees, provide more detailed guidelines for use of fill materials in levee and embankment construction.

- **Geotechnical Investigations.** If existing available data on subsurface conditions are insufficient to address the problem, additional geotechnical exploration shall be considered.

- **Selection of Suitable RR&R Action.** Extensive embankment damage due to seepage or a major slope failure requires RR&R. Rehabilitation of an embankment using advance techniques such as in-situ ground improvement is required when removal and replacement of the embankment cannot be performed without having significant impact on flood risk reduction operations.

12.2.2 CONCRETE AND STEEL STRUCTURES

Large cracks in the concrete or large movements in the structure are typical conditions that warrant immediate RR&R in concrete and steel structures. Understanding the source of large cracks or movement is essential to ensuring the integrity of the structure.

12.3 UTILITY FACILITIES

RR&R of utility facilities shall be coordinated with the utility owner and conform to the project specifications and record drawings.

SECTION 13

NOTIFICATION OF DISTRESS

13.1 INTRODUCTION

This section describes the responsibilities and procedures for the immediate notification to the USACE of evidence of distress or potential failure of any project element in accordance with ER 1110-2-101, Reporting of Evidence of distress of Civil Works Structures.

13.2 RESPONSIBILITIES

The project Sponsor shall immediately report evidence of distress to the Sacramento District Office. Point of contact is provided on the contact list above.

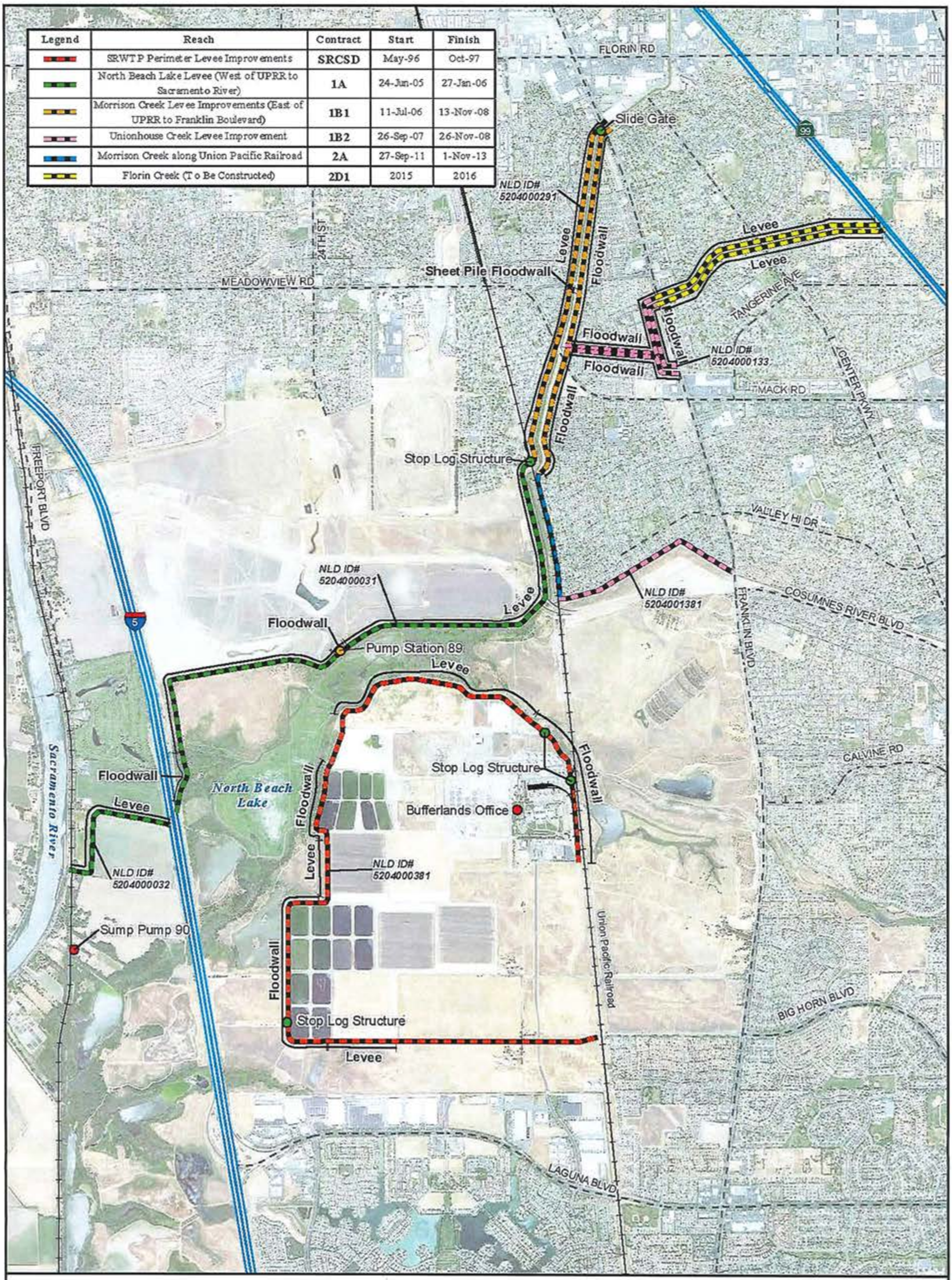
13.3 EVIDENCE OF DISTRESS

Listed hereafter area typically evidence of distress:

- Sloughs, settlement, or slides in embankments such as levees, bridge abutments, and channels.
- Evidence of piping, muddy water, or sand boils in the area of the structures.
- Any increase in seepage quantities through or under levees or abutments.
- Unusual vertical or horizontal movement or cracking of levees or abutments.
- Significant cracking of mass concrete structures (e.g. weirs).
- Sinkholes or localized subsidence in the foundation of or adjacent to levees or other pertinent structures critical to the safe operation of the projects.
- Excessive deflection or displacement of concrete structures (e.g. tilting, sliding or uplift).
- Significant damage to any structure.
- Signs of erosion on the levee prism or near the base/foundation of levees or concrete structures.
- Significant damage to or changes in structures, foundations, groundwater conditions, and adjacent terrain as a result of seismic events. Special inspections for damage shall be made immediately following the event as described in ER 1110-2-1802.
- Any other indications of distress or potential failure that could inhibit the operation of the projects or endanger life and property.

EXHIBIT A

Location Map



Legend	Reach	Contract	Start	Finish
	SRWTP Perimeter Levee Improvements	SRCSD	May-96	Oct-97
	North Beach Lake Levee (West of UPRR to Sacramento River)	1A	24-Jun-05	27-Jan-06
	Morrison Creek Levee Improvements (East of UPRR to Franklin Boulevard)	1B1	11-Jul-06	13-Nov-08
	Unionhouse Creek Levee Improvement	1B2	26-Sep-07	26-Nov-08
	Morrison Creek along Union Pacific Railroad	2A	27-Sep-11	1-Nov-13
	Florin Creek (To Be Constructed)	2D1	2015	2016

N

0 1,000 2,000 3,000 4,000
Feet

1:26,000

South Sacramento County Streams Group

U.S. Army Corps of Engineers
Sacramento District

Legend

- Railroad
- Road
- Interstate/Highway

Exhibit A - Location Map

EXHIBIT B

As-Built Drawings

EXHIBIT B
"AS CONSTRUCTED"
DRAWINGS
See separate folder for the following drawings:

File No.	Title
6-25-2204	South Sacramento County Streams Project Sacramento County, California Section 1A
6-04-2206	South Sacramento County Streams Project Sacramento County, California Section 1B1
6-04-2208	South Sacramento County Streams Project Sacramento County, California Section 1B2
6-04-2214	South Sacramento County Streams Flood Damage Reduction Project Morrison Creek at Union Pacific Railroad – Contract 2A Landside Alignment
SA-04-0165	South Sacramento County Streams Project Sacramento County, California Contract 2D1
None	Sacramento Regional Wastewater Treatment Plant – Perimeter Levee Improvements – Contract Number 3069

EXHIBIT C

Code of Federal Regulations

(d) *Enforcement policy*. Every means at the disposal of the Army Corps of Engineers will be utilized to monitor and enforce these regulations.

(1) To identify vessel operating companies that should be reporting waterborne commerce data, The Corps will make use of, but is not limited to, the following sources.

(i) Data on purchase and sale of vessels.

(ii) U.S. Coast Guard vessel documentation and reports.

(iii) Data collected at Locks, Canals, and other facilities operated by the Corps.

(iv) Data provided by terminals on ENG Form 3926.

(v) Data provided by the other Federal agencies including the Internal Revenue Service, Customs Service, Maritime Administration, Department of Transportation, and Department of Commerce.

(vi) Data provided by ports, local facilities, and State or local governments.

(vii) Data from trade journals and publications.

(viii) Site visits and inspections.

(2) *Notice of violation*. Once a reporting violation is determined to have occurred, the Chief of the Waterborne Commerce Statistics Center will notify the responsible party and allow 30 days for the reports to be filed after the fact. If the reports are not filed within this 30-day notice period, then appropriate civil or criminal actions will be undertaken by the Army Corps of Engineers, including the proposal of civil or criminal penalties for noncompliance. Typical cases for criminal or civil action include, but are not limited to, those violations which are willful, repeated, or have a substantial impact in the opinion of the Chief of the Waterborne Commerce Statistics Center.

(3) *Administrative assessment of civil penalties*. Civil penalties may be assessed in the following manner.

(i) *Authorization*. If the Chief of the Waterborne Commerce Statistics Center finds that a person or entity has failed to comply with any of the provisions specified herein, he is authorized to assess a civil penalty in accordance with the Class I penalty provisions of 33 CFR part 326. Provided, however, that the procedures in 33 CFR part 326 specifically implementing the Clean Water Act (33 U.S.C. 1319(g)(4)), public notice, comment period, and state coordination, shall not apply.

(ii) *Initiation*. The Chief of the Waterborne Commerce Statistics Center will prepare and process a proposed civil penalty order which shall state the amount of the penalty to be assessed, describe by reasonable specificity the nature of the violation, and indicate the applicable provisions of 33 CFR part 326.

(iii) *Hearing requests*. Recipients of a proposed civil penalty order may file a written request for a hearing or other proceeding. This request shall be as specified in 33 CFR part 326 and shall be addressed to the Director of the Water Resources Support Center, Casey Building, Fort Belvoir, Virginia 22060–5586, who will provide the requesting person or entity with a reasonable opportunity to present evidence regarding the issuance, modification, or revocation of the proposed order. Thereafter, the Director of the Water Resources Center shall issue a final order.

(4) *Additional remedies*. Appropriate cases may also be referred to the local U.S. Attorney for prosecution, penalty collection, injunctive, and other relief by the Chief of the Waterborne Commerce Statistics Center.

[56 FR 13765, Apr. 4, 1991]

PART 208—FLOOD CONTROL REGULATIONS

Sec.

208.10 Local flood protection works; maintenance and operation of structures and facilities.
208.11 Regulations for use of storage allocated for flood control or navigation and/or project operation at reservoirs subject to prescription of rules and regulations by the Secretary of the Army in the interest of flood control and navigation.
208.19 Marshall Ford Dam and Reservoir (Mansfield Dam and Lake Travis), Colorado River, Tex.
208.22 Twin Buttes Dam and Reservoir, Middle and South Concho Rivers, Tex.
208.25 Pensacola Dam and Reservoir, Grand (Neosho) River, Okla.
208.26 Altus Dam and Reservoir, North Fork Red River, Okla.
208.27 Fort Cobb Dam and Reservoir, Pond (Cobb) Creek, Oklahoma.

Attachment E - Part 1, USACE Interim OMRR&R Manual

208.28 Foss Dam and Reservoir, Washita River, Oklahoma.
208.29 Arbuckle Dam and Lake of the Arbuckles, Rock Creek, Okla.
208.32 Sanford Dam and Lake Meredith, Canadian River, Tex.
208.33 Cheney Dam and Reservoir, North Fork of Ninnescah River, Kans.
208.34 Norman Dam and Lake Thunderbird, Little River, Okla.
208.82 Hetch Hetchy, Cherry Valley, and Don Pedro Dams and Reservoirs.

AUTHORITY: Sec. 7, 58 Stat. 890; 33 U.S.C. 709.

§ 208.10 Local flood protection works; maintenance and operation of structures and facilities.

(a) *General*. (1) The structures and facilities constructed by the United States for local flood protection shall be continuously maintained in such a manner and operated at such times and for such periods as may be necessary to obtain the maximum benefits.

(2) The State, political subdivision thereof, or other responsible local agency, which furnished assurance that it will maintain and operate flood control works in accordance with regulations prescribed by the Secretary of the Army, as required by law, shall appoint a permanent committee consisting of or headed by an official hereinafter called the ''Superintendent,'' who shall be responsible for the development and maintenance of, and directly in charge of, an organization responsible for the efficient operation and maintenance of all of the structures and facilities during flood periods and for continuous inspection and maintenance of the project works during periods of low water, all without cost to the United States.

(3) A reserve supply of materials needed during a flood emergency shall be kept on hand at all times.

(4) No encroachment or trespass which will adversely affect the efficient operation or maintenance of the project works shall be permitted upon the rights-of-way for the protective facilities.

(5) No improvement shall be passed over, under, or through the walls, levees, improved channels or floodways, nor shall any excavation or construction be permitted within the limits of the project right-of-way, nor shall any change be made in any feature of the works without prior determination by the District Engineer of the Department of the Army or his authorized representative that such improvement, excavation, construction, or alteration will not adversely affect the functioning of the protective facilities. Such improvements or alterations as may be found to be desirable and permissible under the above determination shall be constructed in accordance with standard engineering practice. Advice regarding the effect of proposed improvements or alterations on the functioning of the project and information concerning methods of construction acceptable under standard engineering practice shall be obtained from the District Engineer or, if otherwise obtained, shall be submitted for his approval. Drawings or prints showing such improvements or alterations as finally constructed shall be furnished the District Engineer after completion of the work.

(6) It shall be the duty of the superintendent to submit a semiannual report to the District Engineer covering inspection, maintenance, and operation of the protective works.

(7) The District Engineer or his authorized representatives shall have access at all times to all portions of the protective works.

(8) Maintenance measures or repairs which the District Engineer deems necessary shall be promptly taken or made.

(9) Appropriate measures shall be taken by local authorities to insure that the activities of all local organizations operating public or private facilities connected with the protective works are coordinated with those of the Superintendent's organization during flood periods.

(10) The Department of the Army will furnish local interests with an Operation and Maintenance Manual for each completed project, or separate useful part thereof, to assist them in carrying out their obligations under this part.

(b) *Levees*—(1) *Maintenance*. The Superintendent shall provide at all times such maintenance as may be required to insure serviceability of the structures in time of flood. Measures shall be taken to promote the growth of sod,

exterminate burrowing animals, and to provide for routine mowing of the grass and weeds, removal of wild growth and drift deposits, and repair of damage caused by erosion or other forces. Where practicable, measures shall be taken to retard bank erosion by planting of willows or other suitable growth on areas riverward of the levees. Periodic inspections shall be made by the Superintendent to insure that the above maintenance measures are being effectively carried out and, further, to be certain that:

(i) No unusual settlement, sloughing, or material loss of grade or levee cross section has taken place;

(ii) No caving has occurred on either the land side or the river side of the levee which might affect the stability of the levee section;

(iii) No seepage, saturated areas, or sand boils are occurring;

(iv) Toe drainage systems and pressure relief wells are in good working condition, and that such facilities are not becoming clogged;

(v) Drains through the levees and gates on said drains are in good working condition;

(vi) No revetment work or riprap has been displaced, washed out, or removed;

(vii) No action is being taken, such as burning grass and weeds during inappropriate seasons, which will retard or destroy the growth of sod;

(viii) Access roads to and on the levee are being properly maintained;

(ix) Cattle guards and gates are in good condition;

(x) Crown of levee is shaped so as to drain readily, and roadway thereon, if any, is well shaped and maintained;

(xi) There is no unauthorized grazing or vehicular traffic on the levees;

(xii) Encroachments are not being made on the levee right-of-way which might endanger the structure or hinder its proper and efficient functioning during times of emergency.

Such inspections shall be made immediately prior to the beginning of the flood season; immediately following each major high water period, and otherwise at intervals not exceeding 90 days, and such intermediate times as may be necessary to insure the best possible care of the levee. Immediate steps will be taken to correct dangerous conditions disclosed by such inspections. Regular maintenance repair measures shall be accomplished during the appropriate season as scheduled by the Superintendent.

(2) *Operation*. During flood periods the levee shall be patrolled continuously to locate possible sand boils or unusual wetness of the landward slope and to be certain that:

(i) There are no indications of slides or sloughs developing;

(ii) Wave wash or scouring action is not occurring;

(iii) No low reaches of leave exist which may be overtopped;

(iv) No other conditions exist which might endanger the structure.

Appropriate advance measures will be taken to insure the availability of adequate labor and materials to meet all contingencies. Immediate steps will be taken to control any condition which endangers the levee and to repair the damaged section.

(c) *Flood walls*—(1) *Maintenance*. Periodic inspections shall be made by the Superintendent to be certain that:

(i) No seepage, saturated areas, or sand boils are occurring;

(ii) No undue settlement has occurred which affects the stability of the wall or its water tightness;

(iii) No trees exist, the roots of which might extend under the wall and offer accelerated seepage paths;

(iv) The concrete has not undergone cracking, chipping, or breaking to an extent which might affect the stability of the wall or its water tightness;

(v) There are no encroachments upon the right-of-way which might endanger the structure or hinder its functioning in time of flood;

(vi) Care is being exercised to prevent accumulation of trash and debris adjacent to walls, and to insure that no fires are being built near them;

(vii) No bank caving conditions exist riverward of the wall which might endanger its stability;

(viii) Toe drainage systems and pressure relief wells are in good working condition, and that such facilities are not becoming clogged.

Such inspections shall be made immediately prior to the beginning of the flood season, immediately following

Attachment E - Part 1, USACE Interim OMRR&R Manual

each major high water period, and otherwise at intervals not exceeding 90 days. Measures to eliminate encroachments and effect repairs found necessary by such inspections shall be undertaken immediately. All repairs shall be accomplished by methods acceptable in standard engineering practice.

(2) *Operation*. Continuous patrol of the wall shall be maintained during flood periods to locate possible leakage at monolith joints or seepage underneath the wall. Floating plant or boats will not be allowed to lie against or tie up to the wall. Should it become necessary during a flood emergency to pass anchor cables over the wall, adequate measures shall be taken to protect the concrete and construction joints. Immediate steps shall be taken to correct any condition which endangers the stability of the wall.

(d) *Drainage structures*—(1) *Maintenance*. Adequate measures shall be taken to insure that inlet and outlet channels are kept open and that trash, drift, or debris is not allowed to accumulate near drainage structures. Flap gates and manually operated gates and valves on drainage structures shall be examined, oiled, and trial operated at least once every 90 days. Where drainage structures are provided with stop log or other emergency closures, the condition of the equipment and its housing shall be inspected regularly and a trial installation of the emergency closure shall be made at least once each year. Periodic inspections shall be made by the Superintendent to be certain that:

(i) Pipes, gates, operating mechanism, riprap, and headwalls are in good condition;

(ii) Inlet and outlet channels are open;

(iii) Care is being exercised to prevent the accumulation of trash and debris near the structures and that no fires are being built near bituminous coated pipes;

(iv) Erosion is not occurring adjacent to the structure which might endanger its water tightness or stability.

Immediate steps will be taken to repair damage, replace missing or broken parts, or remedy adverse conditions disclosed by such inspections.

(2) *Operation*. Whenever high water conditions impend, all gates will be inspected a short time before water reaches the invert of the pipe and any object which might prevent closure of the gate shall be removed. Automatic gates shall be closely observed until it has been ascertained that they are securely closed. Manually operated gates and valves shall be closed as necessary to prevent inflow of flood water. All drainage structures in levees shall be inspected frequently during floods to ascertain whether seepage is taking place along the lines of their contact with the embankment. Immediate steps shall be taken to correct any adverse condition.

(e) *Closure structures*—(1) *Maintenance*. Closure structures for traffic openings shall be inspected by the Superintendent every 90 days to be certain that:

(i) No parts are missing;

(ii) Metal parts are adequately covered with paint;

(iii) All movable parts are in satisfactory working order;

(iv) Proper closure can be made promptly when necessary;

(v) Sufficient materials are on hand for the erection of sand bag closures and that the location of such materials will be readily accessible in times of emergency.

Tools and parts shall not be removed for other use. Trial erections of one or more closure structures shall be made once each year, alternating the structures chosen so that each gate will be erected at least once in each 3-year period. Trial erection of all closure structures shall be made whenever a change is made in key operating personnel. Where railroad operation makes trial erection of a closure structure infeasible, rigorous inspection and drill of operating personnel may be substituted therefor. Trial erection of sand bag closures is not required. Closure materials will be carefully checked prior to and following flood periods, and damaged or missing parts shall be repaired or replaced immediately.

(2) *Operation*. Erection of each movable closure shall be started in sufficient time to permit completion before flood waters reach the top of the structure sill. Information regarding the

proper method of erecting each individual closure structure, together with an estimate of the time required by an experienced crew to complete its erection will be given in the Operation and Maintenance Manual which will be furnished local interests upon completion of the project. Closure structures will be inspected frequently during flood periods to ascertain that no undue leakage is occurring and that drains provided to care for ordinary leakage are functioning properly. Boats or floating plant shall not be allowed to tie up to closure structures or to discharge passengers or cargo over them.

(f) *Pumping plants*—(1) *Maintenance.* Pumping plants shall be inspected by the Superintendent at intervals not to exceed 30 days during flood seasons and 90 days during off-flood seasons to insure that all equipment is in order for instant use. At regular intervals, proper measures shall be taken to provide for cleaning plant, buildings, and equipment, repainting as necessary, and lubricating all machinery. Adequate supplies of lubricants for all types of machines, fuel for gasoline or diesel powered equipment, and flash lights or lanterns for emergency lighting shall be kept on hand at all times. Telephone service shall be maintained at pumping plants. All equipment, including switch gear, transformers, motors, pumps, valves, and gates shall be trial operated and checked at least once every 90 days. Megger tests of all insulation shall be made whenever wiring has been subjected to undue dampness and otherwise at intervals not to exceed one year. A record shall be kept showing the results of such tests. Wiring disclosed to be in an unsatisfactory condition by such tests shall be brought to a satisfactory condition or shall be promptly replaced. Diesel and gasoline engines shall be started at such intervals and allowed to run for such length of time as may be necessary to insure their serviceability in times of emergency. Only skilled electricians and mechanics shall be employed on tests and repairs. Operating personnel for the plant shall be present during tests. Any equipment removed from the station for repair or replacement shall be returned or replaced as soon as practicable and shall be trial operated after reinstallation. Repairs requiring removal of equipment from the plant shall be made during off-flood seasons insofar as practicable.

(2) *Operation.* Competent operators shall be on duty at pumping plants whenever it appears that necessity for pump operation is imminent. The operator shall thoroughly inspect, trial operate, and place in readiness all plant equipment. The operator shall be familiar with the equipment manufacturers' instructions and drawings and with the ''Operating Instructions'' for each station. The equipment shall be operated in accordance with the abovementioned ''Operating Instructions'' and care shall be exercised that proper lubrication is being supplied all equipment, and that no overheating, undue vibration or noise is occurring. Immediately upon final recession of flood waters, the pumping station shall be thoroughly cleaned, pump house sumps flushed, and equipment thoroughly inspected, oiled and greased. A record or log of pumping plant operation shall be kept for each station, a copy of which shall be furnished the District Engineer following each flood.

(g) *Channels and floodways*—(1) *Maintenance.* Periodic inspections of improved channels and floodways shall be made by the Superintendent to be certain that:

(i) The channel or floodway is clear of debris, weeds, and wild growth;

(ii) The channel or floodway is not being restricted by the depositing of waste materials, building of unauthorized structures or other encroachments;

(iii) The capacity of the channel or floodway is not being reduced by the formation of shoals;

(iv) Banks are not being damaged by rain or wave wash, and that no sloughing of banks has occurred;

(v) Riprap sections and deflection dikes and walls are in good condition;

(vi) Approach and egress channels adjacent to the improved channel or floodway are sufficiently clear of obstructions and debris to permit proper functioning of the project works.

Such inspections shall be made prior to the beginning of the flood season and otherwise at intervals not to exceed 90 days. Immediate steps will be taken to

Attachment E - Part 1, USACE Interim OMRR&R Manual

remedy any adverse conditions disclosed by such inspections. Measures will be taken by the Superintendent to promote the growth of grass on bank slopes and earth deflection dikes. The Superintendent shall provide for periodic repair and cleaning of debris basins, check dams, and related structures as may be necessary.

(2) *Operation*. Both banks of the channel shall be patrolled during periods of high water, and measures shall be taken to protect those reaches being attacked by the current or by wave wash. Appropriate measures shall be taken to prevent the formation of jams of ice or debris. Large objects which become lodged against the bank shall be removed. The improved channel or floodway shall be thoroughly inspected immediately following each major high water period. As soon as practicable thereafter, all snags and other debris shall be removed and all damage to banks, riprap, deflection dikes and walls, drainage outlets, or other flood control structures repaired.

(h) *Miscellaneous facilities*—(1) *Maintenance*. Miscellaneous structures and facilities constructed as a part of the protective works and other structures and facilities which function as a part of, or affect the efficient functioning of the protective works, shall be periodically inspected by the Superintendent and appropriate maintenance measures taken. Damaged or unserviceable parts shall be repaired or replaced without delay. Areas used for ponding in connection with pumping plants or for temporary storage of interior run-off during flood periods shall not be allowed to become filled with silt, debris, or dumped material. The Superintendent shall take proper steps to prevent restriction of bridge openings and, where practicable, shall provide for temporary raising during floods of bridges which restrict channel capacities during high flows.

(2) *Operation*. Miscellaneous facilities shall be operated to prevent or reduce flooding during periods of high water. Those facilities constructed as a part of the protective works shall not be used for purposes other than flood protection without approval of the District Engineer unless designed therefor.

(Sec. 3, 49 Stat. 1571, as amended; 33 U.S.C. 701c)

[9 FR 9999, Aug. 17, 1944; 9 FR 10203, Aug. 22, 1944]

§ 208.11 Regulations for use of storage allocated for flood control or navigation and/or project operation at reservoirs subject to prescription of rules and regulations by the Secretary of the Army in the interest of flood control and navigation.

(a) *Purpose*. This regulation prescribes the responsibilities and general procedures for regulating reservoir projects capable of regulation for flood control or navigation and the use of storage allocated for such purposes and provided on the basis of flood control and navigation, except projects owned and operated by the Corps of Engineers; the International Boundary and Water Commission, United States and Mexico; and those under the jurisdiction of the International Joint Commission, United States, and Canada, and the Columbia River Treaty. The intent of this regulation is to establish an understanding between project owners, operating agencies, and the Corps of Engineers.

(b) *Responsibilities*. The basic responsibilities of the Corps of Engineers regarding project operation are set out in the cited authority and described in the following paragraphs:

(1) Section 7 of the Flood Control Act of 1944 (58 Stat. 890, 33 U.S.C. 709) directs the Secretary of the Army to prescribe regulations for flood control and navigation in the following manner:

> Hereafter, it shall be the duty of the Secretary of War to prescribe regulations for the use of storage allocated for flood control or navigation at all reservoirs constructed wholly or in part with Federal funds provided on the basis of such purposes, and the operation of any such project shall be in accordance with such regulations: *Provided,* That this section shall not apply to the Tennessee Valley Authority, except that in case of danger from floods on the lower Ohio and Mississippi Rivers the Tennessee Valley Authority is directed to regulate the release of water from the Tennessee River into the Ohio River in accordance with such instructions as may be issued by the War Department.

EXHIBIT D

Project Agreements

Attachment E - Part 1, USACE Interim OMRR&R Manual

338930

AGREEMENT

THIS AGREEMENT, entered into this _____ day of _____, 1973, between THE WESTERN PACIFIC RAILROAD COMPANY, a corporation, hereinafter called "Railroad", and CENTRAL SANITATION DISTRICT OF SACRAMENTO COUNTY, a political subdivision of the State of California, hereinafter called "District";

R E C I T A L S

Railroad and District have agreed upon the construction, operation and maintenance of two spur tracks with a total length of 1,205 feet connecting to Railroad's main track at Station 1943+07, in the County of Sacramento, State of California, as shown by red and green lines on the print attached hereto marked Exhibit "A" and by reference made a part hereof.

The parties hereto desire to set forth by written instrument their understandings and agreements with reference thereto;

NOW THEREFORE, it is mutually agreed by and between the parties as follows, to wit:

1. Railroad will, at the sole cost and expense of District, construct a portion of said 1,205 foot spur tracks as shown by the red line on said Exhibit "A". The

estimated cost of said construction is THIRTY-FIVE THOUSAND FOUR HUNDRED AND 00/100 DOLLARS ($35,400.00), and District agrees to pay to Railroad said actual cost thereof, whether said cost is more or less than said estimate. Railroad shall maintain that portion of said track 140 feet in length, shown colored in red of said Exhibit "A", at the sole expense of District during the period of time specified by paragraph 6 hereof. District shall construct, own and maintain that portion of said tracks shown colored in green on said Exhibit "A".

2. District will furnish, free of cost to Railroad the right of way for said tracks except so much of said right of way as is now owned by Railroad, and Railroad shall have the right, free from any cost or charge whatsoever, to enter upon said right of way so furnished to operate said track thereon.

3. Railroad agrees to operate said tracks and to serve District thereover, subject to the terms and conditions of this agreement, and to any lawful charges that may be made by Railroad for such service; Railroad shall have the right to use the same but not to the detriment of District.

4. Should District cease to do business on said tracks for a period of one (1) year, or should District break any of its agreements herein contained, or should

Railroad be required or permitted by law, ordinance, regulation or order of Federal, State or Municipal Government, or any lawfully constituted public authority having jurisdiction in the premises, to discontinue the operation of said track, or to change its track in such a manner as to render it impracticable, in the judgment of Railroad, to continue to operate said tracks, Railroad after one hundred eighty (180) days' notice in writing, may terminate this agreement and remove its track material and cease operating said track, it being understood, however, that District shall have the right to have track material located on the right of way of Railroad, which was paid for by District, taken up and delivered to District (at the expense of District if performed by Railroad's forces) except to the extent that the cost of such track material shall have been refunded to District under Paragraph 6 hereof. IT IS FURTHER UNDERSTOOD that no such termination shall release District from any liability or obligation under this agreement, whether of indemnity or otherwise, resulting from acts, omissions or events happening prior to the date of termination.

5. The minimum clearances between the center line of such tracks and piles of material, buildings and structures,

including platforms, shall conform with such rules and regulations as may now or hereafter be promulgated by the Public Utilities Commission of the State of California, or by other lawful authority prescribing clearances between industrial tracks and the sides - or nearest projection - of buildings, structures, and piles of material, and District will not pile or permit to be piled, any material, or erect or permit to be erected, any building or structure in violation of such rules and regulations. District also agrees that no pipe, conduit, structure, opening, excavation or debris of any kind whatsoever shall be made, placed or allowed to exist beneath or upon or in the vicinity of said track beyond the boundary line of the land of Railroad without first giving Railroad written notice thereof, it being the intent of this paragraph that District shall keep and maintain said track and the area adjacent thereto in a safe condition for use by the employees of Railroad in providing rail service. District further agrees to maintain walkway areas along Railroad tracks on its property in conformance with such rules and regulations as may now or hereafter be promulgated by the Public Utilities Commission of the State of California, or by any other lawful authority. In case of the breach of any obligation herein, in this paragraph contained, District assumes and agrees to indemnify Railroad against all liability for loss, damage, injury and/

or death arising therefrom. Present clearance requirements of General Order 26-D of the Public Utilities Commission are as shown on diagram marked Exhibit "B" attached hereto. Present minimum walkway standards for industrial trackage as prescribed by General Order 118 of said Commission are as shown on diagram marked Exhibit "C", attached hereto.

6. The cost of that portion of said track shown colored in red on said Exhibit "A" is estimated to be THIRTY-FIVE THOUSAND FOUR HUNDRED and NO/100 DOLLARS ($35,400.00). Railroad agrees that it will refund to District for a period of ten (10) years from the date said track is put into use, or until the actual cost of that portion of said track, shown colored in red on said Exhibit "A" has been refunded, the following sums:

(a) $7.00 for each car moving from, to or via Wendover, Utah.

(b) $4.50 for each car moving via Bieber, Lassen County, California.

(c) $3.00 for any other car, inbound or outbound, over said track on which Railroad receives a line haul.

Upon the refunding of the actual cost of said portion of said track shown colored in red on said Exhibit "A", or upon the expiration of said ten-year period, or in the event this agreement is terminated under the provisions of paragraph 4, Railroad will become the owner of said portion of said track shown colored in red on said Exhibit "A", and thereafter

shall maintain the same at its own cost and expense.

7. This Agreement shall be binding upon the successors and assigns of Railroad, and upon the assigns of District.

IN WITNESS WHEREOF, the parties hereto have caused these presents to be executed the day and year first above written.

THE WESTERN PACIFIC RAILROAD COMPANY

By _____

Attest _____
Secretary

CENTRAL SANITATION DISTRICT OF SACRAMENTO COUNTY, a political subdivision of the State of California

By _____
Chairman of the Board of Supervisors and ex-officio Chairman of the Board of Directors of CENTRAL SANITATION DISTRICT OF SACRAMENTO COUNTY, a political subdivision of the STATE OF CALIFORNIA

MAR 2 3 1973

Attest: _____
Clerk of the Board of Supervisors and ex-officio Secretary of the Board of Directors of CENTRAL SANITATION DISTRICT OF SACRAMENTO COUNTY, a political subdivision of the State of California

Attachment E - Part 1, USACE Interim OMRR&R Manual

SUPPLEMENTARY SPUR TRACK AGREEMENT

AUDITOR'S DOCUMENT NO.

THIS AGREEMENT, entered into this 13th day of June, 1977, between THE WESTERN PACIFIC RAILROAD COMPANY, a corporation, hereinafter called "Railroad", and SACRAMENTO REGIONAL COUNTY SANITATION DISTRICT, a political subdivision of the State of California, hereinafter called "district",

RECITALS:

Whereas, Railroad and Central Sanitation District of Sacramento County are parties to that certain spur track agreement dated March 26, 1973 relating to the construction, operation, maintenance and ownership of two spur tracks having a total combined length of 1,205 feet and connecting to Railroad's main track at Station 1943+07 in the County of Sacramento, State of California; and

Whereas, Sacramento Regional County Sanitation District has succeeded to the interest of and assumed all obligations of Central Sanitation District of Sacramento County under that certain spur track agreement dated March 26, 1973; and

Whereas the parties desire by this agreement to amend the agreement of March 26, 1973 by substituting the print attached hereto, marked Exhibit "A" and by reference incorporated herein for the print attached to said agreement of March 26, 1973 and to the extent as hereinafter set forth and in no other respect.

AGREEMENT:

NOW THEREFORE, it is mutually agreed by and between the parties hereto that the agreement of March 26, 1973, should be amended as follows:

1. The first paragraph of the Recitals is hereby

Attachment E - Part 1, USACE Interim OMRR&R Manual

amended to read as follows:

> Railroad and District have agreed upon the construction, operation and maintenance of spur tracks having a total length of 8,265 feet more or less connecting to Railroad's main track at Milepost 129.7 in the County of Sacramento, State of California as shown by red and green lines on the print attached hereto marked Exhibit "A" and by reference made a part hereof.

2. The first sentence of paragraph number "1" is hereby amended to read as follows:

> Railroad will, at the sole cost and expense of District construct that portion of said 8,265 feet of spur tracks as shown by the red line on said Exhibit "A".

3. In all other respects said agreement of March 26, 1973 remains unchanged and in full force and effect.

IN WITNESS WHEREOF, the parties hereto have caused these presents to be executed the day and year first above written.

THE WESTERN PACIFIC RAILROAD COMPANY

By _____
VICE PRESIDENT-OPERATIONS

Attest: _____
SECRETARY

SACRAMENTO REGIONAL COUNTY SANITATION DISTRICT, a political subdivision of the State of California

By _____
Title:

Attest: _____
Title

RESOLTUION NO. SR-150

RESOLUTION OF THE SACRAMENTO REGIONAL COUNTY SANITATION DISTRICT AUTHORIZING THE CHAIRMAN OF SAID DISTRICT TO ENTER INTO A SUPPLEMENTARY SPUR TRACT AGREEMENT WITH WESTERN PACIFIC RAILROAD COMPANY

BE IT RESOLVED AND ORDERED that the Chairman of the Board of Directors of SACRAMENTO REGIONAL COUNTY SANITATION DISTRICT be and he is hereby authorized and directed to execute a SUPPLEMENTARY SPUR TRACK AGREEMENT, in the form hereto attached, on behalf of the SACRAMENTO REGIONAL COUNTY SANITATION DISTRICT, a political subdivision of the State of California, with WESTERN PACIFIC RAILROAD COMPANY to amend Agreement of March 26, 1973 between the parties by substituting the print attached to said Supplementary Spur Track Agreement, marked Exhibit " A" for the print attached to said Agreement of March 26, 1973, and to do and perform everything necessary to carry out the purpose of this Resolution.

On a motion by Director Isenberg, seconded by Director Kloss, the foregoing Resolution was passed and adopted by the Board of Directors of the Sacramento Regional County Sanitation District, this 13th day of June, 1977 by the following vote, to wit:

AYES: Directors, Goodel, Isenberg, Kloss, Wade

NOES: Directors, None

ABSENT: Directors, Melarkey, Sheedy, Smoley

FILED

JUN 13 1977

BOARD OF DIRECTORS

Clerk of the Board

(SEAL)

ATTEST: Clerk of the Board of Directors

Chairman, Board of Directors, of SACRAMENTO REGIONAL COUNTY SANITATION DISTRICT

PROJECT COOPERATION AGREEMENT BETWEEN THE DEPARTMENT OF THE ARMY AND THE STATE OF CALIFORNIA, THE RECLAMATION BOARD FOR CONSTRUCTION OF THE SOUTH SACRAMENTO COUNTY STREAMS, CA, SAN JOAQUIN RIVER BASIN, FLOOD CONTROL PROJECT

THIS AGREEMENT is entered into this 20th day of May, 2005, by and between the DEPARTMENT OF THE ARMY (hereinafter the "Government"), represented by the U.S. Army Engineer for Sacramento District, and the STATE OF CALIFORNIA, represented by the President of THE RECLAMATION BOARD (hereinafter the "Non-Federal Sponsor").

WITNESSETH, THAT:

WHEREAS, construction of the San Joaquin River Basin, South Sacramento County Streams project in Sacramento County, California was authorized by Section 101(a)(8) of the Water Resources Development Act of 1999 (Public Law 106-53).

WHEREAS, the Government and the Non-Federal Sponsor desire to enter into a Project Cooperation Agreement for construction of the flood control portion only of the San Joaquin River Basin, South Sacramento County Streams project (hereinafter the "Project", as defined in Article I.A. of this Agreement);

WHEREAS, Section 103 of the Water Resources Development Act of 1986, Public Law 99-662, as amended, specifies the cost-sharing requirements applicable to the Project;

WHEREAS, Section 221 of the Flood Control Act of 1970, Public Law 91-611, as amended, and Section 103 of the Water Resources Development Act of 1986, Public Law 99-662, as amended, provide that the Secretary of the Army shall not commence construction of any water resources project, or separable element thereof, until the Non-Federal Sponsor has entered into a written agreement to furnish its required cooperation for the project or separable element;

STATE OF CALIFORNIA
STANDARD AGREEMENT
STD 213 (Rev 06/03)

Attachment E - Part 1, USACE Interim OMRR&R Manual

AGREEMENT NUMBER
4600002777
REGISTRATION NUMBER

1. This Agreement is entered into between the State Agency and the Contractor named below:

STATE AGENCY'S NAME
Department of Water Resources/The Reclamation Board

CONTRACTOR'S NAME
The Department of the Army Corps of Engineers

2. The term of this Agreement is: February 15, 2005 through Notice of completion
This Agreement shall not become effective until approved by the Department of General Services.

3. The maximum amount of this Agreement is: $ 93,692,000.00
Ninety three million and six-ninety two thousand dollars and no cents.

4. The parties agree to comply with the terms and conditions of the following exhibits which are by this reference made a part of the Agreement.

See Project Cooperation Agreement Between the State of California The Reclamation Board for construction of the South Sacramento County Streams Project, CA, San Joaquin River Basin, Flood Control Project, which is attached and made a part of this Agreement by this reference.

Signatures appear on page 34 of the Agreement.

IN WITNESS WHEREOF, this Agreement has been executed by the parties hereto.

CONTRACTOR		California Department of General Services Use Only
CONTRACTOR'S NAME *(if other than an individual, state whether a corporation, partnership, etc.)*		
BY *(Authorized Signature)*	DATE SIGNED *(Do not type)*	
PRINTED NAME AND TITLE OF PERSON SIGNING		
ADDRESS		
STATE OF CALIFORNIA		
AGENCY NAME		
BY *(Authorized Signature)*	DATE SIGNED *(Do not type)*	
PRINTED NAME AND TITLE OF PERSON SIGNING		
ADDRESS		

MAY 18 2005
DEPT OF GENERAL SERVICES

WHEREAS, Section 104 of the Water Resources Development Act of 1986, Public Law 99-662 authorizes the Assistant Secretary of the Army (Civil Works) to afford a credit for work accomplished by the Non-Federal Sponsor;

WHEREAS, the Non-Federal Sponsor does not qualify for a reduction of the maximum non-Federal cost share pursuant to the guidelines that implement Section 103(m) of the Water Resources Development Act of 1986, Public Law 99-662, as amended;

WHEREAS, Section 902 of Public Law 99-662 establishes the maximum amount of costs for the South Sacramento County Streams project for flood control, environmental restoration and recreation, and sets forth procedures for adjusting such maximum amount; and

WHEREAS, the Government and Non-Federal Sponsor have the full authority and capability to perform as hereinafter set forth and intend to cooperate in cost-sharing and financing of the construction of the Project in accordance with the terms of this Agreement.

NOW, THEREFORE, the Government and the Non-Federal Sponsor agree as follows:

ARTICLE I - DEFINITIONS AND GENERAL PROVISIONS

For purposes of this Agreement:

A. The term "Project" shall mean providing flood damage reduction to the Morrison Creek stream group and Beach-Stone lakes drainage basins in Sacramento County, CA. The project includes raising and extending the ring levee around the Sacramento Regional Wastewater Treatment Plant; raising the North Beach Lake levee; strengthening and raising levees or floodwalls on Morrison Creek and its major tributaries, Elder, Florin, and Unionhouse Creeks; modifying channels to increase capacity; retrofitting 17 bridges and removing one bridge; and associated environmental mitigation as generally described in the San Joaquin River Basin, South

Sacramento County Streams Final Feasibility Report with Appendices, dated March 1998, and Addendum to Final Feasibility Report dated September 1998, and approved by Chief of Engineers on 6 October, 1998 and the Limited Reevaluation Report approved by the Division Commander on 10 February 2005. The Project includes the Section 104 work described in Article I.K. of this Agreement.

B. The term "total project costs" shall mean all costs incurred by the Non-Federal Sponsor and the Government in accordance with the terms of this Agreement directly related to construction of the Project. Subject to the provisions of this Agreement, the term shall include, but is not necessarily limited to: continuing planning and engineering costs incurred after October 1, 1985; advanced engineering and design costs; preconstruction engineering and design costs; engineering and design costs during construction; the costs of investigations to identify the existence and extent of hazardous substances in accordance with Article XV.A. of this Agreement; costs of historic preservation activities in accordance with Article XVIII.A. of this Agreement; actual construction costs, including the costs of alteration, lowering, raising, or replacement and attendant removal of existing railroad bridges and approaches thereto; the credit amount for the Section 104 work performed by the Non-Federal Sponsor afforded in accordance with Article II.D.5. of this Agreement, supervision and administration costs; costs of participation in the Project Coordination Team in accordance with Article V of this Agreement; costs of contract dispute settlements or awards; the value of lands, easements, rights-of-way, relocations, and suitable borrow and dredged or excavated material disposal areas for which the Government affords credit in accordance with Article IV of this Agreement; and costs of audit in accordance with Article X of this Agreement. The term does not include any costs for operation, maintenance, repair, replacement, or rehabilitation; any costs due to betterments; or any costs of dispute resolution under Article VII of this Agreement.

C. The term "financial obligation for construction" shall mean a financial

obligation of the Government, a financial obligation of the Non-Federal Sponsor for Section 104 work, and work other than an obligation pertaining to the provision of lands, easements, rights-of-way, relocations, and borrow and dredged or excavated material disposal areas, that results or would result in a cost that is or would be included in total project costs.

D. The term "non-Federal proportionate share" shall mean the ratio of the Non-Federal Sponsor's total cash contribution required in accordance with Articles II.D.1. and II.D.3. of this Agreement to total financial obligations for construction, as projected by the Government.

E. The term "period of construction" shall mean the time from the date the Government first notifies the Non-Federal Sponsor in writing, in accordance with Article VI.B. of this Agreement, of the scheduled date for issuance of the solicitation for the first construction contract to the date that the U.S. Army Engineer for the Sacramento District (hereinafter the "District Engineer") notifies the Non-Federal Sponsor in writing of the Government's determination that construction of the Project is complete.

F. The term "highway" shall mean any public highway, roadway, street, or way, including any bridge thereof.

G. The term "relocation" shall mean providing a functionally equivalent facility to the owner of an existing utility, cemetery, highway or other public facility, or railroad (excluding existing railroad bridges and approaches thereto) when such action is authorized in accordance with applicable legal principles of just compensation or as otherwise provided in the authorizing legislation for the Project or any report referenced therein. Providing a functionally equivalent facility may take the form of alteration, lowering, raising, or replacement and attendant removal of the affected facility or part thereof.

H. The term "fiscal year" shall mean one fiscal year of the Government. The Government fiscal year begins on October 1 and ends on September 30.

I. The term "functional portion of the Project" shall mean a portion of the Project that is suitable for tender to the Non-Federal Sponsor to operate and maintain in advance of completion of the entire Project. For a portion of the Project to be suitable for tender, the District Engineer must notify the Non-Federal Sponsor in writing of the Government's determination that the portion of the Project is complete and can function independently and for a useful purpose, although the balance of the Project is not complete.

J. The term "betterment" shall mean a change in the design and construction of an element of the Project resulting from the application of standards that the Government determines exceed those that the Government would otherwise apply for accomplishing the design and construction of that element.

K. The term "Section 104 work" shall mean the planning, engineering design and construction of the Sacramento Regional Waste Water Treatment Plant ring levee and planning and engineering design of improvements to the North Beach Lake levee and Morrison Creek west levee to Mack Road approved by the Assistant Secretary of the Army (Civil Works) on September 12, 1996, and as described in Chapter 10 of the San Joaquin River Basin, South Sacramento County Streams Final Feasibility Report with Appendices, dated March 1998, and Addendum to Final Feasibility Report dated September 1998 and the Limited Reevaluation Report dated December 2004. The Section 104 work includes construction of the authorized improvements as well as planning, engineering, design, supervision and administration, and other activities associated with construction, but does not include the construction of betterments or the provision of lands, easements, rights-of-way, relocations, or suitable borrow and dredged or excavated material disposal areas associated with the Section 104 work.

ARTICLE II - OBLIGATIONS OF THE GOVERNMENT

AND THE NON-FEDERAL SPONSOR

A. The Government, subject to receiving funds appropriated by the Congress of the United States (hereinafter, the "Congress") and using those funds and funds provided by the Non-Federal Sponsor, shall expeditiously construct the Project (including alteration, lowering, raising, or replacement and attendant removal of existing railroad bridges and approaches thereto), applying those procedures usually applied to Federal projects, pursuant to Federal laws, regulations, and policies.

1. The Government shall afford the Non-Federal Sponsor the opportunity to review and comment on the solicitations for all contracts, including relevant plans and specifications, prior to the Government's issuance of such solicitations. The Government shall not issue the solicitation for the first construction contract until the Non-Federal Sponsor has confirmed in writing their willingness to proceed with the Project. To the extent possible, the Government shall afford the Non-Federal Sponsor the opportunity to review and comment on all contract modifications, including change orders, prior to the issuance to the contractor of a Notice to Proceed. In any instance where providing the Non-Federal Sponsor with notification of a contract modification or change order is not possible prior to issuance of the Notice to Proceed, the Government shall provide such notification in writing at the earliest date possible. To the extent possible, the Government also shall afford the Non-Federal Sponsor the opportunity to review and comment on all contract claims prior to resolution thereof. The Government shall consider in good faith the comments of the Non-Federal Sponsor, but the contents of solicitations, award of contracts, execution of contract modifications, issuance of change orders, resolution of contract claims, and performance of all work on the Project (whether the work is performed under contract or by Government personnel), shall be exclusively within the control of the Government.

2. Throughout the period of construction, the District Engineer shall

furnish the Non-Federal Sponsor with a copy of the Government's Written Notice of Acceptance of Completed Work for each contract for the Project.

3. Notwithstanding paragraph A.1. of this Article, if, upon the award of any contract for construction of the Project, cumulative financial obligations for construction would exceed $86,390,000 the Government and the Non-Federal Sponsor agree to defer award of that contract and all subsequent contracts for construction of the Project until such time as the Government and the Non-Federal Sponsor agree to proceed with further contract awards for the Project, but in no event shall the award of contracts be deferred for more than three years. Notwithstanding this general provision for deferral of contract awards, the Government, after consultation with the Non-Federal Sponsor, may award a contract or contracts after the Assistant Secretary of the Army (Civil Works) makes a written determination that the award of such contract or contracts must proceed in order to comply with law or to protect life or property from imminent and substantial harm.

B. The Non-Federal Sponsor may request the Government to accomplish betterments. Such requests shall be in writing and shall describe the betterments requested to be accomplished. If the Government in its sole discretion elects to accomplish the requested betterments or any portion thereof, it shall so notify the Non-Federal Sponsor in a writing that sets forth any applicable terms and conditions, which must be consistent with this Agreement. In the event of conflict between such a writing and this Agreement, this Agreement shall control. The Non-Federal Sponsor shall be solely responsible for all costs due to the requested betterments and shall pay all such costs in accordance with Article VI.C. of this Agreement.

C. When the District Engineer determines that the entire Project is complete or that a portion of the Project has become a functional portion of the Project, the District Engineer shall so notify the Non-Federal Sponsor in writing and furnish the Non-Federal Sponsor with an Operation, Maintenance, Repair,

Replacement, and Rehabilitation Manual (hereinafter the "OMRR&R Manual") and with copies of all of the Government's Written Notices of Acceptance of Completed Work for all contracts for the Project or the functional portion of the Project that have not been provided previously. Upon such notification, the Non-Federal Sponsor shall operate, maintain, repair, replace, and rehabilitate the entire Project or the functional portion of the Project in accordance with Article VIII of this Agreement.

D. The Non-Federal Sponsor shall contribute a minimum of 35 percent, but not to exceed 50 percent, of total project costs in accordance with the provisions of this paragraph.

1. The Non-Federal Sponsor shall provide a cash contribution equal to five percent of total project costs in accordance with Article VI.B. of this Agreement.

2. In accordance with Article III of this Agreement, the Non-Federal Sponsor shall provide all lands, easements, rights-of-way, and suitable borrow and dredged or excavated material disposal areas that the Government determines the Non-Federal Sponsor must provide for the construction, operation, and maintenance of the Project, and shall perform or ensure performance of all relocations that the Government determines to be necessary for the construction, operation, and maintenance of the Project.

3. If the Government projects that the value of the Non-Federal Sponsor's contributions under paragraphs D.1. and D.2. of this Article and Articles V, X, and XV.A. of this Agreement will be less than 35 percent of total project costs, the Non-Federal Sponsor shall provide an additional cash contribution, in accordance with Article VI.B. of this Agreement, in the amount necessary to make the Non-Federal Sponsor's total contribution equal to 35 percent of total project costs.

4. If the Government determines that the value of the Non-Federal

Sponsor's contributions provided under paragraphs D.2. and D.3. of this Article and Articles V, X, and XV.A. of this Agreement has exceeded 45 percent of total project costs, the Government, subject to the availability of funds, shall reimburse the Non-Federal Sponsor for any such value in excess of 45 percent of total project costs. After such a determination, the Government, in its sole discretion, may provide any remaining Project lands, easements, rights-of-way, and suitable borrow and dredged or excavated material disposal areas and perform any remaining Project relocations on behalf of the Non-Federal Sponsor.

5. The Congress, in authorizing the Project, included authority for the Assistant Secretary of the Army (Civil Works) to afford credit for Section 104 work in the estimated amount of $ 5,910,000. The affording of such credit shall be subject to an on-site inspection by the Government to verify that the work was accomplished in a satisfactory manner and is suitable for inclusion in the Project. The actual amount of credit shall be subject to an audit in accordance with Article X.C. of this Agreement to determine reasonableness, allocability, and allowability of costs. To afford such credit, the Government shall apply the credit amount toward any additional cash contribution required under paragraph D.3. of this Article. If the credit amount exceeds the amount of such additional cash contribution, the Government, subject to the availability of funds, shall, on behalf of the Non-Federal Sponsor, provide Project lands, easements, rights-of-way, and suitable borrow and dredged or excavated material disposal areas, or perform Project relocations, equal in value to such excess credit amount. As an alternative, and in its sole discretion, the Government may make a payment to the Non-Federal Sponsor in an amount equal to such excess credit amount, up to the value of contributions under paragraph D.2. of this Article and Articles V, X, and XV.A. of this Agreement. In no event shall the credit amount afforded exceed the lesser of 45 percent of total project costs or the value of the Non-Federal Sponsor's contributions required under paragraphs D.2. and D.3. of this Article

and Articles V, X, and XV.A. of this Agreement.

E. The Non-Federal Sponsor may request the Government to provide lands, easements, rights-of-way, and suitable borrow and dredged or excavated material disposal areas or perform relocations on behalf of the Non-Federal Sponsor. Such requests shall be in writing and shall describe the services requested to be performed. If in its sole discretion the Government elects to perform the requested services or any portion thereof, it shall so notify the Non-Federal Sponsor in a writing that sets forth any applicable terms and conditions, which must be consistent with this Agreement. In the event of conflict between such a writing and this Agreement, this Agreement shall control. The Non-Federal Sponsor shall be solely responsible for all costs of the requested services and shall pay all such costs in accordance with Article VI.C. of this Agreement. Notwithstanding the provision of lands, easements, rights-of-way, and suitable borrow and dredged or excavated material disposal areas or performance of relocations by the Government, the Non-Federal Sponsor shall be responsible, as between the Government and the Non-Federal Sponsor, for the costs of cleanup and response in accordance with Article XV.C. of this Agreement.

F. The Government shall perform a final accounting in accordance with Article VI.D. of this Agreement to determine the contributions provided by the Non-Federal Sponsor in accordance with paragraphs B., D., and E. of this Article and Articles V, X, and XV.A. of this Agreement and to determine whether the Non-Federal Sponsor has met its obligations under paragraphs B., D., and E. of this Article.

G. The Non-Federal Sponsor shall not use Federal funds to meet the Non-Federal Sponsor's share of total project costs under this Agreement unless the Federal granting agency verifies in writing that the expenditure of such funds is expressly authorized by statute.

H. The Non-Federal Sponsor agrees to participate in and comply with applicable Federal floodplain management and flood insurance programs.

I. Not less than once each year the Non-Federal Sponsor shall inform affected interests of the extent of protection afforded by the Project.

J. The Non-Federal Sponsor shall publicize flood plain information in the area concerned and shall provide this information to zoning and other regulatory agencies for their use in preventing unwise future development in the flood plain and in adopting such regulations as may be necessary to prevent unwise future development and to ensure compatibility with protection levels provided by the Project.

K. The Non-Federal Sponsor shall comply with Section 402 of the Water Resources Development Act of 1986, as amended (33 U.S.C. 701b-12), which requires a Non-Federal interest to have prepared within one year after the date of signing this Agreement, a floodplain management plan. The plan shall be designed to reduce the impacts of future flood events in the project area, including but not limited to, addressing those measures to be undertaken by Non-Federal interests to preserve the level of flood protection provided by this Project. As required by Section 402, as amended, the Non-Federal interest shall implement such plan not later than one year after completion of construction of the Project. The Non-Federal Sponsor shall provide an information copy of the plan to the Government upon its preparation.

ARTICLE III - LANDS, RELOCATIONS, DISPOSAL AREAS, AND PUBLIC LAW 91-646 COMPLIANCE

A. The Government, after consultation with the Non-Federal Sponsor, shall determine the lands, easements, and rights-of-way required for the construction, operation, and maintenance of the Project, including those required for relocations, borrow materials, and dredged or excavated material disposal. The Government in a timely manner shall provide the Non-Federal Sponsor with general written descriptions, including maps as appropriate, of the lands, easements, and rights-of-way that the Government determines the Non-Federal Sponsor must provide, in detail

sufficient to enable the Non-Federal Sponsor to fulfill their obligations under this paragraph, and shall provide the Non-Federal Sponsor with a written notice to proceed with acquisition of such lands, easements, and rights-of-way. Prior to the end of the period of construction, the Non-Federal Sponsor shall acquire all lands, easements, and rights-of-way set forth in such descriptions. Furthermore, prior to issuance of the solicitation for each construction contract, the Non-Federal Sponsor shall provide the Government with authorization for entry to all lands, easements, and rights-of-way the Government determines the Non-Federal Sponsor must provide for that contract. For so long as the Project remains authorized, the Non-Federal Sponsor shall ensure that lands, easements, and rights-of-way that the Government determines to be required for the operation and maintenance of the Project and that were provided by the Non-Federal Sponsor are retained in public ownership for uses compatible with the authorized purposes of the Project.

B. The Government, after consultation with the Non-Federal Sponsor, shall determine the improvements required on lands, easements, and rights-of-way to enable the proper disposal of dredged or excavated material associated with the construction, operation, and maintenance of the Project. Such improvements may include, but are not necessarily limited to, retaining dikes, wasteweirs, bulkheads, embankments, monitoring features, stilling basins, and de-watering pumps and pipes. The Government in a timely manner shall provide the Non-Federal Sponsor with general written descriptions of such improvements in detail sufficient to enable the Non-Federal Sponsor to fulfill its obligations under this paragraph, and shall provide the Non-Federal Sponsor with a written notice to proceed with construction of such improvements. Prior to the end of the period of construction, the Non-Federal Sponsor shall provide all improvements set forth in such descriptions. Furthermore, prior to issuance of the solicitation for each Government construction contract, the Non-Federal Sponsor shall prepare plans and specifications for all improvements the Government determines to be required for the proper disposal of dredged or excavated material under that contract, submit such plans and specifications to the Government for approval, and provide such improvements in accordance

with the approved plans and specifications.

C. The Government, after consultation with the Non-Federal Sponsor, shall determine the relocations necessary for the construction, operation, and maintenance of the Project, including those necessary to enable the removal of borrow materials and the proper disposal of dredged or excavated material. The Government in a timely manner shall provide the Non-Federal Sponsor with general written descriptions, including maps as appropriate, of such relocations in detail sufficient to enable the Non-Federal Sponsor to fulfill its obligations under this paragraph, and shall provide the Non-Federal Sponsor with a written notice to proceed with such relocations. Prior to the end of the period of construction, the Non-Federal Sponsor shall perform or ensure the performance of all relocations as set forth in such descriptions. Furthermore, prior to issuance of the solicitation for each Government construction contract, the Non-Federal Sponsor shall prepare or ensure the preparation of plans and specifications for, and perform or ensure the performance of, all relocations the Government determines to be necessary for that contract.

D. The Non-Federal Sponsor in a timely manner shall provide the Government with such documents as are sufficient to enable the Government to determine the value of any contribution provided pursuant to paragraphs A., B., or C. of this Article. Upon receipt of such documents the Government, in accordance with Article IV of this Agreement and in a timely manner, shall determine the value of such contribution, include such value in total project costs, and afford credit for such value toward the Non-Federal Sponsor's share of total project costs.

E. The Non-Federal Sponsor shall comply with the applicable provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, Public Law 91-646, as amended by Title IV of the Surface Transportation and Uniform Relocation Assistance Act of 1987 (Public Law 100-17), and the Uniform Regulations contained in 49 C.F.R. Part 24, in acquiring lands, easements, and rights-of-way required for the construction, operation, and maintenance of the Project, including those necessary for

relocations, borrow materials, and dredged or excavated material disposal, and shall inform all affected persons of applicable benefits, policies, and procedures in connection with said Act.

ARTICLE IV - CREDIT FOR VALUE OF LANDS, RELOCATIONS, AND DISPOSAL AREAS

A. The Non-Federal Sponsor shall receive credit toward its share of total project costs for the value of the lands, easements, rights-of-way, and suitable borrow and dredged or excavated material disposal areas that the Non-Federal Sponsor must provide pursuant to Article III of this Agreement, and for the value of the relocations that the Non-Federal Sponsor must perform or for which it must ensure performance pursuant to Article III of this Agreement. However, the Non-Federal Sponsor shall not receive credit for the value of any lands, easements, rights-of-way, relocations, or borrow and dredged or excavated material disposal areas that have been provided previously as an item of cooperation for another Federal project. The Non-Federal Sponsor also shall not receive credit for the value of lands, easements, rights-of-way, relocations, or borrow and dredged or excavated material disposal areas to the extent that such items are provided using Federal funds unless the Federal granting agency verifies in writing that such credit is expressly authorized by statute.

B. For the sole purpose of affording credit in accordance with this Agreement, the value of lands, easements, and rights-of-way, including those necessary for relocations, borrow materials, and dredged or excavated material disposal, shall be the fair market value of the real property interests, plus certain incidental costs of acquiring those interests, as determined in accordance with the provisions of this paragraph.

1. Date of Valuation. The fair market value of lands, easements, or rights-of-way owned by the Non-Federal Sponsor on the effective date of this Agreement shall be the fair market value of such real property interests as of the date the Non-Federal Sponsor provides

the Government with authorization for entry thereto. However, for lands, easements, or rights-of-way owned by the Non-Federal Sponsor on the effective date of this Agreement that are required for the construction of the Section 104 work, fair market value shall be the value of such real property interests as of the date the Non-Federal Sponsor awards the first construction contract for the Section 104 work, or, if the Non-Federal Sponsor performs the construction with their own labor, the date that the Non-Federal Sponsor begins construction of the Section 104 work. The fair market value of lands, easements, or rights-of-way acquired by the Non-Federal Sponsor after the effective date of this Agreement shall be the fair market value of such real property interests at the time the interests are acquired.

2. General Valuation Procedure. Except as provided in paragraph B.3. of this Article, the fair market value of lands, easements, or rights-of-way shall be determined in accordance with paragraph B.2.a. of this Article, unless thereafter a different amount is determined to represent fair market value in accordance with paragraph B.2.b. of this Article.

a. The Non-Federal Sponsor shall obtain, for each real property interest, an appraisal that is prepared by a qualified appraiser who is acceptable to the Non-Federal Sponsor and the Government. The appraisal must be prepared in accordance with the applicable rules of just compensation, as specified by the Government. The fair market value shall be the amount set forth in the Non-Federal Sponsor's appraisal, if such appraisal is approved by the Government. In the event the Government does not approve the Non-Federal Sponsor's appraisal, the Non-Federal Sponsor may obtain a second appraisal, and the fair market value shall be the amount set forth in the Non-Federal Sponsor's second appraisal, if such appraisal is approved by the Government. In the event the Government does not approve the Non-Federal Sponsor's

second appraisal, or the Non-Federal Sponsor chooses not to obtain a second appraisal, the Government shall obtain an appraisal, and the fair market value shall be the amount set forth in the Government's appraisal, if such appraisal is approved by the Non-Federal Sponsor. In the event the Non-Federal Sponsor does not approve the Government's appraisal, the Government, after consultation with the Non-Federal Sponsor, shall consider the Government's and the Non-Federal Sponsor's appraisals and determine an amount based thereon, which shall be deemed to be the fair market value.

b. Where the amount paid or proposed to be paid by the Non-Federal Sponsor for the real property interest exceeds the amount determined pursuant to paragraph B.2.a. of this Article, the Government, at the request of the Non-Federal Sponsor, shall consider all factors relevant to determining fair market value and, in its sole discretion, after consultation with the Non-Federal Sponsor, may approve in writing an amount greater than the amount determined pursuant to paragraph B.2.a. of this Article, but not to exceed the amount actually paid or proposed to be paid. If the Government approves such an amount, the fair market value shall be the lesser of the approved amount or the amount paid by the Non-Federal Sponsor, but no less than the amount determined pursuant to paragraph B.2.a. of this Article.

3. Eminent Domain Valuation Procedure. For lands, easements, or rights-of-way acquired by eminent domain proceedings instituted after the effective date of this Agreement, the Non-Federal Sponsor shall, prior to instituting such proceedings, submit to the Government notification in writing of its intent to institute such proceedings and an appraisal of the specific real property interests to be acquired in such proceedings. The Government shall have 60 days after receipt of such a notice and appraisal within which to review the appraisal, if

not previously approved by the Government in writing.

a. If the Government previously has approved the appraisal in writing, or if the Government provides written approval of, or takes no action on, the appraisal within such 60-day period, the Non-Federal Sponsor shall use the amount set forth in such appraisal as the estimate of just compensation for the purpose of instituting the eminent domain proceeding.

b. If the Government provides written disapproval of the appraisal, including the reasons for disapproval, within such 60-day period, the Government and the Non-Federal Sponsor shall consult in good faith to promptly resolve the issues or areas of disagreement that are identified in the Government's written disapproval. If, after such good faith consultation, the Government and the Non-Federal Sponsor agree as to an appropriate amount, then the Non-Federal Sponsor shall use that amount as the estimate of just compensation for the purpose of instituting the eminent domain proceeding. If, after such good faith consultation, the Government and the Non-Federal Sponsor cannot agree as to an appropriate amount, then the Non-Federal Sponsor may use the amount set forth in its appraisal as the estimate of just compensation for the purpose of instituting the eminent domain proceeding.

c. For lands, easements, or rights-of-way acquired by eminent domain proceedings instituted in accordance with sub-paragraph B.3. of this Article, fair market value shall be either the amount of the court award for the real property interests taken, to the extent the Government determined such interests are required for the construction, operation, and maintenance of the Project, or the amount of any stipulated settlement or portion thereof that the Government approves in writing.

4. Incidental Costs. For lands, easements, or rights-of-way acquired by the Non-Federal Sponsor within a five-year period preceding the effective date of this Agreement, or at any time after the effective date of this Agreement, the value of the interest shall include the documented incidental costs of acquiring the interest, as determined by the Government, subject to an audit in accordance with Article X.C. of this Agreement to determine reasonableness, allocability, and allowability of costs. Such incidental costs shall include, but not necessarily be limited to, closing and title costs, appraisal costs, survey costs, attorney's fees, plat maps, and mapping costs, as well as the actual amounts expended for payment of any Public Law 91-646 relocation assistance benefits provided in accordance with Article III.E. of this Agreement.

C. After consultation with the Non-Federal Sponsor, the Government shall determine the value of relocations in accordance with the provisions of this paragraph.

1. For a relocation other than a highway, the value shall be only that portion of relocation costs that the Government determines is necessary to provide a functionally equivalent facility, reduced by depreciation, as applicable, and by the salvage value of any removed items.

2. For a relocation of a highway, the value shall be only that portion of relocation costs that would be necessary to accomplish the relocation in accordance with the design standard that the State of California would apply under similar conditions of geography and traffic load, reduced by the salvage value of any removed items.

3. Relocation costs shall include, but not necessarily be limited to, actual costs of performing the relocation; planning, engineering and design costs; supervision and administration costs; and documented incidental costs associated with performance of the relocation, but shall not include any costs due to betterments, as determined by the

Government, nor any additional cost of using new material when suitable used material is available. Relocation costs shall be subject to an audit in accordance with Article X.C. of this Agreement to determine reasonableness, allocability, and allowability of costs.

4. Any credit afforded for the value of relocations performed within the Project boundaries is subject to satisfactory compliance with applicable Federal labor laws covering non-Federal construction, including, but not limited to, 40 U.S.C. 3141-3148 and 40 U.S.C. 3701-3708 (revising, codifying and enacting without substantive change the provisions of the Davis-Bacon Act (formerly 40 U.S.C. 276a *et seq.*), the Contract Work Hours and Safety Standards Act (formerly 40 U.S.C. 327 *et seq.*) and the Copeland Anti-Kickback Act (formerly 40 U.S.C. 276c)). Crediting may be withheld, in whole or in part, as a result of the Non-Federal Sponsor's failure to comply with its obligations under these laws.

D. The value of the improvements made to lands, easements, and rights-of-way for the proper disposal of dredged or excavated material shall be the costs of the improvements, as determined by the Government, subject to an audit in accordance with Article X.C. of this Agreement to determine reasonableness, allocability, and allowability of costs. Such costs shall include, but not necessarily be limited to, actual costs of providing the improvements; planning, engineering and design costs; supervision and administration costs; and documented incidental costs associated with providing the improvements, but shall not include any costs due to betterments, as determined by the Government.

ARTICLE V - PROJECT COORDINATION TEAM

A. To provide for consistent and effective communication, the Non-Federal Sponsor and the Government, not later than 30 days after the effective date of this Agreement, shall appoint named senior representatives to a Project Coordination Team. Thereafter, the Project Coordination Team shall meet

regularly until the end of the period of construction. The Government's Project Manager and a counterpart named by the Non-Federal Sponsor shall co-chair the Project Coordination Team.

B. The Government's Project Manager and the Non-Federal Sponsor's counterpart shall keep the Project Coordination Team informed of the progress of construction and of significant pending issues and actions, and shall seek the views of the Project Coordination Team on matters that the Project Coordination Team generally oversees.

C. Until the end of the period of construction, the Project Coordination Team shall generally oversee the Project, including issues related to design; plans and specifications; scheduling; real property and relocation requirements; real property acquisition; contract awards and modifications; contract costs; the application of and compliance with 40 U.S.C. 3141-3148 and 40 U.S.C. 3701-3708 (revising, codifying and enacting without substantive change the provisions of the Davis-Bacon Act (formerly 40 U.S.C. 276a et seq.), the Contract Work Hours and Safety Standards Act (formerly 40 U.S.C. 327 et seq.) and the Copeland Anti-Kickback Act (formerly 40 U.S.C. 276c)) for relocations; the Government's cost projections; final inspection of the entire Project or functional portions of the Project; preparation of the proposed OMRR&R Manual; anticipated requirements and needed capabilities for performance of operation, maintenance, repair, replacement, and rehabilitation of the Project; and other related matters. This oversight shall be consistent with a project management plan developed by the Government after consultation with the Non-Federal Sponsor.

D. The Project Coordination Team may make recommendations that it deems warranted to the District Engineer on matters that the Project Coordination Team generally oversees, including suggestions to avoid potential sources of dispute. The Government in good faith shall consider the recommendations of the Project Coordination Team. The Government, having the legal authority and responsibility for construction of the Project, has the discretion to accept, reject, or modify the Project Coordination

Team's recommendations.

E. The costs of participation in the Project Coordination Team shall be included in total project costs and cost shared in accordance with the provisions of this Agreement.

ARTICLE VI - METHOD OF PAYMENT

A. The Government shall maintain current records of contributions provided by the parties and current projections of total project costs and costs due to betterments. By **April 1st** of each year and at least quarterly thereafter, the Government shall provide the Non-Federal Sponsor with a report setting forth all contributions provided to date and the current projections of total project costs, of total costs due to betterments, of the maximum amount of total project costs determined in accordance with Article XIX of this Agreement, of the components of total project costs, of each party's share of total project costs, of the Non-Federal Sponsor's total cash contributions required in accordance with Articles II.B., II.D., and II.E. of this Agreement, of the non-Federal proportionate share, and of the funds the Government projects to be required from the Non-Federal Sponsor for the upcoming fiscal year. On the effective date of this Agreement, total project costs are projected to be $86,390,000 and the Non-Federal Sponsor's cash contribution required under Article II.D. of this Agreement is projected to be $21,747,000. Such amounts are estimates subject to adjustment by the Government and are not to be construed as the total financial responsibilities of the Government and the Non-Federal Sponsor.

B. The Non-Federal Sponsor shall provide the cash contribution required under Articles II.D.1. and II.D.3. of this Agreement in accordance with the provisions of this paragraph.

1. Not less than 30 calendar days prior to the scheduled date for issuance of the solicitation for the first construction contract, the Government shall notify the Non-Federal Sponsor in writing of such

scheduled date and the funds the Government, after consideration of any credit afforded pursuant to Article II.D.5. of this Agreement, determines to be required from the Non-Federal Sponsor to meet the non-Federal proportionate share of projected financial obligations for construction on a quarterly basis, including the non-Federal proportionate share of financial obligations for construction incurred prior to the commencement of the period of construction. Not later than such scheduled date, the Non-Federal Sponsor shall provide the Government with the full amount of the required funds by delivering a check payable to "FAO, USAED, Sacramento" to the District Engineer or verifying to the satisfaction of the Government that the Non-Federal Sponsor has deposited the required funds in an escrow or other account acceptable to the Government, with interest accruing to the Non-Federal Sponsor or presenting the Government with an irrevocable letter of credit acceptable to the Government for the required funds or providing an Electronic Funds Transfer in accordance with procedures established by the Government.

2. For the second and subsequent quarters of construction, the Government shall notify the Non-Federal Sponsor in writing, no later than 60 calendar days prior to the beginning of that quarter, of the funds the Government, after consideration of any credit afforded pursuant to Article II.D.5. of this Agreement, determines to be required from the Non-Federal Sponsor to meet the non-Federal proportionate share of projected financial obligations for construction for that quarter. No later than 30 calendar days prior to the beginning of the quarter, the Non-Federal Sponsor shall make the full amount of the required funds for that quarter available to the Government through any of the payment mechanisms specified in Article VI.B.1. of this Agreement.

3. The Government shall draw from the funds provided by the Non-Federal Sponsor such sums as the Government, after consideration of any credit afforded pursuant to Article II.D.5.and of this Agreement, deems necessary to cover: (a) the non-Federal

proportionate share of financial obligations for construction incurred prior to the commencement of the period of construction; and (b) the non-Federal proportionate share of financial obligations for construction as they are incurred during the period of construction.

4. If at any time during the period of construction the Government determines that additional funds will be needed from the Non-Federal Sponsor to cover the non-Federal proportionate share of projected financial obligations for construction for the current quarter, the Government shall notify the Non-Federal Sponsor in writing of the additional funds required, and provide an explanation of why additional funds are required, and the Non-Federal Sponsor, no later than **60** calendar days from receipt of such notice, shall make the additional required funds for that quarter available through any of the payment mechanisms specified in Article VI.B.1. of this Agreement.

C. In advance of the Government incurring any financial obligation associated with additional work under Article II.B. or II.E. of this Agreement, the Non-Federal Sponsor shall provide the Government with the full amount of the funds required to pay for such additional work on a quarterly basis by delivering a check payable to "FAO, USAED, Sacramento" to the District Engineer. The Government shall draw from the funds provided by the Non-Federal Sponsor such sums as the Government deems necessary to cover the Government's financial obligations for such additional work as they are incurred. In the event the Government determines that the Non-Federal Sponsor must provide additional funds to meet its cash contribution, the Government shall notify the Non-Federal Sponsor in writing of the additional funds required. Within 30 calendar days thereafter, the Non-Federal Sponsor shall provide the Government with a check for the full amount for that quarter of the additional required funds.

D. Upon completion of the Project or termination of this Agreement, and upon resolution of all relevant claims and appeals, the Government shall conduct a final accounting and furnish the Non-Federal Sponsor with the results of the final accounting. The final accounting shall determine total project

costs, each party's contribution provided thereto, and each party's required share thereof. The final accounting also shall determine costs due to betterments and the Non-Federal Sponsor's cash contribution provided pursuant to Article II.B. of this Agreement.

1. In the event the final accounting shows that the total contribution provided by the Non-Federal Sponsor is less than its required share of total project costs plus costs due to any betterments provided in accordance with Article II.B. of this Agreement, the Non-Federal Sponsor shall, no later than 90 calendar days after receipt of written notice, make a cash payment to the Government of whatever sum is required to meet the Non-Federal Sponsor's required share of total project costs plus costs due to any betterments provided in accordance with Article II.B. of this Agreement.

2. In the event the final accounting shows that the total contribution provided by the Non-Federal Sponsor exceeds its required share of total project costs plus costs due to any betterments provided in accordance with Article II.B. of this Agreement, the Government shall, subject to the availability of funds, refund the excess to the Non-Federal Sponsor no later than 90 calendar days after the final accounting is complete; however, the Non-Federal Sponsor shall not be entitled to any refund of the 5 percent cash contribution required pursuant to Article II.D.1. of this Agreement. In the event existing funds are not available to refund the excess to the Non-Federal Sponsor, the Government shall seek such appropriations as are necessary to make the refund.

ARTICLE VII - DISPUTE RESOLUTION

As a condition precedent to a party bringing any suit for breach of this Agreement, that party must first notify the other party in writing of the nature of the purported breach and seek in good faith to resolve the dispute through negotiation. If the parties cannot resolve the dispute through negotiation, they may agree to a mutually acceptable method of non-binding alternative dispute resolution with a qualified third

party acceptable to both parties. The parties shall each pay 50 percent of any costs for the services provided by such a third party as such costs are incurred. The existence of a dispute shall not excuse the parties from performance pursuant to this Agreement.

ARTICLE VIII - OPERATION, MAINTENANCE, REPAIR, REPLACEMENT, AND REHABILITATION (OMRR&R)

A. Upon notification in accordance with Article II.C. of this Agreement and for so long as the Project remains authorized, the Non-Federal Sponsor shall operate, maintain, repair, replace, and rehabilitate the entire Project or the functional portion of the Project, at no cost to the Government, in a manner compatible with the Project's authorized purposes and in accordance with applicable Federal and State laws as provided in Article XI of this Agreement and specific directions prescribed by the Government in the OMRR&R Manual and any subsequent amendments thereto.

B. The Non-Federal Sponsor hereby gives the Government a right to enter, at reasonable times and in a reasonable manner, upon property that the Non-Federal Sponsor owns or controls for access to the Project for the purpose of inspection and, if necessary, for the purpose of completing, operating, maintaining, repairing, replacing, or rehabilitating the Project. If an inspection shows that the Non-Federal Sponsor for any reason is failing to perform its obligations under this Agreement, the Government shall send a written notice describing the non-performance to the Non-Federal Sponsor. If, after 30 calendar days from receipt of notice, the Non-Federal Sponsor continues to fail to perform, then the Government shall have the right to enter, at reasonable times and in a reasonable manner, upon property that the Non-Federal Sponsor owns or controls for access to the Project for the purpose of completing, operating, maintaining, repairing, replacing, or rehabilitating the Project. No completion, operation, maintenance, repair, replacement, or rehabilitation by the Government shall operate to relieve the Non-Federal Sponsor of responsibility to meet the Non-Federal Sponsor's obligations as set forth in this Agreement, or to preclude the Government from pursuing any other remedy at law or equity to ensure

faithful performance pursuant to this Agreement.

ARTICLE IX - INDEMNIFICATION

The Non-Federal Sponsor shall hold and save the Government free from all damages arising from the construction, operation, maintenance, repair, replacement, and rehabilitation of the Project and any Project related betterments, except for damages due to the fault or negligence of the Government or its contractors.

ARTICLE X - MAINTENANCE OF RECORDS AND AUDIT

A. Not later than 60 calendar days after the effective date of this Agreement, the Government and the Non-Federal Sponsor shall develop procedures for keeping books, records, documents, and other evidence pertaining to costs and expenses incurred pursuant to this Agreement. These procedures shall incorporate, and apply as appropriate, the standards for financial management systems set forth in the Uniform Administrative Requirements for Grants and Cooperative Agreements to State and Local Governments at 32 C.F.R. Section 33.20. The Government and the Non-Federal Sponsor shall maintain such books, records, documents, and other evidence in accordance with these procedures and for a minimum of three years after the period of construction and resolution of all relevant claims arising therefrom. To the extent permitted under applicable Federal laws and regulations, the Government and the Non-Federal Sponsor shall allow mutual examination and audit of books, documents, records, and other evidence for a period of three years after final payment of this agreement.

B. Pursuant to 32 C.F.R. Section 33.26, the Non-Federal Sponsor is responsible for complying with the Single Audit Act of 1984, 31 U.S.C. Sections 7501-7507, as implemented by Office of Management and Budget (OMB) Circular No. A-133 and Department of Defense Directive 7600.10. Upon request of the Non-Federal Sponsor and to the extent permitted under applicable Federal laws and regulations, the Government shall

provide to the Non-Federal Sponsor and independent auditors any information necessary to enable an audit of the Non-Federal Sponsor's activities under this Agreement. The costs of any non-Federal audits performed in accordance with this paragraph shall be allocated in accordance with the provisions of OMB Circulars A-87 and A-133, and such costs as are allocated to the Project shall be included in total project costs and cost shared in accordance with the provisions of this Agreement.

C. In accordance with 31 U.S.C. Section 7503, the Government may conduct audits in addition to any audit that the Non-Federal Sponsor is required to conduct under the Single Audit Act. Any such Government audits shall be conducted in accordance with Government Auditing Standards and the cost principles in OMB Circular No. A-87 and other applicable cost principles and regulations. The costs of Government audits performed in accordance with this paragraph shall be included in total project costs and cost shared in accordance with the provisions of this Agreement.

ARTICLE XI - FEDERAL AND STATE LAWS

In the exercise of their respective rights and obligations under this Agreement, the Non-Federal Sponsor and the Government agree to comply with all applicable Federal and State laws and regulations, including, but not limited to: Section 601 of the Civil Rights Act of 1964, Public Law 88-352 (42 U.S.C. 2000d) and Department of Defense Directive 5500.11 issued pursuant thereto; Army Regulation 600-7, entitled "Nondiscrimination on the Basis of Handicap in Programs and Activities Assisted or Conducted by the Department of the Army"; and all applicable Federal labor standards requirements including, but not limited to, 40 U.S.C. 3141-3148 and 40 U.S.C. 3701-3708 (revising, codifying and enacting without substantive change the provisions of the Davis-Bacon Act (formerly 40 U.S.C. 276a et seq.), the Contract Work Hours and Safety Standards Act (formerly 40 U.S.C. 327 et seq.) and the Copeland Anti-Kickback Act (formerly 40 U.S.C. 276c)).

ARTICLE XII - RELATIONSHIP OF PARTIES

A. In the exercise of their respective rights and obligations under this Agreement, the Government and the Non-Federal Sponsor each act in an independent capacity, and neither is to be considered the officer, agent, or employee of the other.

B. In the exercise of its rights and obligations under this Agreement, neither party shall provide, without the consent of the other party, any contractor with a release that waives or purports to waive any rights such other party may have to seek relief or redress against such contractor either pursuant to any cause of action that such other party may have or for violation of any law.

ARTICLE XIII - OFFICIALS NOT TO BENEFIT

No member of or delegate to the Congress, nor any resident commissioner, shall be admitted to any share or part of this Agreement, or to any benefit that may arise therefrom.

ARTICLE XIV - TERMINATION OR SUSPENSION

A. If at any time the Non-Federal Sponsor fails to fulfill its obligations under Article II.B., II.D., II.E., VI, or XVIII.C. of this Agreement, the Assistant Secretary of the Army (Civil Works) shall terminate this Agreement or suspend future performance under this Agreement unless he determines that continuation of work on the Project is in the interest of the United States or is necessary in order to satisfy agreements with any other non-Federal interests in connection with the Project.

B. If the Government fails to receive annual appropriations in amounts sufficient to meet Project expenditures for the then-current or upcoming fiscal year, the Government shall so notify the Non-Federal Sponsor in writing, and 60 calendar days thereafter either party may elect without penalty to terminate this Agreement or to suspend future performance

under this Agreement. In the event that either party elects to suspend future performance under this Agreement pursuant to this paragraph, such suspension shall remain in effect until such time as the Government receives sufficient appropriations or until either the Government or the Non-Federal Sponsor elects to terminate this Agreement.

C. In the event that either party elects to terminate this Agreement pursuant to this Article or Article XV of this Agreement, both parties shall conclude their activities relating to the Project and proceed to a final accounting in accordance with Article VI.D. of this Agreement.

D. Any termination of this Agreement or suspension of future performance under this Agreement in accordance with this Article or Article XV of this Agreement shall not relieve the parties of liability for any obligation previously incurred. Any delinquent payment shall be charged interest at a rate, to be determined by the Secretary of the Treasury, equal to 150 per centum of the average bond equivalent rate of the 13-week Treasury bills auctioned immediately prior to the date on which such payment became delinquent, or auctioned immediately prior to the beginning of each additional 3-month period if the period of delinquency exceeds 3 months.

ARTICLE XV - HAZARDOUS SUBSTANCES

A. After execution of this Agreement and upon direction by the District Engineer, the Non-Federal Sponsor shall perform, or cause to be performed, any investigations for hazardous substances that the Government or the Non-Federal Sponsor determines to be necessary to identify the existence and extent of any hazardous substances regulated under the Comprehensive Environmental Response, Compensation, and Liability Act (hereinafter "CERCLA"), 42 U.S.C. Sections 9601-9675, that may exist in, on, or under lands, easements, and rights-of-way that the Government determines, pursuant to Article III of this Agreement, to be required for the construction, operation, and maintenance of the Project. However, for lands that the Government determines to be subject to the

navigation servitude, only the Government shall perform such investigations unless the District Engineer provides the Non-Federal Sponsor with prior specific written direction, in which case the Non-Federal Sponsor shall perform such investigations in accordance with such written direction. All actual costs incurred by the Non-Federal Sponsor for such investigations for hazardous substances shall be included in total project costs and cost shared in accordance with the provisions of this Agreement, subject to an audit in accordance with Article X.C. of this Agreement to determine reasonableness, allocability, and allowability of costs.

B. In the event it is discovered through any investigation for hazardous substances or other means that hazardous substances regulated under CERCLA exist in, on, or under any lands, easements, or rights-of-way that the Government determines, pursuant to Article III of this Agreement, to be required for the construction, operation, and maintenance of the Project, the Non-Federal Sponsor and the Government shall provide prompt written notice to each other, and the Non-Federal Sponsor shall not proceed with the acquisition of the real property interests until both parties agree that the Non-Federal Sponsor should proceed.

C. The Government and the Non-Federal Sponsor shall determine whether to initiate construction of the Project, or, if already in construction, whether to continue with work on the Project, suspend future performance under this Agreement, or terminate this Agreement for the convenience of the Government, in any case where hazardous substances regulated under CERCLA are found to exist in, on, or under any lands, easements, or rights-of-way that the Government determines, pursuant to Article III of this Agreement, to be required for the construction, operation, and maintenance of the Project. Should the Government and the Non-Federal Sponsor determine to initiate or continue with construction after considering any liability that may arise under CERCLA, the Non-Federal Sponsor shall be responsible, as between the Government and the Non-Federal Sponsor, for the costs of clean-up and response, to include the costs of any studies and investigations necessary to determine an appropriate response to the contamination. Such costs shall not be considered a part of total project

costs. In the event the Non-Federal Sponsor fails to provide any funds necessary to pay for clean up and response costs or to otherwise discharge the Non-Federal Sponsor's responsibilities under this paragraph upon direction by the Government, the Government may, in its sole discretion, either terminate this Agreement for the convenience of the Government, suspend future performance under this Agreement, or continue work on the Project.

D. The Non-Federal Sponsor and the Government shall consult with each other in accordance with Article V of this Agreement in an effort to ensure that responsible parties bear any necessary clean up and response costs as defined in CERCLA. Any decision made pursuant to paragraph C. of this Article shall not relieve any third party from any liability that may arise under CERCLA.

E. As between the Government and the Non-Federal Sponsor, the Non-Federal Sponsor shall be considered the operator of the Project for purposes of CERCLA liability. To the maximum extent practicable, the Non-Federal Sponsor shall operate, maintain, repair, replace, and rehabilitate the Project in a manner that will not cause liability to arise under CERCLA.

ARTICLE XVI - NOTICES

A. Any notice, request, demand, or other communication required or permitted to be given under this Agreement shall be deemed to have been duly given if in writing and either delivered personally or by telegram or mailed by first-class, registered, or certified mail, as follows:

If to the Non-Federal Sponsor: The State of California
The Reclamation Board
P.O. Box 942836
Sacramento, CA 94236-0001

If to the Government: USAED, Sacramento

1325 J Street
Sacramento, CA 95814-2922

B. A party may change the address to which such communications are to be directed by giving written notice to the other party in the manner provided in this Article.

C. Any notice, request, demand, or other communication made pursuant to this Article shall be deemed to have been received by the addressee at the earlier of such time as it is actually received or seven calendar days after it is mailed.

ARTICLE XVII - CONFIDENTIALITY

To the extent permitted by the laws governing each party, the parties agree to maintain the confidentiality of exchanged information when requested to do so by the providing party.

ARTICLE XVIII - HISTORIC PRESERVATION

A. The costs of identification, survey and evaluation of historic properties shall be included in total project costs and cost shared in accordance with the provisions of this Agreement.

B. As specified in Section 7(a) of Public Law 93-291 (16 U.S.C. Section 469c(a)), the costs of mitigation and data recovery activities associated with historic preservation shall be borne entirely by the Government and shall not be included in total project costs, up to the statutory limit of one percent of the total amount authorized to be appropriated for the Project.

C. The Government shall not incur costs for mitigation and data recovery that exceed the statutory one percent limit specified in paragraph B. of this Article unless and until the Assistant Secretary of the Army (Civil Works)

has waived that limit in accordance with Section 208(3) of Public Law 96-515 (16 U.S.C. Section 469c-2(3)). Any costs of mitigation and data recovery that exceed the one percent limit shall not be included in total project costs but shall be cost shared between the Non-Federal Sponsor and the Government consistent with the minimum non-Federal cost sharing requirements for the underlying flood control purpose, as follows: 35 percent borne by the Non-Federal Sponsor, and 65 percent borne by the Government.

ARTICLE XIX - SECTION 902 PROJECT COST LIMITS

The Non-Federal Sponsor has reviewed the provisions set forth in Section 902 of Public Law 99-662, as amended, and understands that Section 902 establishes the maximum amount of total project costs for South Sacramento County Streams, California. The Section 902 limitation is a common value for the entire South Sacramento County Streams project authorization and applies to all project elements in aggregate regardless of separate Project Cooperation Agreements. Notwithstanding any other provision of this Agreement, the Government shall not make a new Project financial obligation, make a Project expenditure, or afford credit toward total project costs for the value of any contribution provided by the Non-Federal Sponsor, if such obligation, expenditure, or credit would result in total project costs exceeding this maximum amount, unless otherwise authorized by law. On the effective date of this Agreement, this maximum amount is estimated to be $93,692,000 as calculated in accordance with ER 1105-2-100 using October 1, 2004 price levels and allowances for projected future inflation. The Government shall adjust this maximum amount in accordance with Section 902.

ARTICLE XX -OBLIGATIONS OF FUTURE APPROPRIATIONS

A. Nothing herein shall constitute, nor be deemed to constitute, an obligation of future appropriations by the Legislature of the State of California, where creating such an obligation would be inconsistent with Article XVI, Section 1 of the Constitution.

B. The Non-Federal Sponsor intends to satisfy its obligations under this Agreement. The Non-Federal Sponsor shall include in its budget request or otherwise propose, for each fiscal period, appropriations sufficient to cover the Non-Federal Sponsor's obligations under this Agreement for each year, and will use all reasonable and lawful means to secure the appropriations for that year sufficient to make the payments necessary to fulfill its obligations hereunder. The Non-Federal Sponsor reasonably believes that funds in amounts sufficient to discharge these obligations can and will lawfully be appropriated and made available for this purpose. In the event the budget or other means of appropriations does not provide funds in sufficient amounts to discharge these obligations, the Non-Federal Sponsor shall use its best efforts to satisfy any requirements for payments under this Agreement from any other source of funds legally available for this purpose. Further, if the Non-Federal Sponsor is unable to satisfy its obligations hereunder, the Government may exercise any legal rights it has to protect the Government's interests related to this Agreement.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement, which shall become effective upon the date it is signed by the District Engineer.

THE DEPARTMENT OF THE ARMY

BY: Ronald N. Light

Ronald N. Light
Colonel, Corps of Engineers
District Engineer

DATE: 5/20/05

THE STATE OF CALIFORNIA,
THE RECLAMATION BOARD

BY: Betsy A. Marchand

Betsy Marchand
President
The Reclamation Board

DATE: 4/5/05

Approved as to legal form and sufficiency:

Asst Chief Counsel, MVR

CERTIFICATE OF AUTHORITY

I, Scott Morgan, do hereby certify that I am the principal legal officer of the State of California, The Reclamation Board, that The Reclamation Board is a legally constituted public body with full authority and legal capability to perform the terms of the Agreement between the Department of the Army and the State of California, The Reclamation Board and the Sacramento Area Flood Control Agency in connection with the South Sacramento County Stream, CA, and to pay damages in accordance with the terms of this Agreement, if necessary, in the event of the failure to perform, as required by Section 221 of Public Law 91-611 (42 U.S.C. Section 1962d-5b), and that the persons who have executed this Agreement on behalf of the State of California, The Reclamation Board have acted within their statutory authority.

IN WITNESS WHEREOF, I have made and executed this certification this 28th day of March 2005.

Scott R. Morgan

Scott Morgan
Counsel
The Reclamation Board

CERTIFICATION REGARDING LOBBYING

The undersigned certifies, to the best of his or her knowledge and belief that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

BY: Stephen T. Bradley DATE: 4-19-05
for Peter Rabbon, General Manager
State of California, The Reclamation Board

BUDGET DETAIL AND PAYMENT PROVISIONS

I. INVOICING AND PAYMENT: Method of payment shall be in accordance with provisions stated in Article VI on page 13 of this Agreement.

II. BUDGET CONTINGENCY CLAUSE: It is mutually agreed that if the Budget Act of the current year and/or any subsequent years covered under this Agreement does not appropriate sufficient funds for the program, this Agreement shall be of no further force and effect. In this event, the State shall have no liability to pay any funds whatsoever to Contractor or to furnish any other considerations under this Agreement and Contractor shall not be obligated to perform any provisions of this Agreement.

If funding for any fiscal year is reduced or deleted by the Budget Act for purposes of this program, the State shall have the option to either: cancel this Agreement with no liability occurring to the State, or offer an Agreement Amendment to Contractor to reflect the reduced amount.

EXHIBIT –Special Terms and Conditions for Department Of Water Resources (Department of the Army Corps of Engineers)

1. AVAILABILITY OF FUNDS: Work to be performed under this contract is subject to availability of funds through the State's normal budget process.

2. AUDIT CLAUSE: For contracts in excess of $10,000, the contracting parties shall be subject to the examination and audit of the State Auditor for a period of three years after final payment under the contract (Government Code Section 8546.7).

3. CONFLICT OF INTEREST:

   a. Current and Former State Employees: Contractor should be aware of the following provisions regarding current or former state employees. If Contractor has any questions on the status of any person rendering services or involved with the Agreement, the awarding agency must be contacted immediately for clarification.

      (1) Current State Employees: (PCC §10410)

         (a) No officer or employee shall engage in any employment, activity or enterprise from which the officer or employee receives compensation or has a financial interest and which is sponsored or funded by any state agency, unless the employment, activity or enterprise is required as a condition of regular state employment.

         (b) No officer or employee shall contract on his or her own behalf as an independent contractor with any state agency to provide goods or services.

      (2) Former State Employees: (PCC §10411)

         (a) For the two-year period from the date he or she left state employment, no former state officer or employee may enter into a contract in which he or she engaged in any of the negotiations, transactions, planning, arrangements or any part of the decision-making process relevant to the contract while employed in any capacity by any state agency.

         (b) For the twelve-month period from the date he or she left state employment, no former state officer or employee may enter into a contract with any state agency if he or she was employed by that state agency in a policy-making position in the same general subject area as the proposed contract within the 12-month period prior to his or her leaving state service.

   b. Penalty for Violation:

      (a) If the Contractor violates any provisions of above paragraphs, such action by Contractor shall render this Agreement void. (PCC §10420)

   c. Members of Boards and Commissions:

      (a) Members of boards and commissions are exempt from this section if they do not receive payment other than payment of each meeting of the board or commission, payment for preparatory time and payment for per diem. (PCC §10430 (e)

d. Representational Conflicts of Interest:

The Contractor must disclose to the DWR Program Manager any activities by contractor or subcontractor personnel involving representation of parties, or provision of consultation services to parties, who are adversarial to DWR. DWR may immediately terminate this contract if the contractor fails to disclose the information required by this section. DWR may immediately terminate this contract if any conflicts of interest cannot be reconciled with the performance of services under this contract.

e. Financial Interest in Contracts:

Contractor should also be aware of the following provisions of Government Code §1090:

"Members of the Legislature, state, county district, judicial district, and city officers or employees shall not be financially interested in any contract made by them in their official capacity, or by any body or board of which they are members. Nor shall state, county, district, judicial district, and city officers or employees be purchasers at any sale or vendors at any purchase made by them in their official capacity."

f. Prohibition for Consulting Services Contracts:

For consulting services contracts (see PCC §10335.5), the Contractor and any subcontractors (except for subcontractors who provide services amounting to 10 percent or less of the contract price) may not submit a bid/SOQ, or be awarded a contract, for the provision of services, procurement of goods or supplies or any other related action which is required, suggested, or otherwise deemed appropriate in the end product of such a consulting services contract (see PCC § 10365.5).

EXHIBIT E

Flood Damage Reduction System Inspection Report

Semi – Annual Report Cover Letter

US Army Corps of Engineers®

Flood Damage Reduction Segment / System Inspection Report

Name of Segment / System: _____

Public Sponsor(s): _____

Public Sponsor Representative: _____

Sponsor Phone: _____

Sponsor Email: _____

Corps of Engineers Inspector: _____ Date of Inspection: _____

Inspection Report Prepared By: _____ Date Report Prepared: _____

Internal Technical Review (for Periodic Inspections) By: _____ Date of ITR: _____

Final Approved By: _____ Date Approved: _____

Type of Inspection:	☐ **Initial Eligibility Inspection** ☐ **Continuing Eligibility Inspection (Routine)** ☐ **Continuing Eligibility Inspection (Periodic)**	Overall Segment / System Rating:	☐ **Acceptable** ☐ **Minimally Acceptable** ☐ **Unacceptable**
Contents of Report:	☐ **Instructions** ☐ **Initial Eligibility Inspection** ☐ **General Items for All Flood Control Works** ☐ **Levee Embankment** ☐ **Concrete Floodwalls** ☐ **Sheet Pile and Concrete I-walls** ☐ **Interior Drainage System** ☐ **Pump Stations** ☐ **FDR System Channels**	Note: In addition to the report contents indicated here, a plan view drawing of the system, with stationing, should be included with this report to reference locations of items rated less than acceptable. Photos of general system condition and any noted deficiencies should also be attached.	

US Army Corps
of Engineers®

Flood Damage Reduction Segment / System
Public Sponsor Pre-Inspection Form

The following information is to be provided by the levee district sponsor prior to an inspection. This information will be used to help evaluate the organizational capability of the levee district to manage the levee segment / system maintenance program.

1. Levee segment / system and district: (name of the segment / system and levee district)
2. Reporting period: (month/day/year to month/day/year)
3. Summary of maintenance required by last inspection report:
4. Summary of maintenance performed this reporting period:
5. Summary of maintenance planned next reporting period:
6. Summary of changes to segment / system since last inspection:
7. Problems/ issues requiring the assistance of the US Army Corps of Engineers:

Public Sponsor Pre-Inspection Report

The following information is to be provided by the levee district sponsor prior to an inspection

8. Levee district organization: (elected or appointed levee district officials and key employees)

Name	Position	Mailing Address	Phone Number	Email Address

General Instructions for the Inspection of Flood Damage Reduction Segments / Systems

A. Purpose of USACE Inspections:

The primary purpose of these inspections is to prevent loss of life and catastrophic damages; preserve the value of Federal investments, and to encourage non-Federal sponsors to bear responsibility for their own protection. Inspections should assure that Flood Damage Reduction structures and facilities are continually maintained and operated as necessary to obtain the maximum benefits. Inspections are also conducted to determine eligibility for Rehabilitation Assistance under authority of PL 84-99 for Federal and non-Federal systems. (ER 1130-2-530, ER 500-1-1)

B. Types of Inspections:

The Corps conducts several types of inspections of Flood Damage Reduction systems, as outlined below:

Initial Eligibility Inspections	Continuing Eligibility Inspections	
	Routine Inspections	**Periodic Inspections**
IEIs are conducted to determine whether a non-Federally constructed Flood Damage Reduction system meets the minimum criteria and standards set forth by the Corps for initial inclusion into the Rehabilitation and Inspection Program.	RIs are intended to verify proper maintenance, owner preparedness, and component operation.	PIs are intended to verify proper maintenance and component operation and to evaluate operational adequacy, structural stability, and safety of the system. Periodic Inspections evaluate the system's original design criteria vs. current design criteria to determine potential performance impacts, evaluate the current conditions, and compare the design loads and design analysis used against current design standards. This is to be done to identify components and features for the sponsor that need to be monitored more closely over time or corrected as needed. (Periodic Inspections are used as the basis of risk assessments.)

C. Inspection Boundaries:

Inspections should be conducted so as to rate each Flood Damage Reduction "Segment" of the system. The overall system rating will be the lowest segment rating in the system.

Project	System	Segment
A flood damage reduction project is made up of one or more flood damage reduction systems which were under the same authorization.	A flood damage reduction system is made up of one or more flood damage reduction segments which collectively provide flood damage reduction to a defined area. Failure of one segment within a system constitutes failure of the entire system. Failure of one system does not affect another system.	A flood damage reduction segment is defined as a discrete portion of a flood damage reduction system that is operated and maintained by a single entity. A flood damage reduction segment can be made up of one or more features (levee, floodwall, pump stations, etc).

D. Land Use Definitions:

The following three definitions are intended for use in determining minimum required inspection intervals and initial requirements for inclusion into the Rehabilitation and Inspection Program. Inspections should be considered for all systems that would result in significant environmental or economic impact upon failure regardless of specific land use.

Agricultural	Rural	Urban
Protected population in the range of zero to 5 households per square mile protected.	Protected population in the range of 6 to 20 households per square mile protected.	Greater than 20 households per square mile; major industrial areas with significant infrastructure investment. Some protected urban areas have no permanent population but may be industrial areas with high value infrastructure with no overnight population.

E. Use of the Inspection Report Template:

The report template is intended for use in all Army Corps of Engineers inspections of levee and floodwall systems and flood damage reduction channels. The section of the template labeled "Initial Eligibility" only needs to be completed during Initial Eligibility Inspections of Non-Federally constructed Flood Damage Reduction Systems. The section labeled "General Items" needs to be completed with every inspection, along with all other sections that correspond to features in the system. The section labeled "Public Sponsor Pre-Inspection Report" is intended for completion before the inspection, if possible.

F. Individual Item / Component Ratings:

Assessment of individual components rated during the inspection should be based on the criteria provided in the inspection report template, though inspectors may incorporate additional items into the report based on the characteristics of the system. The assessment of individual components should be based on the following definitions.

Acceptable Item	Minimally Acceptable Item	Unacceptable Item
The inspected item is in satisfactory condition, with no deficiencies, and will function as intended during the next flood event.	The inspected item has one or more minor deficiencies that need to be corrected. The minor deficiency or deficiencies will not seriously impair the functioning of the item as intended during the next flood event.	The inspected item has one or more serious deficiencies that need to be corrected. The serious deficiency or deficiencies will seriously impair the functioning of the item as intended during the next flood event.

G. Overall Segment / System Ratings:

Determination of the overall system rating is based on the definitions below. Note that an Unacceptable System Rating may be either based on an engineering determination that concluded that noted deficiencies would prevent the system from functioning as intended during the next flood event, or based on the sponsor's demonstrated lack of commitment or inability to correct serious deficiencies in a timely manner.

Acceptable System	Minimally Acceptable System	Unacceptable System
All items or components are rated as Acceptable.	One or more items are rated as Minimally Acceptable or one or more items are rated as Unacceptable and an engineering determination concludes that the Unacceptable items would not prevent the segment / system from performing as intended during the next flood event.	One or more items are rated as Unacceptable and would prevent the segment / system from performing as intended, or a serious deficiency noted in past inspections (which had previously resulted in a minimally acceptable system rating) has not been corrected within the established timeframe, not to exceed two years.

H. Eligibility for PL84-99 Rehabilitation Assistance:

Inspected systems that are not operated and maintained by the Federal government may be Active in the Corps' Rehabilitation and Inspection Program (RIP) and eligible for rehabilitation assistance from the Corps as defined below:

If the Overall System Rating is Acceptable	If the Overall System Rating is Minimally Acceptable	If the Overall System Rating is Unacceptable
The system is active in the RIP and eligible for PL84-99 rehabilitation assistance.	The system is Active in the RIP during the time that it takes to make needed corrections. Active systems are eligible for rehabilitation assistance. However, if the sponsor does not present USACE with proof that serious deficiencies (which had previously resulted in a minimally acceptable system rating) were corrected within the established timeframe, then the system will become Inactive in the RIP.	The system is Inactive in the RIP, and the status will remain Inactive until the sponsor presents USACE with proof that all items rated Unacceptable have been corrected. Inactive systems are ineligible for rehabilitation assistance.

I. Reporting:

After the inspection, the Corps is responsible for assembling an inspection report (or a summary report if it was a Periodic Inspection) including the following information:

a. All sections of the report template used during the inspection, including the cover and pre-inspection materials. (Supplemental data collected, and any sections of the template that weren't used during the inspection do not need to be included with the report.)

b. Photos of the general system condition and noted deficiencies.

c. A plan view drawing of the system, with stationing, to reference locations of items rated less than acceptable.

d. The relative importance of the identified maintenance issues should be specified in the transmittal letter.

e. If the Overall System Rating is Minimally Acceptable, the report needs to establish a timeframe for correction of serious deficiencies noted (not to exceed two years) and indicate that if these items are not corrected within the required timeframe, the system will be rated as Unacceptable and made Inactive in the Rehabilitation Inspection Program.

J. Notification:

Reports are to be disseminated as follows within 30 days of the inspection date.

If the Overall System Rating is Acceptable	If the Overall System Rating is Minimally Acceptable	If the Overall System Rating is Unacceptable
Reports need to be provided to the local sponsor and the county emergency management agency.	Reports need to be provided to the local sponsor, state emergency management agency, county emergency management agency, and to the FEMA region.	Reports need to be provided to the local sponsor, state emergency management agency, county emergency management agency, FEMA region, and to the Congressional delegation within 30 days of the inspection.

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
1. Operations and Maintenance Manuals		**A**	Levee Owner's Manual, O&M Manuals, and/or manufacturer's operating instructions are present.	
		M	Sponsor manuals are lost or missing or out of date; however, sponsor will obtain manuals prior to next scheduled inspection.	
		U	Sponsor has not obtained lost or missing manuals identified during previous inspection.	
2. Emergency Supplies and Equipment (A or M only)		**A**	The sponsor maintains a stockpile of sandbags, shovels, and other flood fight supplies which will adequately supply all needs for the initial days of a flood fight. Sponsor determines required quantity of supplies after consulting with inspector.	
		M	The sponsor does not maintain an adequate supply of flood fighting materials as part of their preparedness activities.	
3. Flood Preparedness and Training (A or M only)		**A**	Sponsor has a written system-specific flood response plan and a solid understanding of how to operate, maintain, and staff the FDR system during a flood. Sponsor maintains a list of emergency contact information for appropriate personnel and other emergency response agencies.	
		M	The sponsor maintains a good working knowledge of flood response activities, but documentation of system-specific emergency procedures and emergency contact personnel is insufficient or out of date.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
1. Unwanted Vegetation Growth[1]		**A**	The levee has little or no unwanted vegetation (trees, bush, or undesirable weeds), except for vegetation that is properly contained and/or situated on overbuilt sections, such that the mandatory 3-foot root-free zone is preserved around the levee profile. The levee has been recently mowed. The vegetation-free zone extends 15 feet from both the landside and riverside toes of the levee to the centerline of the tree. If the levee access easement doesn't extend to the described limits, then the vegetation-free zone must be maintained to the easement limits. Reference EM 1110-2-301 or Corps policy for regional vegetation variance.	
		M	Minimal vegetation growth (brush, weeds, or trees 2 inches in diameter or smaller) is present within the zones described above. This vegetation must be removed but does not currently threaten the operation or integrity of the levee.	
		U	Significant vegetation growth (brush, weeds, or any trees greater than 2 inches in diameter) is present within the zones described above and must to be removed to reestablish or ascertain levee integrity.	
2. Sod Cover		**A**	There is good coverage of sod over the levee.	
		M	Approximately 25% of the sod cover is missing or damaged over a significant portion or over significant portions of the levee embankment. This may be the result of over-grazing or feeding on the levee, unauthorized vehicular traffic, chemical or insect problems, or burning during inappropriate seasons.	
		U	Over 50% of the sod cover is missing or damaged over a significant portion or portions of the levee embankment.	
		N/A	Surface protection is provided by other means.	
3. Encroachments		**A**	No trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the levee.	
		M	Trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the levee.	
4. Closure Structures (Stop Log, Earthen Closures, Gates, or Sandbag		**A**	Closure structure in good repair. Placing equipment, stoplogs, and other materials are readily available at all times. Components are clearly marked and installation instructions/ procedures readily available. Trial erections have been accomplished in accordance with the O&M Manual.	

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
Closures) (A or U only)		**U**	Any of the following issues is cause for this rating: Closure structure in poor condition. Parts missing or corroded. Placing equipment may not be available within the anticipated warning time. The storage vaults cannot be opened during the time of inspection. Components of closure are not clearly marked and installation instructions/ procedures are not readily available. Trial erections have not been accomplished in accordance with the O&M Manual.	
		N/A	There are no closure structures along this component of the FDR segment / system.	
5. Slope Stability		**A**	No slides, sloughs, tension cracking, slope depressions, or bulges are present.	
		M	Minor slope stability problems that do not pose an immediate threat to the levee embankment.	
		U	Major slope stability problems (ex. deep seated sliding) identified that must be repaired to reestablish the integrity of the levee embankment.	
6. Erosion/ Bank Caving		**A**	No erosion or bank caving is observed on the landward or riverward sides of the levee that might endanger its stability.	
		M	There are areas where minor erosion is occurring or has occurred on or near the levee embankment, but levee integrity is not threatened.	
		U	Erosion or caving is occurring or has occurred that threatens the stability and integrity of the levee. The erosion or caving has progressed into the levee section or into the extended footprint of the levee foundation and has compromised the levee foundation stability.	
7. Settlement[2]		**A**	No observed depressions in crown. Records exist and indicate no unexplained historical changes.	
		M	Minor irregularities that do not threaten integrity of levee. Records are incomplete or inclusive.	
		U	Obvious variations in elevation over significant reaches. No records exist or records indicate that design elevation is compromised.	
8. Depressions/ Rutting		**A**	There are scattered, shallow ruts, pot holes, or other depressions on the levee that are unrelated to levee settlement. The levee crown, embankments, and access road crowns are well established and drain properly without any ponded water.	
		M	There are some infrequent minor depressions less than 6 inches deep in the levee crown, embankment, or access roads that will pond water.	
		U	There are depressions greater than 6 inches deep that will pond water.	
9. Cracking		**A**	Minor longitudinal, transverse, or desiccation cracks with no vertical movement along the crack. No cracks extend continuously through the levee crest.	
		M	Longitudinal and/or transverse cracks up to 6 inches in depth with no vertical movement along the crack. No cracks extend continuously through the levee crest. Longitudinal cracks are no longer than the height of the levee.	

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
		U	Cracks exceed 6 inches in depth. Longitudinal cracks are longer than the height of the levee and/or exhibit vertical movement along the crack. Transverse cracks extend through the entire levee width.	
10. Animal Control		**A**	Continuous animal burrow control program in place that includes the elimination of active burrowing and the filling in of existing burrows.	
		M	The existing animal burrow control program needs to be improved. Several burrows are present which may lead to seepage or slope stability problems, and they require immediate attention.	
		U	Animal burrow control program is not effective or is nonexistent. Significant maintenance is required to fill existing burrows, and the levee will not provide reliable flood protection until this maintenance is complete.	
11. Culverts/ Discharge Pipes[3] (This item includes both concrete and corrugated metal pipes.)		**A**	There are no breaks, holes, cracks in the discharge pipes/ culverts that would result in significant water leakage. The pipe shape is still essentially circular. All joints appear to be closed and the soil tight. Corrugated metal pipes, if present, are in good condition with 100% of the original coating still in place (either asphalt or galvanizing) or have been relined with appropriate material, which is still in good condition. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		M	There are a small number of corrosion pinholes or cracks that could leak water and need to be repaired, but the entire length of pipe is still structurally sound and is not in danger of collapsing. Pipe shape may be ovalized in some locations but does not appear to be approaching a curvature reversal. A limited number of joints may have opened and soil loss may be beginning. Any open joints should be repaired prior to the next inspection. Corrugated metal pipes, if present, may be showing corrosion and pinholes but there are no areas with total section loss. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		U	Culvert has deterioration and/or has significant leakage; it is in danger of collapsing or as already begun to collapse. Corrugated metal pipes have suffered 100% section loss in the invert. HOWEVER: Even if pipes appear to be in good condition, as judged by an external visual inspection, an Unacceptable Rating will be assigned if the condition of pipes has not been verified using television camera video taping or visual inspection methods within the past five years, and reports for all pipes are not available for review by the inspector.	
		N/A	There are no discharge pipes/ culverts.	
12. Riprap Revetments &		**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
Bank Protection		**M**	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the segment / system, or riprap is discussed in another section.	
13. Revetments other than Riprap		**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the segment / system.	
14. Underseepage Relief Wells/ Toe Drainage Systems		**A**	Toe drainage systems and pressure relief wells necessary for maintaining FDR segment / system stability during high water functioned properly during the last flood event and no sediment is observed in horizontal system (if applicable). Nothing is observed which would indicate that the drainage systems won't function properly during the next flood, and maintenance records indicate regular cleaning. Wells have been pumped tested within the past 5 years and documentation is provided.	
		M	Toe drainage systems or pressure relief wells are damaged and may become clogged if they are not repaired. Maintenance records are incomplete or indicate irregular cleaning and pump testing.	
		U	Toe drainage systems or pressure relief wells necessary for maintaining FDR segment / system stability during flood events have fallen into disrepair or have become clogged. No maintenance records. No documentation of the required pump testing.	
		N/A	There are no relief wells/ toe drainage systems along this component of the FDR segment / system.	
15. Seepage		**A**	No evidence or history of unrepaired seepage, saturated areas, or boils.	
		M	Evidence or history of minor unrepaired seepage or small saturated areas at or beyond the landside toe but not on the landward slope of levee. No evidence of soil transport.	
		U	Evidence or history of active seepage, extensive saturated areas, or boils.	

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

[1] If there is significant growth on the levee that inhibits the inspection of animal burrows or other items, the inspection should be ended until this item is corrected.
[2] Detailed survey elevations are normally required during Periodic Inspections, and whenever there are obvious visual settlements.
[3] The decision on whether or not USACE inspectors should enter a pipe to perform a detailed inspection must be made at the USACE District level. This decision should be made in conjunction with the District Safety Office, as pipes may be considered confined spaces. This decision should consider the age of the pipe, the diameter of the pipe, the apparent condition of the pipe, and the length of the pipe. If a pipe is entered for the purposes of inspection, the inspector should record observations with a video camera in order that the condition of the entire pipe, including all joints, can later be assessed. Additionally, the video record provides a baseline to which future inspections can be compared.

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
1. Unwanted Vegetation Growth[1]		**A**	A grass-only or paved zone is maintained on both sides of the floodwall, free of all trees, brush, and undesirable weeds. The vegetation-free zone extends 15 feet from both the land and riverside of the floodwall, at ground-level, to the centerline of the tree. Additionally, an 8-foot root-free zone is maintained around the entire structure, including the floodwall toe, heel, and any toe-drains. If the floodwall access easement doesn't extend to the described limits, then the vegetation-free zone must be maintained to the easement limits. Reference EM 1110-2-301 and/or Corps policy for regional vegetation variance.	
		M	Minimal vegetation growth (brush, weeds, or trees 2 inches in diameter or smaller) is present within the zones described above. This vegetation must be removed but does not currently threaten the operation or integrity of the floodwall.	
		U	Significant vegetation growth (brush, weeds, or any trees greater than 2 inches in diameter) is present within the zones described above. This vegetation threatens the operation or integrity of the floodwall and must be removed.	
2. Encroachments		**A**	No trash, debris, unauthorized structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the floodwall.	
		M	Trash, debris, unauthorized structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the floodwall.	
3. Closure Structures (Stop Log Closures and Gates) (A or U only)		**A**	Closure structure in good repair. Placing equipment, stoplogs, and other materials are readily available at all times. Components are clearly marked and installation instructions/ procedures readily available. Trial erections have been accomplished in accordance with the O&M Manual.	
		U	Any of the following issues is cause for this rating: Closure structure in poor condition. Parts missing or corroded. Placing equipment may not be available within the anticipated warning time. The storage vaults cannot be opened during the time of inspection. Components of closure are not clearly marked and installation instructions/ procedures are not readily available. Trial erections have not been accomplished in accordance with the O&M Manual.	
		N/A	There are no closure structures along this component of the FDR segment / system.	
4. Concrete Surfaces		**A**	Negligible spalling, scaling or cracking. If the concrete surface is weathered or holds moisture, it is still satisfactory but should be seal coated to prevent freeze/ thaw damage.	
		M	Spalling, scaling, and open cracking present, but the immediate integrity or performance of the structure is not threatened. Reinforcing steel may be exposed. Repairs/ sealing is necessary to prevent additional damage during periods of thawing and freezing.	

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
		U	Surface deterioration or deep cracks present that may result in an unreliable structure. Any surface deterioration that exposes the sheet piling or lies adjacent to monolith joints may indicate underlying reinforcement corrosion and is unacceptable.	
5. Tilting, Sliding or Settlement of Concrete Structures[2]		**A**	There are no significant areas of tilting, sliding, or settlement that would endanger the integrity of the structure.	
		M	There are areas of tilting, sliding, or settlement (either active or inactive) that need to be repaired. The maximum offset, either laterally or vertically, does not exceed 2 inches unless the movement can be shown to be no longer actively occurring. The integrity of the structure is not in danger.	
		U	There are areas of tilting, sliding, or settlement (either active or inactive) that threaten the structure's integrity and performance. Any movement that has resulted in failure of the waterstop (possibly identified by daylight visible through the joint) is unacceptable. Differential movement of greater than 2 inches between any two adjacent monoliths, either laterally or vertically, is unacceptable unless it can be shown that the movement is no longer active. Also, if the floodwall is of I-wall construction, then any visible or measurable tilting of the wall toward the protected side that has created an open horizontal crack on the riverside base of a monolith is unacceptable.	
6. Foundation of Concrete Structures[1]		**A**	No active erosion, scouring, or bank caving that might endanger the structure's stability.	
		M	There are areas where the ground is eroding towards the base of the structure. Efforts need to be taken to slow and repair this erosion, but it is not judged to be close enough to the structure or to be progressing rapidly enough to affect structural stability before the next inspection. For the purposes of inspection, the erosion or scour is not closer to the riverside face of the wall than twice the floodwall's underground base width if the wall is of L-wall or T-wall construction; or if the wall is of sheetpile or I-wall construction, the erosion is not closer than twice the wall's visible height. Additionally, rate of erosion is such that the wall is expected to remain stabile until the next inspection.	
		U	Erosion or bank caving observed that is closer to the wall than the limits described above, or is outside these limits but may lead to structural instabilities before the next inspection. Additionally, if the floodwall is of I-wall or sheetpile construction, the foundation is unacceptable if any turf, soil or pavement material got washed away from the landside of the I-wall as the result of a previous overtopping event.	
7. Monolith Joints		**A**	The joint material is in good condition. The exterior joint sealant is intact and cracking/ desiccation is minimal. Joint filler material and/or waterstop is not visible at any point.	
		M	The joint material has appreciable deterioration to the point where joint filler material and/or waterstop is visible in some locations. This needs to be repaired or replaced to prevent spalling and cracking during freeze/ thaw cycles, and to ensure water tightness of the joint.	

Floodwalls

For use during Initial and Continuing Eligibility Inspections of all floodwalls

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
		U	The joint material is severely deteriorated or the concrete adjacent to the monolith joints has spalled and cracked, damaging the waterstop; in either case damage has occurred to the point where it is apparent that the joint is no longer watertight and will not provide the intended level of protection during a flood.	
		N/A	There are no monolith joints in the floodwall.	
8. Underseepage Relief Wells/ Toe Drainage Systems		**A**	Toe drainage systems and pressure relief wells necessary for maintaining FDR segment / system stability during high water functioned properly during the last flood event and no sediment is observed in horizontal system (if applicable). Nothing is observed which would indicate that the drainage systems won't function properly during the next flood, and maintenance records indicate regular cleaning. Wells have been pumped tested within the past 5 years and documentation is provided.	
		M	Toe drainage systems or pressure relief wells are damaged and may become clogged if they are not repaired. Maintenance records are incomplete or indicate irregular cleaning and pump testing.	
		U	Toe drainage systems or pressure relief wells necessary for maintaining FDR segment / system stability during flood events have fallen into disrepair or have become clogged. No maintenance records. No documentation of the required pump testing.	
		N/A	There are no relief wells/ toe drainage systems along this component of the FDR segment / system.	
9. Seepage		**A**	No evidence or history of unrepaired seepage, saturated areas, or boils.	
		M	Evidence or history of minor unrepaired seepage or small saturated areas at or beyond the landside toe but not on the landward slope of levee. No evidence of soil transport.	
		U	Evidence or history of active seepage, extensive saturated areas, or boils.	

[1] Inspectors must have as-built drawings available during the inspection so that the lateral distance to the heel and toe of the floodwalls can be determined in the field.
[2] The sponsor should be monitoring any observed movement to verify whether the movement is active or inactive.

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
1. Vegetation and Obstructions		**A**	No obstructions, vegetation, debris, or sediment accumulation noted within interior drainage channels or blocking the culverts, inlets, or discharge areas. Concrete joints and weep holes are free of grass and weeds.	
		M	Obstructions, vegetation, debris, or sediment are minor and have not impaired channel flow capacity or blocked more than 10% of any culvert openings, but should be removed. A limited volume of grass and weeds may be present in concrete channel joints and weep holes.	
		U	Obstructions, vegetation, debris, or sediment have impaired the channel flow capacity or blocked more than 10% of a culvert opening. Sediment and debris removal required to re-establish flow capacity.	
2. Encroachments		**A**	No trash, debris, unauthorized structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the interior drainage system.	
		M	Trash, debris, unauthorized structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of this component of the interior drainage system.	
3. Ponding Areas		**A**	No trash, debris, structures, or other obstructions present within the ponding areas. Sediment deposits do not exceed 10% of capacity.	
		M	Trash, debris, excavations, structures, or other obstructions present, or inappropriate activities that will not inhibit operations and maintenance. Sediment deposits do not exceed 30% of capacity.	
		U	Trash, debris, excavations, structures, or other obstructions, or other encroachments or activities noted that will inhibit operations, maintenance, or emergency work. Sediment deposits exceeds 30% of capacity.	
		N/A	There are no ponding areas associated with the interior drainage system.	
4. Fencing and Gates[1]		**A**	Fencing is in good condition and provides protection against falling or unauthorized access. Gates open and close freely, locks are in place, and there is little corrosion on metal parts.	
		M	Fencing or gates are damaged or corroded but appear to be maintainable. Locks may be missing or damaged.	
		U	Fencing and gates are damaged or corroded to the point that replacement is required, or potentially dangerous features are not secured.	
		N/A	There are no features noted that require safety fencing.	
5. Concrete Surfaces (Such as gate		**A**	Negligible spalling, scaling or cracking. If the concrete surface is weathered or holds moisture, it is still satisfactory but should be seal coated to prevent freeze/ thaw damage.	

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
wells, outfalls, intakes, or culverts)		**M**	Spalling, scaling, and open cracking present, but the immediate integrity or performance of the structure is not threatened. Reinforcing steel may be exposed. Repairs/ sealing is necessary to prevent additional damage during periods of thawing and freezing.	
		U	Surface deterioration or deep cracks present that may result in an unreliable structure. Any surface deterioration that exposes the sheet piling or lies adjacent to monolith joints may indicate underlying reinforcement corrosion and is unacceptable.	
		N/A	There are no concrete items in the interior drainage system.	
6. Tilting, Sliding or Settlement of Concrete and Sheet Pile Structures[2] (Such as gate wells, outfalls, intakes, or culverts)		**A**	There are no significant areas of tilting, sliding, or settlement that would endanger the integrity of the structure.	
		M	There are areas of tilting, sliding, or settlement (either active or inactive) that need to be repaired. The maximum offset, either laterally or vertically, does not exceed 2 inches unless the movement can be shown to be no longer actively occurring. The integrity of the structure is not in danger.	
		U	There are areas of tilting, sliding, or settlement (either active or inactive) that threaten the structure's integrity and performance. Any movement that has resulted in failure of the waterstop (possibly identified by daylight visible through the joint) is unacceptable. Differential movement of greater than 2 inches between any two adjacent monoliths, either laterally or vertically, is unacceptable unless it can be shown that the movement is no longer active. Also, if the floodwall is of I-wall construction, then any visible or measurable tilting of the wall toward the protected side that has created an open horizontal crack on the riverside base of a monolith is unacceptable.	
		N/A	There are no concrete items in the interior drainage system.	
7. Foundation of Concrete Structures[3] (Such as culverts, inlet and discharge structures, or gatewells.)		**A**	No active erosion, scouring, or bank caving that might endanger the structure's stability.	
		M	There are areas where the ground is eroding towards the base of the structure. Efforts need to be taken to slow and repair this erosion, but it is not judged to be close enough to the structure or to be progressing rapidly enough to affect structural stability before the next inspection. The rate of erosion is such that the structure is expected to remain stabile until the next inspection.	
		U	Erosion or bank caving observed that may lead to structural instabilities before the next inspection.	
		N/A	There are no concrete items in the interior drainage system.	
8. Monolith Joints		**A**	The joint material is in good condition. The exterior joint sealant is intact and cracking/ desiccation is minimal. Joint filler material and/or waterstop is not visible at any point.	
		M	The joint material has appreciable deterioration to the point where joint filler material and/or waterstop is visible in some locations. This needs to be repaired or replaced to prevent spalling and cracking during freeze/ thaw cycles, and to ensure water tightness of the joint.	

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
		U	The joint material is severely deteriorated or the concrete adjacent to the monolith joints has spalled and cracked, damaging the waterstop; in either case damage has occurred to the point where it is apparent that the joint is no longer watertight and will not provide the intended level of protection during a flood.	
		N/A	There are no monolith joints in the interior drainage system.	
9. Culverts/ Discharge Pipes[4]		**A**	There are no breaks, holes, cracks in the discharge pipes/ culverts that would result in significant water leakage. The pipe shape is still essentially circular. All joints appear to be closed and the soil tight. Corrugated metal pipes, if present, are in good condition with 100% of the original coating still in place (either asphalt or galvanizing) or have been relined with appropriate material, which is still in good condition. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		M	There are a small number of corrosion pinholes or cracks that could leak water and need to be repaired, but the entire length of pipe is still structurally sound and is not in danger of collapsing. Pipe shape may be ovalized in some locations but does not appear to be approaching a curvature reversal. A limited number of joints may have opened and soil loss may be beginning. Any open joints should be repaired prior to the next inspection. Corrugated metal pipes, if present, may be showing corrosion and pinholes but there are no areas with total section loss. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		U	Culvert has deterioration and/or has significant leakage; it is in danger of collapsing or as already begun to collapse. Corrugated metal pipes have suffered 100% section loss in the invert. HOWEVER: Even if pipes appear to be in good condition, as judged by an external visual inspection, an Unacceptable Rating will be assigned if the condition of pipes has not been verified using television camera video taping or visual inspection methods within the past five years, and reports for all pipes are not available for review by the inspector.	
		N/A	There are no discharge pipes/ culverts.	
10. Sluice / Slide Gates[5]		**A**	Gates open and close freely to a tight seal or minor leakage. Gate operators are in good working condition and are properly maintained. Sill is free of sediment and other obstructions. Gates and lifters have been maintained and are free of corrosion. Documentation provided during the inspection.	
		M	Gates and/or operators have been damaged or have minor corrosion, and open and close with resistance or binding. Leakage quantity is controllable, but maintenance is required. Sill is free of sediment and other obstructions.	
		U	Gates do not open or close and/or operators do not function. Gate, stem, lifter and/or guides may be damaged or have major corrosion.	
		N/A	There are no sluice/ slide gates.	

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
11. Flap Gates/ Flap Valves/ Pinch Valves[1]		**A**	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	
		M	Gates/ valves will not fully open or close because of obstructions that can be easily removed, or have minor corrosion damage that requires maintenance.	
		U	Gates/ valves are missing, have been damaged, or have deteriorated to the point that they need to be replaced.	
		N/A	There are no flap gates.	
12. Trash Racks (non-mechanical)		**A**	Trash racks are fastened in place and properly maintained.	
		M	Trash racks are in place but are unfastened or have bent bars that allow debris to enter into the pipe or pump station, bars are corroded to the point that up to 10% of the sectional area may be lost. Repair or replacement is required.	
		U	Trash racks are missing or damaged to the extent that they are no longer functional and must be replaced. (For example, more than 10% of the sectional area may be lost.)	
		N/A	There are no trash racks, or they are covered in the pump stations section of the report.	
13. Other Metallic Items		**A**	All metal parts are protected from corrosion damage and show no rust, damage, or deterioration that would cause a safety concern.	
		M	Corrosion seen on metallic parts appears to be maintainable.	
		U	Metallic parts are severely corroded and require replacement to prevent failure, equipment damage, or safety issues.	
		N/A	There are no other significant metallic items.	
14. Riprap Revetments of Inlet/ Discharge Areas		**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the segment / system, or riprap is discussed in another section.	
15. Revetments other than Riprap		**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	

Interior Drainage System

For use during Initial and Continuing Eligibility Inspections of interior drainage systems

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There are no such revetments protecting this feature of the segment / system.	

[1] Proper operation of this item must be demonstrated during the inspection.
[2] The sponsor should be monitoring any observed movement to verify whether the movement is active or inactive.
[3] Inspectors must have as-built drawings available during the inspection so that the lateral distance to the heel and toe of the floodwalls can be determined in the field.
[4] The decision on whether or not USACE inspectors should enter a pipe to perform a detailed inspection must be made at the USACE District level. This decision should be made in conjunction with the District Safety Office, as pipes may be considered confined spaces. This decision should consider the age of the pipe, the diameter of the pipe, the apparent condition of the pipe, and the length of the pipe. If a pipe is entered for the purposes of inspection, the inspector should record observations with a video camera in order that the condition of the entire pipe, including all joints, can later be assessed. Additionally, the video record provides a baseline to which future inspections can be compared.
[5] Proper operation of the gates (full open and closed) must be demonstrated during the inspection if no documentation is available. Be aware of both manual and electrical operators.

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
1. Vegetation and Obstructions		**A**	No obstructions, vegetation, debris, or sediment accumulation within the channel. Concrete channel joints and weep holes are free of grass and weeds.	
		M	Obstructions (including log jams), vegetation, debris, or sediment are minor and have not impaired channel flow capacity, but should be removed. Sediment shoals have not developed to the extent that they can support vegetation other than non-aquatic grasses. A limited volume of grass and weeds may be present in concrete channel joints and weep holes.	
		U	Obstructions (including log jams), vegetation, debris or sediment have impaired the channel flow capacity. Sediment shoals are well established and support woody and/or brushy vegetation. Sediment and debris removal required to re-establish flow capacity.	
2. Shoaling[1] (sediment deposition)		**A**	No shoaling or minor, non-vegetated shoaling is present.	
		M	More widespread vegetated and non-vegetated shoaling is present. Non-aquatic grasses are present on shoal. No trees or brush is present on shoal, and channel flow is not significantly reduced. Sediment and debris removal recommended.	
		U	Shoaling is well established, stabilized by saplings, brush, or other vegetation. Shoals are diverting flow to channel walls. Channel flow capacity is reduced and maintenance is required.	
3. Encroachments		**A**	No trash, debris, unauthorized structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the channel.	
		M	Trash, debris, unauthorized structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the channel.	
4. Erosion		**A**	No head cutting or horizontal deviation observed.	
		M	Head cutting and horizontal deviation evident, but is less than 1 foot from the designed grade or cross section.	
		U	Head cutting and horizontal deviation of more than 1 foot from the designed grade or cross section. Corrective actions required to stop or slow erosion.	
5. Concrete Surfaces		**A**	Negligible spalling, scaling or cracking. If the concrete surface is weathered or holds moisture, it is still satisfactory but should be seal coated to prevent freeze/ thaw damage.	
		M	Spalling, scaling, and open cracking present, but the immediate integrity or performance of the structure is not threatened. Reinforcing steel may be exposed. Repairs/ sealing is necessary to prevent additional damage during periods of thawing and freezing.	

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
		U	Surface deterioration or deep cracks present that may result in an unreliable structure. Any surface deterioration that exposes the sheet piling or lies adjacent to monolith joints may indicate underlying reinforcement corrosion and is unacceptable.	
		N/A	There are no concrete items in the channel.	
6. Tilting, Sliding or Settlement of Concrete Structures[2]		**A**	There are no significant areas of tilting, sliding, or settlement that would endanger the integrity of the structure.	
		M	There are areas of tilting, sliding, or settlement (either active or inactive) that need to be repaired. The maximum offset, either laterally or vertically, does not exceed 2 inches unless the movement can be shown to be no longer actively occurring. The integrity of the structure is not in danger.	
		U	There are areas of tilting, sliding, or settlement (either active or inactive) that threaten the structure's integrity and performance. Any movement that has resulted in failure of the waterstop (possibly identified by daylight visible through the joint) is unacceptable. Differential movement of greater than 2 inches between any two adjacent monoliths, either laterally or vertically, is unacceptable unless it can be shown that the movement is no longer active. Also, if the floodwall is of I-wall construction, then any visible or measurable tilting of the wall toward the protected side that has created an open horizontal crack on the riverside base of a monolith is unacceptable.	
		N/A	There are no concrete items in the channel.	
7. Foundation of Concrete Structures[3]		**A**	No active erosion, scouring, or bank caving that might endanger the structure's stability.	
		M	There are areas where the ground is eroding towards the base of the structure. Efforts need to be taken to slow and repair this erosion, but it is not judged to be close enough to the structure or to be progressing rapidly enough to affect structural stability before the next inspection. For the purposes of inspection, the erosion or scour is not closer to the riverside face of the wall than twice the floodwall's underground base width if the wall is of L-wall or T-wall construction; or if the wall is of sheetpile or I-wall construction, the erosion is not closer than twice the wall's visible height. Additionally, rate of erosion is such that the wall is expected to remain stabile until the next inspection.	
		U	Erosion or bank caving observed that is closer to the wall than the limits described above, or is outside these limits but may lead to structural instabilities before the next inspection. Additionally, if the floodwall is of I-wall or sheetpile construction, the foundation is unacceptable if any turf, soil or pavement material got washed away from the landside of the I-wall as the result of a previous overtopping event.	
		N/A	There are no concrete items in the channel.	
8. Slab and Monolith Joints		**A**	The joint material is in good condition. The exterior joint sealant is intact and cracking/ desiccation is minimal. Joint filler material and/or waterstop is not visible at any point.	

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
		M	The joint material has appreciable deterioration to the point where joint filler material and/or waterstop is visible in some locations. This needs to be repaired or replaced to prevent spalling and cracking during freeze/ thaw cycles, and to ensure water tightness of the joint.	
		U	The joint material is severely deteriorated or the concrete adjacent to the monolith joints has spalled and cracked, damaging the waterstop; in either case damage has occurred to the point where it is apparent that the joint is no longer watertight and will not provide the intended level of protection during a flood.	
		N/A	There are no concrete items in the channel.	
9. Flap Gates/ Flap Valves/ Pinch Valves[4]		**A**	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	
		M	Gates/ valves will not fully open or close because of obstructions that can be easily removed, or have minor corrosion damage that requires maintenance.	
		U	Gates/ valves are missing, have been damaged, or have deteriorated to the point that they need to be replaced.	
		N/A	There are no flap gates.	
10. Riprap Revetments & Banks		**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the segment / system, or riprap is discussed in another section.	
11. Revetments other than Riprap		**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the segment / system.	

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

[1] If weather and flow conditions allow, inspectors should walk in the channel and probe shoal areas in order to estimate extent of blockage of the cross-sectional area where shoaling is present.
[2] The sponsor should be monitoring any observed movement to verify whether the movement is active or inactive.
[3] Inspectors must have as-built drawings available during the inspection so that the lateral distance to the heel and toe of the floodwalls can be determined in the field.
[4] Proper operation of this item must be demonstrated during the inspection.

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Flood Damage Reduction Segment / System
Supplemental Data Sheet

This form is intended for the Corps' internal use and may not need to be updated with every inspection.

Name of Segment / System:
Sponsor:
Location:
River Basin:
Project Description:
Authority that Project was Constructed Under:
Date of Construction:
Approximate Annual Maintenance Costs:

Construction: ☐ Federally Constructed ☐ Non-Federally Constructed

Maintenance: ☐ Federally Maintained ☐ Non-Federally Maintained

National Flood Insurance Program:

a. Is the project currently NFIP? ☐ Yes ☐ No
b. If in the NFIP, Date of Certification (per 44 CFR 65.10):

Datum Information:

a. Datum used for the design and construction of this project is:
b. Current recommended datum for this project is:
c. Has the Project been converted to the current recommended datum? ☐ Yes ☐ No

Levee Embankment Data:

a. Levee Designed Gage Function Reading/Station:
b. Level of Protection Provided:
c. Average Height of Levee:
d. Average Crown Width:
e. Average Side Slope:

Protected Features (For use in preparing estimates and PIRs):

a. Total acres protected:
b. Total agriculture production acres protected:
c. Towns:
d. Businesses:
e. Residences:
f. Roads:
g. Utilities:
h. Barns:
i. Machine Sheds:
j. Outbuildings:
k. Irrigation Systems:
l. Grain Bins:
m. Other Facilities:

To: District Engineer (May 1, 20XX) (Nov 1, 20XX)
Sacramento District
United State Army Corps of Engineers
1325 J Street
Sacramento, California 95814

From: Central Valley Flood Protection Board
El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Sir:

This letter contains the Semi-Annual Report for the period of (May 1, 20XX to October 31, 20XX) (November 1, 20XX to April 30, 20XX) for the South Sacramento Steam Project including Perimeter, North Beach Lake, Morrison Creek, and Florin, Elder, and Unionhouse Creek Levee Improvements located in south Sacramento County.

The Semi-Annual Report contains the following information:

1. For each segment of the project, complete a Flood Damage Reduction Segment Inspection Report for the following:
    a. Prior to each semi-annual report
    b. After a qualifying emergency event
2. Photographic records of overall conditions and specific areas with damage.
3. An updated levee log with copies of issued and executed permits for improvements or construction within the project right-of-way.
4. Maintenance and operation report contains the following:
    a. A fiscal statement of the prior period
    b. A record of field operations, maintenance measures, surveillance, and general plant progress for the reporting period
    c. Proposed repair and corrective measures for the future reporting period
    d. Statement of operation and efficiency of the protective works during flood fighting and a description of the flood-fighting activities during the period.

Respectfully,

Superintendent of Works

Enclosures

EXHIBIT F

Environmental Commitments

Real copy
Weinrich

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:
1-1-01-F-0043

April 15, 2002

Mr. Tom Cavanaugh
Department of the Army
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814

Subject: Formal Section 7 Consultation for the South Sacramento County Streams Project, Sacramento County, California

Dear Mr. Cavanaugh:

This is in response to the U.S. Army Corps of Engineers' (Corps) October 30, 2001, request to re-initiate formal consultation with the U.S. Fish and Wildlife Service (Service) on the South Sacramento County Streams Investigation, Sacramento County, California. Your request was received in our office on October 31, 2001. This document represents the Service's biological opinion on the effects of the action on the threatened vernal pool fairy shrimp (*Brachinecta lynchi*), the endangered vernal pool tadpole shrimp (*Lepidurus packardi*), the threatened valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) (beetle), and the threatened giant garter snake (*Thamnophis gigas*) (snake), in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act).

This biological opinion is based on information provided in (1) the *March 1998 South Sacramento County Streams Investigation Final Environmental Impact Statement* (FEIS); (2) the *October 2001 Final Supplemental Environmental Impact Report/Environmental Assessment for the South Sacramento County Streams Project Camray Borrow Site and Additional Aspects of Levee Work on North Beach Lake Levee*; (3) the *January 2001 Proposal for Wetland, GGS, Riparian Scrub, a nd Vernal Pool Mitigation at the SRWTP Bufferlands*; (4) the *August 2000 Proposed Monitoring Plan for Replacement Seasonal Wetlands, Emergent Marsh, Riparian Scrub, and Upland GGS Habitats Resulting from Impacts Associated with the Bradshaw Interceptor Project and North Beach Lake/SRWTP Levee Improvement Project*, (5) a March 13, 2001, field investigation (6) correspondence between the Service and the Corps from 1996 to 2002 as outlined below in the consultation history section; (7) a telephone conversation on February 14, 2002. A complete administrative record of this consultation is on file in this office.

Consultation History

March 8, 1996. The Corps sent a letter to the Service requesting consultation on the proposed project.

October 18, 1996. The Corps informed the Service that Sacramento Area Flood Control Agency (SAFCA) had constructed part of the project around the Sacramento Regional Wastewater Treatment Plant (SRWTP) from August through November, 1996.

May 7, 1998. The Service sent a letter to SAFCA identifying conservation measures necessary to compensate for impacts of the unauthorized take of listed species.

April 23, 1998. The Service sent a letter to the Corps pointing out the interrelated and interdependent relationship between SAFCA's unauthorized action and the South Sacramento County Streams Investigation (SSCI) project. The Service requested that the Corps withdraw its request for consultation on the SRWTP Levee Improvement Project (1-1-96-F-0070) and include the unauthorized action in the consultation on the SSCI Project.

June 5, 1998. The Corps complied with the Service's April 23, 1998 request.

October 26, 1999. The Service sent a letter to the Corps and terminated formal consultation because of unresolved negotiations and actions not being undertaken to compensate for the unauthorized activities.

June 14, 2000. The Corps received a letter from SAFCA showing the Board Resolution approving the purchase of 2.08 acres of vernal pool creation credits.

January 16, 2001. The Corps sent a letter to the Service requesting reinitiation of formal consultation on the proposed project.

February 23, 2001. The Service sent a letter to the Corps requesting additional information on project description and project impacts.

March 13, 2001. Doug Weinrich (Service), Brian Cordone (Servcie), Jane Rinck (Corps), Phillip Brozek (Corps), and the Sacramento Regional Wastewater Treatment Bufferland's staff performed a site visit to discuss project impacts.

October 30, 2001. The Corps sent a letter to the Service with additional project information and requested reinitiation of formal consultation on the proposed project.

February 14, 2002. Phone conversation between Jane Rinck from the Corps and Brian Cordone of the Service clarifying the proposed vernal pool compensation for the project. It was

determined that 0.75 acre of vernal pool project impacts would be compensated by preserving 2.25 acres vernal pool habitat instead of the 1.5 acres stated in the Corps' October 2001 additional project information packet.

BIOLOGICAL OPINION

Description of the Proposed Action

The Corps and the SAFCA propose to increase flood protection to the South Sacramento County area by modifying existing levees and channels along portions of Morrison, Elder, Unionhouse, and Florin creeks; retrofitting bridges over these creeks; and constructing a new levee and floodwall at the Sacramento Regional Wastewater Treatment Plant. This proposed project also includes a restoration component which is intended to compensate for species and habitat impacts. The following is a description of the proposed work in the four work areas. See Figure 2-1 in the FEIS for a graphical representation of where and the type of work to be performed. This project alternative was developed to eliminate national flood insurance requirements for structures and property threatened by streams in the study area, and provide a consistent high level of flood protection to all index areas. This alternative was designed to eliminate areas of the Federal Emergency Management Agency (FEMA) 100-year floodplain which currently receive flows from the Morrison Creek system and Beach-Stone Lakes. However, this alternative would not eliminate areas which also receive flooding from other sources such as the American and/or Sacramento Rivers. This alternative would provide protection for a 1 in 500 annual event for all of the index areas and would meet FEMA reliability requirements.

Flood Control Work

Area 1 - Pocket Area

The North Beach Lake levee would be raised along most of its alignment from the Sacramento River to Unionhouse Creek. In addition, the west levee on Morrison Creek would be raised from Unionhouse Creek to Union Pacific Rail Road (UPRR). These levees would be raised a maximum of 4 feet from 18 to 21 feet in elevation. Except at the west end of the Beach Lake levee and near UPRR tracks, the levee would be raised along the existing alignment. The levees would have a 16-foot wide crown to accommodate local maintenance equipment. The landward side of the levee would be built out about 23 feet and would have a 2 horizontal to 1 vertical sideslope. Borrow sites 1 and 2 identified in Figure 2 of the FEIS for the proposed project would be used. Due to limited right-of-way, floodwall or sheetpile wall would be used instead of levee raising on 3,400 linear feet of the North Beach Lake levee immediately east of I-5. The sheetpile wall would be located on the waterside of the levee and extend 3 to 4 feet above the top of the levee. The sheetpile walls would be installed from the top of the levee.

The west end of the North Beach Lake levee would be realigned to the south so that it would tie into the Sacramento River two-thirds of a mile south of Freeport. The new levee segment would tie into the existing Sacramento River levee about 2,000 feet south of the existing North Beach Lake levee terminus and would be about 2,000 feet long. The new levee segment would be 11 feet in elevation and have a 16-foot wide crown. The west end of the existing North Beach Lake levee would remain in place. The newly constructed levee segment and the existing North Beach Lake levee would protect State Route 160 and other structures from flooding.

Along Morrison Creek at the UPRR crossing, a removable stop log structure would be replaced at the crossing to contain high water that exceeds the elevation of the railroad tracks. This structure would pass the 1 in 100 annual flood event at the Morrison Creek crossing. On the west side of the Morrison Creek levee between the UPRR and Franklin Boulevard, floodwalls or sheetpile walls would be used instead of levee raising due to limited right of way. The floodwall or sheetpile walls would be placed on the levee crown on the waterside of the existing service road. The top of the sheetpile wall would be 1.5 feet above the top of the levee. The service road on top of the levee segment between the UPRR and Franklin Boulevard would remain at the existing width of 12 feet. Floodwalls or sheetpile walls would be constructed from inside the creek channel. Existing ramps to access the channel would be used when possible or temporary ramps would be constructed if needed. Staging areas for this location would be in the creek channel. The top of the levee would be cleared of vegetation and transported to the nearest dump or land fill. Cranes would be used to lift material and equipment to wall locations on the tops of the levees or banks. Channels would be dewatered by temporary coffer dams and diversion of streamflow upstream of construction. A tarp would be laid on the channel bottom to protect the concrete low-flow liner and any vegetation on the channel bottom. Gravel or other material to support construction equipment would be graded on top of the tarp. As construction is completed in a stream section, the support material and coffer dam would be removed, and the channel bottoms would be restored to pre-project conditions.

Area 2- Sacramento Regional Wastewater Treatment Plant

The existing ring levee around the treatment plant would be raised 4 feet from 18 to 22 feet in elevation. The total length of the levee raising would be about 24,000 feet. About one third of the work would consist of levee raising with earth fill material. The levee would be extended 43 feet on the land or treatment plant side to avoid wetland habitat on the waterside of the levee. A floodwall would be placed on top of the existing levee for about 9,000 feet due to limited right of way at the southwest corner of the treatment plant levee. The floodwall would be made of reinforced concrete, placed on the top of the levee service road, and located on the water side of the levee. Construction in Area 2 would take place from the top of the levee, and the floodwall would extend 3 feet above the top of the existing levee. A new levee section would be added to the ring levee and would extend 5,000 feet along the southern perimeter of the treatment plant. The new levee would have a 15-foot wide service road to accommodate plant operation and maintenance equipment. This new levee would tie into Dwight Road near UPRR. At the northeast terminus of the ring levee near Laguna Creek and UPRR, a 2,300-foot long concrete

floodwall would be constructed. The floodwall would be 4 to 8 feet high and 1-foot wide and would extend south and tie into high ground near the railroad tracks. Borrow material for the levee raising in this area would be taken from existing stockpiles on the treatment plant site. Equipment and staging areas would also be located on treatment plant lands.

Area 3 - Between Morrison and State Route 99

Morrison Creek. The predominant flood control measure along Morrison creek would be floodwalls or sheetpile walls on both levees and on the channel banks of incised channels. Along the east bank of Morrison Creek from Unionhouse Creek to the UPRR bridge, seepage and weakening of the railroad embankment would be corrected by constructing a floodwall or sheetpile wall 300 feet long on the waterside of the embankment. The top of the wall would be about 3.6 feet above the top of the levee. Construction would be done using the in-channel methods described for Area 1.

Farther up the east bank of Morrison Creek levee from UPRR bridge to Franklin Boulevard, there is an existing levee at an elevation of 19 feet. A floodwall or sheetpile wall 8,600 feet long would be placed along the waterside edge of the service road to strengthen the levee. The top of the wall would be about 3.6 feet above the existing top of the levee, and the width of the road would remain at 12 feet. In-channel construction methods would be used as described for Area 1.

The channel of Morrison Creek is incised from Franklin Boulevard to State Route 99. In this area, there would be floodwalls or sheetpile walls sunk into streambanks for about 4,000 feet. The walls would be placed inside the fence line that marks the existing channel right of way. The height of the wall would extend 2.5 feet above the top of the channel bank. To reduce the risk of wall failure, the wall would be placed at a depth of about 10 feet. In-channel construction methods would be used as described for Area 1.

The bridges on Morrison Creek are affected by pressure flow when backwater extends up the creek from Beach-Stone Lakes. To prevent water from leaving the channel under pressure flow, the Brookfield Drive, G parkway, Franklin Boulevard, Center Parkway, and Florin Road bridges would be retrofitted with concrete infill walls, concrete aprons, parapet walls, and drains.

Elder Creek. The predominant flood control measure on this creek would be floodwalls or sheetpile walls. In the leveed areas, from the confluence with Morrison Creek to Franklin Boulevard, about 2,500 feet of floodwall or sheetpile walls would be placed on both sides of the channel on the waterside edge of the service road on top of the levee. The top of the wall would be at the top of the existing levee height.

At the incised portion of Elder Creek, from Franklin Boulevard to State Route 99, about 3,836 feet would be improved with floodwalls or sheetpile walls. The floodwall or sheetpile wall would be placed in the channel bank inside the fence line that marks the existing channel right of way.

The height of the walls would be about 2.5 to 3 feet above the top of the channel bank. A total of 6,336 feet of floodwalls or sheetpiles would be constructed on Elder Creek. In-channel construction methods would be used as described for Area 1. The Franklin Boulevard, Tangerine Avenue, and Center Parkway bridges on Elder Creek would be retrofitted with concrete infill walls, concrete aprons, parapet walls, and drains.

Florin Creek. The predominant flood control measure would be floodwalls or sheetpile walls. Florin Creek is an incised channel. About 7,392 feet of improvements would be constructed on both banks, from the confluence of Elder Creek with State Route 99. The floodwall or sheetpile wall would be placed in the channel bank inside the fence line that marks the existing channel right of way. The height of the walls would be about 1 to 2 feet above the top of the channel bank. In channel construction methods would be used as described for Area 1. Two bridges would be retrofitted on Florin Creek with concrete infill walls, concrete aprons, parapet walls, and drains. These bridges are located on Brookfield Drive and Persimmon Avenue. The State Route 99 bridge would be retrofitted with parapet walls.

Unionhouse Creek. On Unionhouse Creek, the predominant flood control measure would be floodwalls or sheetpile walls. About 4,725 feet of the north levee below Franklin Boulevard would be improved with floodwalls or sheetpile walls that would be placed along the waterside edge of the service road to strengthen the levee. The top of the wall would be at the existing top of the levee. About 5,280 feet of the parkway would be improved on both banks with sheetpile walls. The walls would be placed inside the fence line that marks the existing channel right of way. The height of the walls would be about 2 to 2.5 feet above the top of the channel bank. In-channel construction methods would be used as described for Area 1. The Franklin Boulevard and Center Parkway bridges would be retrofitted with parapet walls to pass water more efficiently under the bridges during pressure flow conditions.

Area 4- Between State Route 99 and Stockton Boulevard

Morrison Creek. This reach of Morrison Creek is an incised channel, and flood control measures would consist of floodwalls or sheetpile walls on portions of both sides of the channel between State Route 99 and Stockton Boulevard. Where the top of the bank is low, a total of 7,000 linear feet of sheetpile wall would be constructed. The wall would be placed inside the fence line that marks the existing channel right of way and the construction would be done from inside the channel as described for Area 1. The wall heights would be about 2.2 feet above the top of the channel bank. The Sky Footbridge and Riza Footbridge would be retrofitted with concrete infill walls and concrete aprons. Steiner Drive and Stockton Boulevard bridges would be retrofitted with concrete infill walls, concrete aprons, parapet walls, and drains.

Florin Creek. This reach of Florin Creek is an incised channel, and flood control measures would consist of sheetpile walls on both sides of the channel for a total of 7,000 linear feet. The wall would be placed inside the fence line that marks the existing channel right of way, and the construction would be done from inside the channel as described for Area 1. The wall heights

would be about 5.5 feet above the top of the channel bank. No bridges would be retrofitted in this area of the creek.

Restoration Work

Four areas of the Bufferlands were identified for restoration opportunities which are detailed on Map 1 of the *Proposal for Wetland, GGS, Riparian Scrub, and Vernal Pool Mitigation at SRWTP Bufferlands, dated January 2001*. These areas include Black Crown Lake, Upper Beach Lake West, Upper Beach Lake East, and Nicolaus Pond. Habitats proposed to be restored at these sites include riparian forest and oak woodland (59.2 acres), emergent marsh (1.1 acres), oak savannah and perennial grassland (138.5 acres), aquatic habitat (40.2 acres), and seasonal wetland (9.5 acres). Table 1 below shows the amount and habitat type to be restored at each restoration area.

Table 1. Amount, location, and type of habitat, to be restored for the South Sacramento County Streams Investigation Project.

Habitat Type	Black Crown Lake	Upper Beach Lake West	Upper Beach Lake East	Nicolaus Pond
Riparian Forest and Oak Woodland	24.9 Acres	6.9 Acres	20 Acres	7.4 Acres
Emergent Marsh	0.5 Acre	n/a	n/a	0.6 Acre
Oak Savannah and Perennial Grassland	29 Acres	63 Acres	37.5 Acres	9 Acres
Aquatic Habitat	24 Acres	n/a	n/a	16.2 Acres
Seasonal Wetland	n/a	n/a	n/a	9.5 Acres

Restoration activities would occur on a total of 248.5 acres in the Bufferlands. Restoration activities would include planting, installation of large woody debris, installation of nesting structures, and construction of a water control structure. All ground disturbing restoration work in potential giant garter snake habitat would begin after May 1 and end on or before October 1.

Prior to seeding of native grasses, the soil would be prepared by discing, mowing, burning (optional), and herbicide application. These measures were designed to reduce competition with broadleaf weeds and annual grasses. These measures would be implemented 3 to 12 months prior to seeding of native grasses. Discing would be done to a depth of 4 to 6 inches, and all herbicides and burning plans would be government-approved. Site preparation in currently vegetated areas would consist of mowing, hand weeding, and spot herbicide applications. The native grass seed would be installed using a truax drill seeder. In areas where slope or soils are not conducive to drill seeding, seeding would be accomplished by hand or mechanically

broadcast followed by harrowing. Straw mulch would then be applied to prevent erosion. Native grasses would be seeded prior to the installation of woody and herbaceous plants.

The woody and herbaceous plantings would include both pole cuttings and container plants. Native grasses would be seeded prior to the installation of woody and herbaceous plants by broadcasting, hydroseeding, and/or drilling the seed. Woody and upland herbaceous plantings would have 3-foot diameter water basins and irrigation systems. The plants would be installed in augured or hand dug planting pits ranging in size from 2 to 4 feet deep and 1 to 2 feet in diameter.

Large woody debris would be installed in designated areas around Nicolaus Pond and Black Crown Lake. The material used for the installation of large woody debris would consist of dead trees that have washed in during the flood events at the Bufferlands. Ground excavation and helical anchors would be used to secure the large woody debris. All excavated areas would be seeded with native grasses after installation is complete. Nesting structures would be located in each of the restoration areas and would be mounted on galvanized poles or wood posts at heights of 4 to 20 feet.

A new water control structure would be constructed at Nicolaus Pond in order to allow active water level management. Controlling the pond's annual fluctuations would allow Bufferlands staff to better manage the existing seasonal wetlands and plant additional emergent marsh vegetation. About 200 to 250 feet would be excavated waterside of the control structure, and extra soil would be used to enhance giant garter snake upland habitat. All work associated with the water control structure would be done during the giant garter snake's active season. All excavated areas would be seeded with native grasses after installation is completed.

Restoration Maintenance

Project maintenance would generally include a 3-year maintenance establishment period performed by the installation contractor and long term monitoring would be done by Bufferland biologists. Native grass establishment maintenance would include reducing competition with broadleaf weeds, annual grasses, and other non natives by mowing, herbicide applications, and reseeding of native grasses. Maintenance in areas currently supporting healthy stands of native herbaceous vegetation would consist of mowing, hand weeding, and spot herbicide applications.

Maintenance for upland herbaceous and woody container plantings would consist of regular irrigations and hand weeding within individual water basins. Planting areas not meeting the minimum survival percentage outlined in the *Proposed Monitoring Plan for replacement Seasonal Wetlands, Emergent Marsh, Riparian Scrub, and Upland GGS Habitats Resulting from Impacts Associated with the Bradshaw Interceptor Project and North Beach Lake/SRWTP Levee Improvement project, dated August 2000*, would require the replacement of dead plants or plants in poor health. The contractor would be responsible for irrigation, maintenance and cleanliness of the project site. Maintenance for large woody debris would include preventing excessive

erosion and ensuring that the debris would remain secured in place. Nesting structures would be replaced or repaired if damaged and would be kept clean for the 3 year maintenance period.

Long term monitoring (5 to 10 years) would be conducted by Bufferlands biologists and would include monitoring plant survival and vigor along with overall success of the restoration. Plantings, large woody debris, and nesting structures would be replaced as needed. These restoration sites would remain in the Bufferlands established special status species monitoring program.

Corps' Proposed Conservation Measures

General

Giant garter snake restoration/replacement would be monitored for 5 years, and 4 monitoring reports would be provided to the Service. The first monitoring report would be done upon completion of the restoration/replacement, then yearly for the first 2 years, and a final report at year 5. Monitoring reports would include photo documentation, when the restoration/replacement was completed, what materials were used, and plantings. Recommendations for remedial actions would also be included.

Camray Borrow Site

Prior to any work at the borrow site, contractor worker awareness training by a Service approved biologist would be mandatory for a construction related personnel. If new construction personnel are added to the project, the contractor would ensure that the personnel would receive the mandatory training prior to starting work. Adverse effects to 3 elderberry shrubs (*Sambucus* spp.) at the borrow site would be avoided by installing orange mesh fencing 100 feet from the shrubs prior to beginning work at the site. Additionally, the borrow site and haul road through the borrow site would be watered one to three times daily to reduce dust. A speed limit of 15 miles per hour would be posted along the borrow site. The southern area of the borrow site would be surveyed this year for elderberry shrubs and beetle occupancy. The data acquired from the survey would then be provided to the Service.

Activities Along the Haul Route

1. The haul route would be watered one to three times daily to reduce dust. At no time would the water be sprayed within the dripline of elderberry plants in order to avoid attracting Argentine ants.

2. During a part of the beetle's active season, from April 15 to June 15, no hauling activities would occur.

3. A 15 mph speed limit would be posted at the haul route and borrow site.

elderberry or all?

4. Concrete "K" rails, about 3 to 4 feet high, would be installed adjacent to shrubs on the haul route.

5. For impacts to the elderberry shrubs at 0 to 5 feet away from the disturbance the Corps would implement the Service's July 9, 1999, *Conservation Guidelines for the Valley Elderberry Longhorn Beetle* (Guidelines).

6. For impacts to elderberry shrubs at 5 to 25 feet away from the disturbance, the Service's Guidelines would be implemented without transplantation of the affected plants.

7. For impacts to elderberry shrubs at 25 to 100 feet away from the disturbance, the Service's Guidelines would be implemented at ½ the ratios without transplantation of the affected plants.

8. An information database would be created and site specific monitoring of the elderberry shrubs and beetle populations would be conducted. Prior to construction activities, baseline monitoring for noise, vibration, and airborne dust would be conducted within elderberry habitats along the haul road. Noise would be measured twice a day using a noisemeter; vibration would be measured twice a day using a ground vibration monitor and dust would be measured using airborne particulate monitor. Measurements would be taken from ground level up to 20 feet in height. Data would be gathered and compared with and without concrete "K" rails in place. During the 6-month construction period, monitoring for noise, vibration, and airborne dust would be done once every two weeks. Monitoring would also be done post construction once a year for 3 years and be entered into a database. The monitoring plan would include objectives, specific number and locations of measurements, database formulation, results and conclusions.

Upper Basin

The standard avoidance and minimization measures for the giant garter snake would be included in the project for work in the upper basin to avoid any adverse effects to giant garter snakes and their habitat.

North Beach Lake Levee

For impacts to elderberry plants at 0 to 5 feet away from the disturbance, the Corps has proposed to implement the Service's Guidelines and transplant the elderberry plants. However, for impacts to elderberry plants from 5 to 100 feet away from the disturbance, the Corps has proposed to use Service Guidelines without transplantation of the affected plants. The standard avoidance and minimization measures for the giant garter snake will be included in the project for work in the upper basin to avoid any adverse effects to giant garter snakes and their habitat. Compensation for vernal pool impacts was determined using the programmatic agreement for

vernal pool species (preservation at a non bank site 3:1= 2.25 acres, creation at a bank site 1:1= 0.75 acre).

SRWTP - Advanced Unauthorized Work

Compensation for the advanced unauthorized work was determined by the Service in the May 7, 1998 letter to SAFCA and confirmed in a February 9, 1999 meeting with the Service. The Corps and SAFCA will create 1.6 acres of giant garter snake aquatic habitat and preserve 3.2 acres of upland snake habitat as the settlement for the past direct effects to the snake. In addition, the Corps and SAFCA will preserve of 4.1 acres of vernal pool habitat and purchase 2.08 acres of vernal pool creation credits as the settlement for the past direct effect to vernal pool crustaceans.

Restoration Work

- All earth disturbing activities would be conducted during the giant garter snake's active season between May 1 and October 1.
- All construction-related personnel would attend worker awareness training prior to work starting. The training would be done by a biologist approved by the Service and will include species such as the vernal pool fairy shrimp, vernal pool tadpole shrimp, beetle, and the giant garter snake.
- All work areas that have been identified as potential giant garter snake habitat would be surveyed for snakes 24 hours prior to construction activities and again if a lapse in construction activity of 2 weeks or greater has occurred.
- All construction equipment would adhere to the posted 15-mph speed limit.
- In work areas adjacent to water, work would begin at the farthest point from the water, gradually working towards the water to allow any giant garter snakes to escape to aquatic habitat.

Conservation Area

The Corps has proposed to combine the giant garter snake wetland creation and upland compensation for both the proposed work at the North Beach Lake levee and the unauthorized work already constructed at the SRWTP. The compensation would be constructed at the SRWTP bufferlands as described in the *Proposal for Wetland, Giant Garter Snake, Riparian Scrub, and Vernal Pool Mitigation at SRWTP Bufferlands, dated January 2001*.

The compensation plan proposal for the Bufferlands includes the creation of 0.71 acre of seasonal wetlands, 0.23 acre of emergent marsh, 1.6 acres of giant garter snake aquatic habitat, 3.2 acres of giant garter snake upland habitat, and 0.19 acre of riparian habitat. The

compensation would be located at two locations at the Bufferlands, the Fishhead Lake complex near Franklin Boulevard and/or an area near Laguna Creek 1/4 mile north of Fishhead Lake. The compensation for the South Sacramento Streams County Streams Investigation project would be combined with similar compensation needs for seasonal wetlands, and giant garter snake upland preservation associated with the Sacramento Regional County Sanitation District's Bradshaw Interceptor project. Therefore, the compensation complex at the Bufferlands would include a total of 2.15 acres of seasonal wetlands, 0.23 acre of emergent marsh, 1.6 acres of giant garter snake aquatic habitat creation, 7.1 acres of giant garter snake upland habitat preservation, and 0.19 acre of riparian habitat.

The vernal pool compensation for the unauthorized work at the SRWTP (2.08 acres creation, and 4.1 acres preservation) would be accomplished as follows. On May 18, 2000, SAFCA purchased 2.08 acres of vernal pool creation credits from Conservation Resources, LLC. Additionally, 4.1 acres of vernal pool habitat would be preserved at the Bufferlands. The proposed preservation location of vernal pool habitat would be the Sims Field Vernal Pool Complex located north of Sims Road and west of Franklin Road in Sacramento County.

Status of the Species and Environmental Baseline

Vernal Pool Tadpole Shrimp and Vernal Pool Fairy Shrimp

A final rule was published in the **Federal Register** on September 19, 1994, (U. S. Fish and Wildlife Service 1994) to list vernal pool fairy shrimp as threatened and vernal pool tadpole shrimp as endangered under the Act. Additional information on the life history and ecology of these animals may be found in the final rule, Eng *et al.* (1990), Simovich *et al.* (1992), Helm (1998), and Witham *et al.* (1998). Vernal pool fairy shrimp are restricted to vernal pools, swales, and other seasonal wetlands in California and southern Oregon. Vernal pool tadpole shrimp are restricted to similar habitats in California's Central Valley and San Francisco Bay area.

Vernal Pool Fairy Shrimp

Vernal pool fairy shrimp have delicate elongate bodies; large, stalked, compound eyes; no hard shell (i.e., no carapace); and 11 pairs of swimming legs. Typically less than 1 inch long, they swim or glide gracefully upside-down by means of complex, wavelike beating movements while feeding on algae, bacteria, protozoa, rotifers, and detritus. Female vernal pool fairy shrimp carry eggs in a pear-shaped, ventral brood sac until the eggs are either dropped or sink to the pool bottom with the female when she dies. The "resting" or summer eggs are known as cysts. The cysts which remain after pools dry are able to withstand heat, cold, and prolonged desiccation. When pools refill in the same or subsequent seasons, some, but not all, of the cysts may hatch, resulting in a cyst bank in the soil that may include cysts from several breeding seasons (Donald 1983). Vernal pool fairy shrimp develop rapidly and may become sexually mature within two weeks after hatching (Gallagher 1996, Helm 1998). Such quick maturation permits fairy shrimp populations to persist in short-lived, shallow bodies of water (Simovich *et al.* 1992).

Vernal pool fairy shrimp inhabit alkaline pools, ephemeral drainages, rock outcrop pools, ditches, stream oxbows, stock ponds, vernal pools, vernal swales, and other seasonal wetlands (Helm 1998). Occupied habitats range in size from rock outcrop pools as small as nine square feet to large vernal pools up to 11 acres; the potential ponding depth of occupied habitat ranges from 1.2 inches to 48 inches. The vernal pool fairy shrimp has been collected from early December to early May. Known populations of vernal pool fairy shrimp in California extend from Stillwater Plain in Shasta County through most of the length of the Central Valley to Pixley in Tulare County and along the central coast range from northern Solano County to Pinnacles National Monument in San Benito County. Several additional, disjunct populations exist: one near Soda Lake in San Luis Obispo County, one in the mountain grasslands of northern Santa Barbara County, one on the Santa Rosa Plateau in Riverside County, and one near Rancho California in Riverside County. Additional populations occur in southern Oregon.

Vernal pool tadpole shrimp

Vernal pool tadpole shrimp have large, shield-like carapaces that cover most of their body; dorsal, compound eyes; and a pair of long cercopods, one on each side of a flat caudal plate, at the end of their last abdominal segment. With a carapace typically less than 1 inch long, vernal pool tadpole shrimp are primarily bottom-dwelling animals that move with legs down while feeding on detritus and living organisms, including fairy shrimp and other invertebrates (Pennak 1989). Females deposit eggs on vegetation or other objects on the pool bottom. Although some eggs may hatch quickly, others remain dormant as cysts to hatch during later rainy seasons (Ahl 1991). When winter rains refill inhabited wetlands, tadpole shrimp reestablish from dormant cysts and may become sexually mature within three to four weeks after hatching (Ahl 1991, Helm 1998). Reproductively mature adults may be present in pools until the habitats dry up in the spring (Ahl 1991, Simovich *et al.* 1992, Gallagher 1996). Vernal pool tadpole shrimp inhabit alkaline pools, clay flats, ditches, freshwater marshes, stream oxbows, vernal lakes, vernal pools, vernal swales, and other seasonal wetlands (Helm 1998). Occupied habitats range in size from vernal pools as small as two square meters to large vernal lakes up to 89 acres; the potential ponding depth of occupied habitat ranges from 1.5 inches to 59 inches.

Vernal pool tadpole shrimp populations occur in the Central Valley in California, ranging from east of Redding in Shasta County south to Tulare County, and a vernal pool complex located on the San Francisco Bay National Wildlife Refuge in the City of Fremont, Alameda County.

The vernal pool fairy shrimp and tadpole shrimp are ecologically dependent on seasonal fluctuations in their habitat, such as absence or presence of water during specific times of the year, durations of inundation, and other environmental factors that include specific salinity, conductivity, dissolved solids, and pH levels. Water chemistry is one of the most important factors in determining the distribution of fairy shrimp and tadpole shrimp (Belk 1977, Simovich *et al.* 1992). The genetic characteristics of these species, and ecological conditions, such as watershed continuity, indicate that populations of these animals are defined by pool complexes rather than by individual vernal pools (Fugate 1992). Therefore, the most accurate indication of

the distribution and abundance of these species is the number of inhabited vernal pool complexes. Individual vernal pools occupied by these species are most appropriately referred to as subpopulations. The pools and, in some cases, pool complexes supporting these species are usually small. Man-caused and unforeseen natural catastrophic events such as long-term drought, non-native predators, off-road vehicles, pollution, berming, and urban development, threaten their extirpation at some sites.

The primary historical dispersal method for the vernal pool tadpole shrimp and vernal pool fairy shrimp may have been large-scale flooding resulting from winter and spring rains which allowed the animals to colonize different individual vernal pools and other vernal pool complexes. This dispersal mechanism may no longer function in some areas due to the construction of dams, levees, and other flood control measures, and widespread urbanization within significant portions of the range of this species. Waterfowl and shorebirds are now considered the primary dispersal agents for vernal pool tadpole shrimp and vernal pool fairy shrimp (Brusca and Brusca 1992, Simovich *et al.* 1992). The eggs of these crustaceans are either ingested (Krapu 1974, Swanson *et al.* 1974, Driver 1981, Ahl 1991) and/or adhere to the legs and feathers where they are transported to new habitats.

The status of the vernal pool tadpole shrimp and the vernal pool fairy shrimp in the action area of south Sacramento County has been greatly affected by land conversions to agriculture and urban developments. Existing vernal pool habitats within the area are highly degraded and fragmented by construction of many subdivisions and agriculture land conversions, especially to vineyards in the more recent years. Conservation strategies for the area have resulted in small isolated preserves which often are not functioning as the highly integrated vernal pool complexes which are necessary for the dispersal of genetic material between pools. Tadpole shrimp are known to inhabit the two largest seasonal wetlands on the project site.

Environmental Baseline

The listed vernal pool crustaceans are imperiled by habitat loss caused by a variety of human-caused activities, primarily urban development, water supply/flood control projects, and conversion of land to agricultural use. Only a small proportion of the habitat of these species is protected from these threats. Holland (1978) estimated that between 60 and 85 percent of the habitat that once supported vernal pools, the endemic habitat of the vernal pool fairy shrimp, had been destroyed by 1973. In the ensuing years, a substantial amount of remaining habitat has been converted for human uses. Rapid urbanization of the Central Valley of California currently poses the most severe threat to the continued existence of the listed vernal pool crustaceans.

The habitat of the listed vernal pool crustaceans is highly fragmented throughout their ranges due to conversion of natural habitat for urban and agricultural uses. This fragmentation results in small isolated vernal pool crustacean populations. Ecological theory predicts that such populations will be highly susceptible to extinction due to chance events, inbreeding depression, or additional environmental disturbance (Gilpin and Soule 1986; Goodman 1987a,b). If an

extinction event occurs in a population that has been fragmented, the opportunities for recolonization are thought to be greatly reduced due to physical (geographical) isolation from other (source) populations.

The proposed project is located in the Southeastern Sacramento Valley Vernal Pool Region, one of 17 vernal pool regions in the State of California defined by the California Department of Fish and Game in the California Vernal Pool Assessment Preliminary Report (Keeler-Wolf *et al.* 1998). Of these regions, it is the most threatened by development. The regions were identified according to biological, geomorphological, and soils information. According to the report, "One of the primary assumptions is that these regions are ecologically distinct and that they encompass the full range of variability of vernal pools and species in the state" (Keeler-Wolf *et al.* 1998).

The Southeastern Sacramento Valley Vernal Pool Region contains almost 15% of the remaining vernal pool grasslands in the State of California, and supports 35% of the known occurrences of the vernal pool fairy shrimp documented in the California Natural Diversity Database. Of the projects authorized by the Service to take vernal pool fairy shrimp and vernal pool tadpole shrimp since the species were federally listed in 1994 to 2000, almost 80% (121 projects) were located within this region. These projects resulted in the loss of more than 37,500 acres of vernal pool grasslands, out of a total of almost 56,000 acres of uplands containing vernal pool fairy shrimp and vernal pool tadpole shrimp habitat.

Sacramento County has vernal pools that occur on three different geological landforms; low terrace, high terrace, and volcanic mudflows. Soil series that support vernal pools include San Joaquin, and Hedge (low terrace), Corning, Fiddyment, Red Bluff, and Redding (high terrace), and Pentz-Haldseville (volcanic mudflow). The project site occurs on the San Joaquin soils series, a low terrace formation; it occurs inside the Urban Services Boundary (USB) of Sacramento County. Of the total 793 acres of low terrace vernal pools in Sacramento County, approximately 358 acres are inside the USB and 435 acres of low terrace vernal pools are outside the USB. The low terrace pools are second in number to high terrace vernal pools which total 1,103 acres in Sacramento County. Volcanic mudflow pools occupy 179 acres in Sacramento County and 140 acres of vernal pools are situated on a small variety of other lands forms.

Developments within the Sacramento County have resulted in both direct and indirect impacts to vernal pools, and have contributed to the loss of vernal pool fairy shrimp and vernal pool tadpole shrimp populations. Although the reduction of federally listed vernal pool crustacean populations has not been quantified, the acreage of lost habitat continues to grow. General and Specific Plans for the Sacramento area have identified significant, unavoidable impacts to biological communities, including elimination of vernal pools, intermittent drainages and other seasonal wetlands. Despite these impacts, city and county governments continue to implement development projects within the area. A habitat conservation plan (HCP) for South Sacramento County has been discussed and funded inadequately and irregularly since 1994, but completion of the HCP is not currently envisioned due to funding shortfalls.

Valley Elderberry Longhorn Beetle

The beetle was listed as a threatened species under the Act on August 8, 1980 (45 FR 52803). Critical habitat for the species was designated and published at 50 CFR §17.95. Two areas along the American River in the Sacramento metropolitan area have been designated as critical habitat for the beetle. Critical habitat for this species has been designated along the lower American River at Goethe and Ancil Hoffman parks (American River Parkway Zone) and at the Sacramento Zone, an area about a half mile from the American River downstream from the American River Parkway Zone. In addition, an area along Putah Creek, Solano County, and the area west of Nimbus Dam along the American River Parkway, Sacramento County, are considered essential habitat, according to the Valley Elderberry Longhorn Beetle Recovery Plan (Service 1984). These areas support large numbers of mature elderberry shrubs with extensive evidence of use by the beetle.

The beetle is dependent on its host plant, elderberry, which is a locally common component of the remaining riparian forests and savannah areas and, to a lesser extent, the mixed chaparral-foothill woodlands of the Central Valley. Use of the elderberry shrubs by the animal, a wood borer, is rarely apparent. Frequently, the only exterior evidence of the shrub's use by the beetle is an exit hole created by the larva just prior to the pupal stage. Observations made within elderberry shrubs along the Cosumnes River and in the Folsom Lake area indicate that larval galleries can be found in elderberry stems with no evidence of exit holes; the larvae either succumb prior to constructing an exit hole or are not far enough along in the developmental process to construct an exit hole. Larvae appear to be distributed in stems which are 1.0 inch or greater in diameter at ground level. The *Valley Elderberry Longhorn Beetle Recovery Plan* (Service 1984) and Barr (1991) contain further details on the beetle's life history.

Population densities of the beetle are probably naturally low (Service 1984); and it has been suggested, based on the spatial distribution of occupied shrubs (Barr 1991), that the beetle is a poor disperser. Low density and limited dispersal capability cause the beetle to be vulnerable to the negative effects of the isolation of small subpopulations due to habitat fragmentation.

When the beetle was listed as threatened, the species was known from less than 10 localities along the American River, the Merced River, and Putah Creek. By the time the *Valley Elderberry Longhorn Beetle Recovery Plan* was issued, additional species localities had been found along the American River and Putah Creek. As of 1998, the California Natural Diversity Database (CNDDB) included 181 occurrences for this species in 44 drainages throughout the Central Valley, from a location along the Sacramento River in Shasta County, southward to an area along Caliente Creek in Kern County (CNDDB 1998). The beetle continues to be threatened by habitat loss and fragmentation, predation by Argentine ants (*Linepithema humile*), and possibly other factors such as pesticide drift, non-native plant invasion, and grazing.

The following paragraphs analyze the effects of past and ongoing factors leading to the current status of the species, its habitat and ecosystem, throughout the species' range. They include an

analysis of impacts from projects that have received incidental take authorization for the beetle since the species was listed, and an evaluation of conservation efforts aimed at minimizing these impacts, based on the best available information.

Habitat loss has been ranked as the single greatest threat to biodiversity in the United States (Wilcove *et al.* 1998). In the 1980 final rule to list the beetle as threatened, habitat destruction was cited as the primary factor contributing to the need to federally list the species. As stated in the final rule, by the time the species was listed its habitat had largely disappeared throughout much of its former range due to agricultural conversion, levee construction, and stream channelization. The 1984 recovery plan reiterated that the primary threat to the beetle was loss and alteration of habitat by agricultural conversion, grazing, levee construction, stream and river channelization, removal of riparian vegetation, riprapping of shoreline, plus recreational, industrial and urban development (Service 1984).

Riparian forests, the primary habitat for the beetle, have been severely depleted throughout the Central Valley over the last two centuries as a result of expansive agricultural and urban development (Katibah 1984, Thompson 1961, Roberts *et al.* 1977). Since colonization, these forests have been "...modified with a rapidity and completeness matched in few parts of the United States" (Thompson 1961). As of 1849, the rivers and larger streams of the Central Valley were largely undisturbed. They supported continuous bands of riparian woodland four to five miles in width along some major drainages such as the lower Sacramento River, and generally about two miles wide along the lesser streams (Thompson 1961). Most of the riverine floodplains supported riparian vegetation to about the 100-year flood line (Katibah 1984). A large human population influx occurred after 1849, however, and much of the Central Valley riparian habitat was rapidly converted to agriculture and used as a source of wood for fuel and construction to serve a wide area (Thompson 1961). By as early as 1868, riparian woodland had been severely impacted in the Central Valley, as evidenced by the following excerpt:

> This fine growth of timber which once graced our river [Sacramento], tempered the atmosphere, and gave protection to the adjoining plains from the sweeping winds, has entirely disappeared - the woodchopper's axe has stripped the river farms of nearly all the hard wood timber, and the owners are now obliged to rely upon the growth of willows for firewood. (Cronise 1868, *in* Thompson 1961).

The clearing of riparian forests for fuel and construction made this land available for agriculture (Thompson 1977). Natural levees bordering the rivers, once supporting vast tracts of riparian habitat, became prime agricultural land (Thompson 1961, 1977). As agriculture expanded in the Central Valley, needs for increased water supply and flood protection spurred water development and reclamation projects. Artificial levees, river channelization, dam building, water diversion, and heavy groundwater pumping further reduced riparian habitat to small, isolated fragments (Katibah 1984). In recent decades, these riparian areas have continued to decline as a result of ongoing agricultural conversion as well and urban development and stream channelization. As of 1989, there were over 100 dams within the Central Valley drainage basin, as well as thousands of

miles of water delivery canals and streambank flood control projects for irrigation, municipal and industrial water supplies, hydroelectric power, flood control, navigation, and recreation (Frayer *et al.* 1989). Riparian forests in the Central Valley have dwindled to discontinuous strips of widths currently measurable in yards rather than miles.

Some accounts state that the Sacramento Valley supported approximately 775,000 to 800,000 acres of riparian forest as of approximately 1848, just prior to statehood (Smith 1977, Katibah 1984). No comparable estimates are available for the San Joaquin Valley. Based on early soil maps, however, more than 921,000 acres of riparian habitat are believed to have been present throughout the Central Valley under pre-settlement conditions (Katibah 1984). Another source estimates that of approximately 5,000,000 acres of wetlands in the Central Valley in the 1850s, approximately 1,600,000 acres were riparian wetlands (Warner and Hendrix 1985, Frayer *et al.* 1989).

California Department of Fish and Game (CDFG) riparian vegetation distribution map illustrates that by 1979, about 102,000 acres of riparian vegetation was remaining in the Central Valley. This represents a decline in acreage of approximately 89% as of 1979 (Katibah 1984). More extreme figures were given by Frayer *et al.* (1989), who reported that woody riparian forests in the Central Valley had declined to 34,600 acres by the mid-1980s (from 65,400 acres in 1939). Although these studies have differing findings in terms of the number of acres lost (most likely explained by differing methodologies), they attest to a dramatic historic loss of riparian habitat in the Central Valley. As there is no reason to believe that riparian habitat suitable to the beetle (occupied by elderberry shrubs) would be destroyed at a different rate than other riparian habitat, we can assume that the rate of loss for beetle habitat in riparian areas has been equally dramatic.

A number of studies have focused on riparian loss along the Sacramento River, which supports some of the densest known populations of the beetle. Approximately 98% of the middle Sacramento River's historic riparian vegetation was believed to have been extirpated by 1977 (McGill 1979). The State Department of Water Resources estimated that native riparian habitat along the Sacramento River from Redding to Colusa decreased from 27,720 acres to 18,360 acres (34%) between 1952 and 1972 (McGill 1979, Conrad *et al.* 1977). The average rate of riparian loss on the middle Sacramento River was 430 acres per year from 1952 to 1972, and 410 acres per year from 1972 to 1977. In 1987, riparian areas as large as 180 acres were observed converted to orchards along this river (McCarten and Patterson 1987).

Barr (1991) examined 79 sites in the Central Valley supporting beetle habitat. When 72 of these sites were re-examined by researchers in 1997(Collinge *et al.* 2001), seven no longer supported beetle habitat. This represents a decrease in the number of sites with beetle habitat by approximately nine percent in six years. There is no comparable information on the historic loss of non-riparian beetle habitat such as elderberry savanna and other vegetation communities where elderberry occurs (oak or mixed chaparral-woodland, or grasslands adjacent to riparian habitat). However, all natural habitats throughout the Central Valley have been heavily impacted within the last 200 years (Thompson 1961), and we can therefore assume that non-riparian beetle habitat

also has suffered a widespread decline. This analysis focuses on loss of riparian habitat because the beetle is primarily dependent upon riparian habitat. Adjacent upland areas are also likely to be important for the species, but this upland habitat typically consist of oak woodland or elderberry savanna bordering willow riparian habitat (Barr 1991). The riparian acreage figures given by Frayer *et al.* (1989) and Katibah (1984) included the oak woodlands concentrated along major drainages in the Central Valley, and therefore probably included lands we would classify as upland habitat for the beetle adjacent to riparian drainages.

Between 1980 and 1995, the human population in the Central Valley grew by 50%, while the rest of California grew by 37%. The Central Valley's population was 4.7 million by 1999, and it is expected to more than double by 2040. The American Farmland Trust estimates that by 2040 more than 1 million cultivated acres will be lost and 2.5 million more put at risk (Ritter 2000). With this growing population in the Central Valley, increased development pressure is likely to result in continuing loss of riparian habitat.

While habitat loss is clearly a large factor leading to the species' decline, other factors are likely to pose significant threats to the long term survival of the beetle. Only approximately 20% of riparian sites with elderberry observed by Barr (1991) and Collinge *et al.* (2001) support beetle populations (Barr 1991, Collinge *et al.* 2001). Jones and Stokes (1988) found 65% of 4,800 riparian acres on the Sacramento River to have evidence of beetle presence. The fact that a large percentage of apparently suitable habitat is unoccupied suggests that the valley elderberry longhorn beetle is limited by factors other than habitat availability, such as habitat quality or limited dispersal ability.

Destruction of riparian habitat in central California has resulted not only in a loss of acreage, but also in habitat fragmentation. Fahrig (1997) states that habitat fragmentation is only important for habitats that have suffered greater than 80% loss. Riparian habitat in the Central Valley, which has experienced greater than 90% loss by most estimates, would meet this criterion as habitat vulnerable to effects of fragmentation. Existing data suggests that beetle populations, specifically, are affected by habitat fragmentation. Barr (1991) found that small, isolated habitat remnants were less likely to be occupied by beetles than larger patches, indicating that beetle subpopulations are extirpated from small habitat fragments. Barr (1991) and Collinge *et al.* (2001) consistently found beetle exit holes occurring in clumps of elderberry bushes rather than isolated bushes, suggesting that isolated shrubs do not typically provide long-term viable habitat for this species. Local populations of organisms often undergo periodic colonization and extinction, while the metapopulation (set of spatially separated groups of a species) may persist (Collinge 1996).

Habitat fragmentation can be an important factor contributing to species declines because; (1) it divides a large population into two or more small populations that become more vulnerable to direct loss, inbreeding depression, genetic drift, and other problems associated with small populations; (2) it limits a species' potential for dispersal and colonization; and (3) it makes

habitat more vulnerable to outside influences by increasing the edge:interior ratio (Primack 1998). These factors, as they relate to the beetle, are discussed below.

Small, isolated subpopulations are susceptible to extirpation from random demographic, environmental, and/or genetic events (Shaffer 1981, Lande 1988, Primack 1998). While a large area may support a single large population, the smaller subpopulations that result from habitat fragmentation may not be large enough to persist over a long time period. As a population becomes smaller, it tends to lose genetic variability through genetic drift, leading to inbreeding depression and a lack of adaptive flexibility. Smaller populations also become more vulnerable to random fluctuations in reproductive and mortality rates, and are more likely to be extirpated by random environmental factors.

Species that characteristically have small population sizes, such as large predators or habitat specialists, are more likely to become extinct than species that typically have large populations (Primack 1998). Also, a species with low population density (few individuals per unit area) tends to have only small populations remaining if its habitat is fragmented. Populations of species that naturally occur at lower density become extinct more rapidly than do those of more abundant species (Bolger *et al.* 1991). The species may be unable to persist within each fragment, and gradually die out across the landscape.

The beetle, a specialist on elderberry plants, tends to have small population sizes, and to occur in low densities (Barr 1991, Collinge *et al.* 2001). Collinge *et al.* (2001) compared resource use and density of exit holes between the beetle and a related subspecies, the California elderberry longhorn beetle (*Desmocerus californicus californicus*). The beetle tended to occur in areas with higher elderberry densities, but had lower exit hole densities than the California elderberry longhorn beetle. With extensive riparian habitat loss and fragmentation, these naturally small populations are broken into even smaller, isolated populations. Once a small population has been extirpated from an isolated habitat patch, the species may be unable to re-colonize this patch if it is unable to disperse from nearby occupied habitat.

Insects with limited dispersal and colonization abilities may persist better in large habitat patches than small patches because small fragments may be insufficient to maintain viable populations and the insects may be unable to disperse to more suitable habitat (Collinge 1996). Studies suggest that the beetle is unable to re-colonize drainages where the species has been extirpated, because of its limited dispersal ability (Barr 1991; Collinge *et al.* 2001). Huxel and Hastings (1999) used computer simulations of colonization and extinction patterns for the beetle based on differing dispersal distances, and found that the short dispersal simulations best matched the 1997 census data in terms of site occupancy. This data suggests that in the natural system dispersal and, thus, colonization is limited to nearby sites. At spatial scales greater than 10 kilometers, such as across drainages, beetle occupancy appears to be strongly influenced by regional extinction and colonization processes, and colonization is constrained by limited dispersal (Collinge *et al.* 2001). Except for one occasion, drainages examined by Barr that were occupied in 1991 remained occupied in 1997 (Collinge *et al.* in 2001). The one exception was Stoney Creek, which was

occupied in 1991 but not in 1997. All drainages found by Barr (1991) to be unoccupied in 1991 were also unoccupied in 1997. This data suggests that drainages unoccupied by the beetle remain so.

Habitat fragmentation not only isolates small populations, but also increases the interface between habitat and urban or agricultural land, increasing negative edge effects such as the invasion of non-native species (Huxel 2000, Soule 1990) and pesticide contamination (Barr 1991). There are several edge effect-related factors that may be related to the decline of the beetle.

Recent evidence indicates that the invasive Argentine ant poses a risk to the long-term survival of the beetle. Surveys along Putah Creek found beetle presence where Argentine ants were not present or had recently colonized, and beetle absence from otherwise suitable sites where Argentine ants had become established (Huxel 2000). The Argentine ant has negatively impacted populations of other native arthropod species (Holway 1995; Ward 1987). Predation on eggs, larvae, and pupae are the most likely impacts these ants have on the beetle. In Portugal, Argentine ants have been found to be significant egg predators on the eucalyptus borer (*Phorocantha semipunctata*), a cerambycid like the beetle. Egg predation on the beetle could lead to local extirpations, as indicated by a population viability study suggesting that egg and juvenile mortality are significant factors affecting probability of extinction for the beetle (Huxel 2000, Collinge 2001). The Argentine ant has been expanding its range throughout California since its introduction around 1907, especially in riparian woodlands associated with perennial streams (Holway 1995, Ward 1987). Huxel (2000) states that, given the potential for Argentine ants to spread with the aid of human activities such as movement of plant nursery stock and agricultural products, this species may come to infest most drainages in the Central Valley along the valley floor, where the beetle is found.

Direct spraying and drift of pesticide, including herbicides and/or insecticides, in or near riparian areas (which is done to control mosquitos, crop diseases, invasive and/or undesirable plants, or other pests) is likely to adversely affect the beetle and its habitat. Although there have been no studies specifically focusing on the effects of pesticides on the beetle, the beetle is likely to be adversely affected by pesticides since pesticides often affect numerous non target invertebrate species. As of 1980, the prevalent land use adjacent to riparian habitat in the Sacramento Valley was agriculture, even in regions where agriculture was not generally the most common land use (Katibah *et al.* 1984), therefore, the species is likely vulnerable to pesticide contamination from adjacent agricultural practices. Recent studies of major rivers and streams documented that 96% of all fish, 100% of all surface water samples and 33% of major aquifers contained one or more pesticides at detectable levels (Gilliom 1999). Pesticides were identified as one of the 15 leading causes of impairment for streams included on the Federal Water Pollution Control Act, as amended (Clean Water Act), section 303(d) lists of impaired waters. As the beetle occurs primarily in riparian habitat, the contamination of rivers and streams affects this species and its habitat. Pesticides have been identified as one of a number of potential causes of pollinator species' declines and declines of other insects beneficial to agriculture (Ingraham *et al.* 1996);

therefore it is likely that the beetle, typically occurring adjacent to agricultural lands, has suffered a decline due to pesticides.

Competition from invasive non-native plants such as giant reed (*Arundo donax*) negatively affects riparian habitat supporting the beetle. It has an extensive root system allowing it to resprout rapidly after any disturbance and out-compete native riparian vegetation. Giant reed also introduces a frequent fire cycle into the riparian ecosystem, disrupting natural riparian dynamics and eventually forming homogenous climax communities. The extent to which giant reed has affected elderberry specifically, however, has not been studied.

Grazing by livestock damages or destroys elderberry plants and inhibits regeneration of seedlings. Cattle readily forage on new growth of elderberry, which may explain the absence of beetles at manicured elderberry stands (Service 1984). Habitat fragmentation exacerbates problems related to non-native species invasion and cattle grazing by increasing the edge-to-interior ratio of habitat patches, facilitating the penetration of these influences.

All of the above effects to the species has resulted in a dramatic reduction to species numbers. A search of the CNDDB shows that there are a total of 20 occurrences in Sacramento County. Of the 20 occurrences in Sacramento County, 20 are presumed extant.

Giant Garter Snake

The Service published a proposal to list the giant garter snake as an endangered species on December 27, 1991 (56 **FR** 67046). The Service reevaluated the status of the snake before adopting the final rule. The snake was listed as a threatened species on October 20, 1993 (58 **FR** 54053).

Description

The giant garter snake is one of the largest garter snakes and may reach a total length of at least 64 inches (160 centimeters). Females tend to be slightly longer and proportionately heavier than males. The weight of adult female snakes is typically 1.1-1.5 pounds (500-700 grams). Dorsal background coloration varies from brownish to olive with a checkered pattern of black spots, separated by a yellow dorsal stripe and two light-colored lateral stripes. Background coloration and prominence of a black-checkered pattern and the three yellow stripes are geographically and individually variable (Hansen 1980). The ventral surface is cream to olive or brown and sometimes infused with orange, especially in northern populations.

Historical and Current Range

This species formerly occurred throughout the wetlands that were extensive and widely distributed in the Central Valley. Fitch (1941) described the historical range of the snake as extending from the vicinity of Sacramento and Contra Costa Counties southward to Buena Vista

Lake, near Bakersfield, in Kern County. Prior to 1970, the snake was recorded historically from 17 localities (Hansen and Brode 1980). Five of these localities were clustered in and around Los Banos, Merced County. The paucity of information makes it difficult to determine precisely the species' former range. Nonetheless, these records coincide with the historical distribution of large flood basins, fresh water marshes, and tributary streams. Destruction of wetlands for agriculture and other purposes apparently extirpated the species from the southern one-third of its range by the 1940s -1950s, including the former Buena Vista Lake and Kern Lake in Kern County, and the historic Tulare Lake and other wetlands in Kings and Tulare Counties (Hansen and Brode 1980, Hansen 1980). Surveys over the last two decades have found the snake as far north as the Butte Basin in the Sacramento Valley. As recently as the 1970s, the range of the snake extended from near Burrell, Fresno County (Hansen and Brode 1980), northward to the vicinity of Chico, Butte County (Rossman and Stewart 1987).

Essential Habitat Components

Endemic to wetlands in the Sacramento and San Joaquin valleys, the snake inhabits marshes, sloughs, ponds, small lakes, low gradient streams, and other waterways and agricultural wetlands, such as irrigation and drainage canals and rice fields, and the adjacent uplands. The snake feeds on small fishes, tadpoles, and frogs (Fitch 1941, Hansen 1980). Essential habitat components consist of: (1) wetlands with adequate water during the snake's active season (early-spring through mid-fall) to provide food and cover; (2) emergent, herbaceous wetland vegetation, such as cattails and bulrushes, for escape cover and foraging habitat during the active season; (3) upland habitat with grassy banks and openings in waterside vegetation for basking; and (4) higher elevation uplands for escape cover (vegetation, burrows) and underground refugia (crevices and small mammal burrows) (Hansen 1980).

Reproductive Ecology

The breeding season extends through March and April, and females give birth to live young from late July through early September (Hansen and Hansen 1990). Brood size is variable, ranging from 10 to 46 young, with a mean of 23 (Hansen and Hansen 1990). At birth young average about 20.6 cm snout-vent length and 3-5 grams. Young immediately scatter into dense cover and absorb their yolk sacs, after which they begin feeding on their own. Although growth rates are variable, young typically more than double in size by one year of age, and sexual maturity averages three years in males and five years for females (58 **FR** 54053).

Movements and Habitat Use

The snake typically inhabits small mammal burrows and other soil crevices throughout its winter dormancy period (November to mid-March). The snake also uses burrows as refuge from extreme heat during their active period. While the snakes usually remain in close proximity to wetland habitats, the Biological Resource Division (BRD) has documented snakes using burrows as much as 165 feet (50 meters) away from the marsh edge to escape extreme heat (Wylie *et al.*

1997). Overwintering snakes have been documented to use burrows as far as 820 feet (250 meters) from the edge of marsh habitat. Snakes typically select south- and west-facing burrows as hibernacula (58 **FR** 54053).

In studies of marked snakes in the Natomas Basin, snakes moved about 0.25 to 0.5 mile per day (Hansen and Brode 1993). However, total activity varies widely between individuals, and individual snakes have been documented moving up to 5 miles (8 kilometers) over the period of a few days in response to dewatering of habitat (Wylie *et al.* 1997). In agricultural areas, snakes were documented using rice fields in 19-20 percent of the observations, marsh habitat in 20-23 percent of observations, and canal and agricultural waterway habitats in 50-56 percent of the observations (Wylie 1999). Telemetry studies have also shown that active snakes use uplands extensively–more than 31 percent of observations were in uplands (Wylie 1999). Almost all snakes observed in uplands during the active season were near vegetative cover, where cover exceeded 50 percent in the area within 0.5 m (1.6 ft) of the snake; less than 1 percent of observations were of snakes in uplands with less than 50 percent cover nearby (Wylie 1999).

Reasons for Decline and Threats to Survival

The current distribution and abundance of the snake is much reduced from former times. Loss of habitat due to agricultural activities and flood control have extirpated the snake from the southern one third of its range in former wetlands associated with the historic Buena Vista, Tulare, and Kern lakebeds. These lakebeds once supported vast expanses of ideal snake habitat, consisting of cattail and bulrush dominated marshes. Vast expanses of bulrush and cattail floodplain habitat also typified much of the Sacramento Valley historically (Hinds 1952). Prior to reclamation activities beginning in the mid to late 1800s, about 60 percent of the Sacramento Valley was subject to seasonal overflow flooding in broad, shallow flood basins that provided expansive areas of snake habitat (Hinds 1952). Valley floor wetlands are subject to the cumulative effects of upstream watershed modifications, water storage and diversion projects, as well as urban and agricultural development; all natural habitats have been lost and an unquantifiable but small percentage of semi-natural wetlands remain extant. Only a small percentage of extant wetlands currently provide habitat suitable for the snake.

Ongoing maintenance of aquatic habitats for flood control and agricultural purposes eliminate or prevent the establishment of habitat characteristics required by snakes and can fragment and isolate available habitat, prevent dispersal of snakes among habitat units, and adversely affect the availability of the garter snake's food items (Hansen 1988, Brode and Hansen 1992). In many areas, the restriction of suitable habitat to water canals bordered by roadways and levee tops renders snakes vulnerable to vehicular mortality. Fluctuation in rice and agricultural production affects stability and availability of habitat. Recreational activities, such as fishing, may disturb snakes and disrupt basking and foraging activities. Nonnative predators, including introduced predatory gamefish, bullfrogs (*Rana catesbeiana*), and domestic cats (*Felis catus*) also threaten snake populations. While large areas of seemingly suitable snake habitat exist in the form of duck clubs and waterfowl management areas, water management of these areas typically does not

provide the summer water needed by snakes. Although snakes on national wildlife refuges are relatively protected from many of the threats to the species, degraded water quality continues to be a threat to the species both on and off refuges. A number of land use practices and other human activities currently threaten the survival of the snake throughout the remainder of its range. Although some snake populations have persisted at low levels in artificial wetlands associated with agricultural and flood control activities, many of these altered wetlands are now threatened with urban development.

Status with Respect to Recovery

The draft recovery plan for the snake subdivided its historic range into four recovery units (Service 1999). These are: (1) the Sacramento Valley unit, extending from the vicinity of Red Bluff south to the confluence of the Sacramento and Feather Rivers; (2) the Mid-Valley unit, extending from the American and Yolo Basins south to Duck Creek near the City of Stockton; (3) the San Joaquin Valley unit, extending south from Duck Creek to the Kings River; and (4) the South Valley unit, extending south of the Kings River to the Kern River Basin. Portions of Mid-Valley recovery unit are within the action area.

The Sacramento Valley Recovery Unit at the northern end of the species' range is known to support relatively large, stable populations of the snake. This unit contains three populations (Butte Basin, Colusa Basin, and Sutter Basin) and a large amount of suitable habitat, in protected areas on state refuges and refuges of the Sacramento National Wildlife Refuge (NWR) Complex in the Colusa and Sutter Basins, and along waterways associated with rice farming (Service 1999).

The Mid-Valley Recovery Unit, directly to the south of the Sacramento Valley Recovery Unit, includes seven populations: American Basin, Yolo Basin–Willow Slough, Yolo Basin–Liberty Farms, Sacramento Area, Badger Creek/Willow Creek, Caldoni Marsh, and East Stockton. The status of the seven snake populations in the Mid-Valley Recovery Unit is very uncertain. The East Stockton population may be extirpated, and is not considered recoverable as a result of urban encroachment into habitat (Service 1999). Five of the remaining six populations within the recovery unit are very small, highly fragmented and isolated, and, except for the Badger Creek/Willow Slough population, are also threatened by urbanization. This latter population is within a small isolated area. Within the Mid-Valley unit, only the American Basin population supports a sizeable snake population which is dependent largely upon rice lands.

The remaining two recovery units are located to the south in the San Joaquin Valley, where the best available data indicate that the snake's status is precarious. The San Joaquin Valley Recovery Unit contains three historic snake populations: North and South Grasslands; Mendota Area; and Burrel/Lanare Area (Service 1999). This recovery unit formerly supported large snake populations, but numbers have declined severely in recent decades, and recent survey efforts indicate numbers are very low compared to Sacramento Valley populations.

No surviving snake populations are known from the fourth recovery unit, the South Valley Recovery Unit, at the southern end of the snake's historic range; this unit includes only extirpated populations, including the historic but lost Tulare and Buena Visa lakes.

The draft recovery criteria require multiple, stable populations within each of the four recovery units, with subpopulations well-connected by corridors of suitable habitat. Currently, only the Sacramento Valley Recovery Unit, at the northern end of the species' range, is known to support relatively large, stable populations. Habitat corridors connecting populations or subpopulations, even for the Sacramento Valley Recovery Unit, are not present and/or protected.

In 1994, the BRD (then the National Biological Survey) began a study of the life history and habitat requirements of the snake in response to an interagency request from the Service. Since April of 1995, the BRD has further documented occurrences of snakes within some of the known populations. The BRD has studied snake subpopulations at the Sacramento and Colusa NWRs within the Colusa Basin, at Gilsizer Slough within the Sutter Basin, the Badger Creek area of the Cosumnes River Preserve within the Badger Creek-Willow Creek area, and the Natomas area within the American Basin (Wylie *et al.* 1997, Wylie 1999). These subpopulations represent the largest known extant subpopulations. With the exception of the American Basin, these subpopulations are largely protected from many of the threats to the species. Outside of these protected areas, snakes in these populations are still subject to all the threats identified in the final listing rule. The remaining nine populations identified in the final rule are distributed discontinuously in small isolated patches and are vulnerable to extirpation by stochastic environmental, demographic, and genetic processes. The 13 extant populations are largely isolated from each other, with any dispersal corridors between them limited and not protected. When small populations are extirpated, the recolonization is unlikely in most cases, given the isolation from larger populations and the lack of dispersal corridors between them.

Environmental Baseline

Surveys over the last two decades have located the giant garter snake as far north as the Butte Basin in the Sacramento Valley. Currently, the Service recognizes 13 separate populations of giant garter snake, with each population representing a cluster of discrete locality records. The 13 extant population clusters largely coincide with historical riverine flood basins and tributary streams throughout the Central Valley (Hansen 1980, Brode and Hansen 1992): (1) Butte Basin, (2) Colusa Basin, (3) Sutter Basin, (4) American Basin, (5) Yolo Basin-Willow Slough, (6) Yolo Basin-Liberty Farms, (7) Sacramento Basin, (8) Badger Creek-Willow Creek, (9) Caldoni Marsh, (10) East Stockton-Diverting Canal and Duck Creek, (11) North and South Grasslands, (12) Mendota, and (13) Burrell-Lanare. These populations span the Central Valley from just southwest of Fresno (Burrell-Lanare) north to Chico (Hamilton Slough). The 11 counties where the giant garter snake is still presumed to occur are: Butte, Colusa, Glenn, Fresno, Merced, Sacramento, San Joaquin, Solano, Stanislaus, Sutter and Yolo.

Since April of 1995, the BRD has further documented occurrences of giant garter snakes within some of the 13 populations identified in the final rule. The BRD has studied populations of giant garter snakes at the Sacramento and Colusa National Wildlife Refuges within the Colusa Basin, at Gilsizer Slough within the Sutter Basin, and at the Badger Creek area of the Cosumnes River Preserve within the Badger Creek-Willow Creek area. These populations, along with the American Basin population of giant garter snakes represent the largest extant populations. With the exception of the American Basin, these populations are largely protected from many of the threats to the species. Outside of these protected areas, giant garter snakes in these population clusters are still subject to all threats identified in the final rule. The remaining nine population clusters identified in the final rule are distributed discontinuously in small isolated patches and are vulnerable to extirpation by stochastic environmental, demographic, and genetic processes. All 13 population clusters are isolated from each other with no protected dispersal corridors. Opportunities for recolonization of small populations which may become extirpated is unlikely given the isolation from larger populations and lack of dispersal corridors between them.

The current distribution and abundance of the giant garter snake is much reduced from former times. Agricultural and flood control activities have extirpated the giant garter snake from the southern one third of its range in former wetlands associated with the historic Buena Vista, Tulare, and Kern lakebeds. These lakebeds once supported vast expanses of ideal giant garter snake habitat, consisting of cattail and bulrush dominated marshes. Vast expanses of bulrush and cattail floodplain habitat also typified much of the Sacramento Valley historically (Hinds 1952). Prior to reclamation activities beginning in the mid to late 1800s, about 60 percent of the Sacramento Valley was subject to seasonal overflow flooding in broad, shallow flood basins that provided expansive areas of giant garter snake habitat (Hinds 1952). Valley floor wetlands are subject to the cumulative effects of upstream watershed modifications, water storage and diversion projects, as well as urban and agricultural development; all natural habitats have been lost and an unquantifiably small percentage of seminatural wetlands remain extant. Only a small percentage of extant wetlands currently provides habitat suitable for the giant garter snake.

The giant garter snake currently is only known from a small number of populations. The status of these populations and the threats to these snakes and their habitats are detailed in the final rule that listed the giant garter snake as threatened (58 **FR** 54053). A number of land use practices and other human activities currently threaten the survival of the giant garter snake throughout the remainder of its range. Although some giant garter snake populations have persisted at low levels in artificial wetlands associated with agricultural and flood control activities, many of these altered wetlands are now threatened with urban development. Cities within the current range of the giant garter snake that are rapidly expanding include: (1) Chico, (2) Yuba City, (3) Sacramento, (4) Galt, (5) Stockton, (6) Gustine, and (7) Los Banos.

There are ten records of the giant garter snake within 5 miles of the proposed project area in the California Natural Diversity Data Base.

Effects of the Proposed Action

The proposed project's effects on general fish and wildlife resources, federally listed species and the proposed compensation for project impacts are summarized in Table 2 below.

Table 2. General habitat project effects and proposed compensation for the South Sacramento County Streams Investigation Project.

Cover Type and Location	Project Effects	Proposed Compensation
Upper Basin		
Morrison Creek Riparian Scrub-shrub Seasonal Wetland (creek channel non-snake habit) Upland Agriculture	 temporary losses* temporary losses* temporary losses* 1.8 acres	 0.71 acre seasonal wetland** 0.71 acre seasonal wetland** none proposed none proposed
Elder Creek Seasonal wetland (creek channel) Upland	 temporary losses* temporary losses*	 0.71 acre seasonal wetland** none proposed
Florin Creek Seasonal wetland (creek channel) Upland	 temporary losses* temporary losses*	 0.71 acre seasonal wetland** none proposed
Lower Basin		
North Beach Lake Levee Riparian scrub shrub Agriculture Farmed wetland (vernal pool species assumed present) Upland giant garter snake refugia	 0.11 acre 8.6 acres 0.75 acre temporary disturbance	 0.19 acre riparian scrub-shrub none proposed preservation of 2.25 acres at a non-bank site) and creation of 0.75 acres of vernal pools at a bank site standard avoidance and minimization measures
Treatment Plant Emergent marsh (non-snake habitat) Vernal pool Upland/Agricultural Giant garter snake habitat	 0.23 acre 1.04 acres 4.2 acres 1.6 acres	 0.23 acre of emergent marsh preservation of 4.1 acres and creation of 2.08 acres of vernal pool*** none proposed creation of 1.6 acres of aquatic habitat and preserve 3.2 acres of upland
Bufferlands Restoration Areas Giant garter snake habitat	4.9 acres	9.5 acres of seasonal wetland preserved 1.1 acre of emergent marsh created
Total	18.33	

*=temporary loss of seasonal wetland loss and riparian scrub-shrub in the upper basin creeks totaled, 0.71 AAHU's.
**=0.71 acre of seasonal wetland mitigation was constructed at the Bufferlands in 2000.
***=vernal pool creation credits purchased by SAFCA on May 18, 2000.

Vernal Pool Tadpole and Vernal Pool Fairy Shrimp

The proposed project would result in the fill of 0.75 acre of vernal pool crustacean habitat at the North Beach Lake Levee site. As a result of the advanced unauthorized work at the Treatment Plant, an additional 1.04 acres of vernal pool crustacean habitat was filled. No adverse effects would occur to both vernal pool species as a result of the restoration work. However, compensation for project impacts would benefit both species with the preservation of 6.35 acres of vernal pool habitat under a conservation easement at the Sims Field Vernal Pool Complex and the purchase of 2.83 acres of vernal pool creation credits at a Service approved conservation bank.

Valley Elderberry Longhorn Beetle

The proposed action may adversely affect all beetles inhabiting 72 elderberry shrubs that contain at least one stem measuring 1.0 inch or greater in diameter at ground level in the project area. Any beetle larvae occupying these plants may be directly affected when the seven shrubs are removed.

Transplantation of elderberry shrubs that are or could be used by beetle larvae may adversely affect the beetle. Beetle larvae may be killed or the beetles' life cycle may be interrupted during or after the transplanting process. For example:

1. Transplanted elderberry shrubs may experience stress or become unhealthy due to changes in soil, hydrology, microclimate, or associated vegetation. This may reduce their quality as habitat for the beetle, or impair their production of quality stems in the future.

2. Elderberry shrubs may die as a result of transplantation.

3. Branches containing larvae may be cut, broken, or crushed as a result of the transplantation process.

No adverse effects to the beetle would occur as a result of the restoration work as all construction activity would be greater than 100 feet away from any elderberry shrubs. However, the restoration work would increase habitat for the beetle by including 27.4 acres of riparian habitat mixed with elderberry shrubs. Planting additional native species at the conservation area may serve to attract the beetle. Using local natives may increase the colonization rate for the beetle, because the beetle may have evolved characteristics that select for a specific species of local elderberry or other specific local native riparian species. Recent studies by Longcore *et al.* (1997) have found that some species of native insects may be killed or unable to use plant species from different geographic areas, even when they are native species, because different plant populations may contain varying amounts of chemicals, some of which may be toxic to herbivorous insects. Thus, only locally collected native plant species should be used for restoration or other activities

that are intended to benefit the beetle.

Giant Garter Snake

As a result of the unauthorized work, 1.6 acres of potential giant garter snake habitat was permanently eliminated. Project construction and restoration activities would permanently impact 4.9 acres of suitable giant garter snake upland habitat. Construction activities associated with the proposed restoration activities such as mowing or discing, may cause temporary disturbance to giant garter snake habitat. Additional impacts include trapping of snakes by erosion control matting, and accidental release of deleterious fluids (Stuart *et al.* 2001). The temporary disturbance of suitable giant garter snake habitat (9.8 acres) may also cause incidental take of the snake. The avoidance and minimization measures identified above should reduce or avoid effects to the giant garter snake. The restoration work will result in the permanent loss of giant garter snake upland basking habitat from the conversion of stream and lake edge habitat into riparian and shaded riverine aquatic habitat. The loss of submerged and shoreline vegetation will reduce the amount of cover subjecting giant garter snakes to a greater likelihood of predation, if appropriate shoreline vegetation is not replanted. Appropriate shoreline vegetation can provide cover, foraging, basking, and other behaviors. Upland plants can provide a buffer between the water and human activities such as walking or fishing, disturbed soils that are not replanted quickly may provide optimum soil conditions for colonization by yellow star thistle (*Centaurea solstitialis*). Star thistle can form a dense impenetrable barrier that my preclude giant garter snakes from moving through. Overall, the restoration work would benefit the giant garter snake by providing 9.5 acres of improved seasonal wetland habitat and the creation of 1.1 acres of emergent marsh habitat.

Cumulative Effects

Cumulative effects are those impacts of future State, Tribal, county, local agency, and private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section, because they require a separate consultation pursuant to section 7 of the Act. Our agency is aware of other projects currently under review by State, county, and local authorities where biological surveys have documented the occurrence of the federally proposed or listed species. These projects include such actions as urban expansion, water transfer projects that may not have a Federal nexus, and continued agricultural development. The cumulative effects of these known actions pose a significant threat to the eventual recovery of these species.

An undetermined number of future land use conversions and routine agricultural practices are not subject to Federal permitting processes and may alter the habitat or increase incidental take of vernal pool fairy shrimp, vernal pool tadpole shrimp, valley elderberry longhorn beetle, giant garter snakes and are, therefore, cumulative to the proposed project. These additional cumulative effects include: (1) unpredictable fluctuations in aquatic habitat due to water management; (2) dredging and clearing vegetation from irrigation canals; (3) discing or mowing upland habitat; (4)

increased vehicular traffic on access roads adjacent to aquatic habitat; (5) use of burrow fumigants on levees and other potential upland refugia; (6) human intrusion into habitat; (7) diversion of water; and (8) rip rapping or lining of canals and stream banks.

Conclusion

After reviewing the current status of the vernal pool fairy shrimp, vernal pool tadpole shrimp, valley elderberry longhorn beetle, giant garter snake, the environmental baseline for the action area, the effects of the proposed project and the cumulative effects, it is the Service's biological opinion that the project, as proposed, is not likely to jeopardize the continued existence of these four species. The action area is outside the designated critical habitat area for the beetle, therefore none will be destroyed or adversely modified. No critical habitat has been designated for the vernal pool fairy shrimp, vernal pool tadpole shrimp, or the giant garter snake; therefore, none will be affected or adversely modified.

INCIDENTAL TAKE STATEMENT

Section 9(a)(1) of the Act and Federal regulation pursuant to section 4 (d) of the Act prohibit the take of endangered and threatened fish and wildlife species without special exemption. Take is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harass is defined by the Service as an intentional or negligent act or omission which creates the likelihood of injury to a listed species by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. Harm is defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by impairing behavioral patterns including breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and the section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided such taking is in compliance with this Incidental Take Statement.

The measures described below are non-discretionary, and must be implemented by the Corps so that they become binding conditions of any grant or permit issued to the applicant, as appropriate, in order for the exemption in section 7(o)(2) to apply. The Corps has a continuing duty to regulate the activity covered by this incidental take statement. If the Corps (1) fails to require the applicant to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, and/or (2) fails to retain oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) may lapse.

Amount or Extent of Take

Vernal Pool Tadpole and Vernal Pool Fairy Shrimp

The Service expects that incidental take of vernal pool crustaceans will be difficult to detect or quantify for the following reasons: the cryptic nature of the organisms and the relatively small body size make the finding of a dead specimen unlikely, the secretive nature of the species, losses may be masked by seasonal fluctuations in numbers or other causes, and the species occurs in habitat that makes them difficult to detect. Due to the difficulty in quantifying the number of individuals that will be taken as a result of the proposed action, the Service is quantifying take incidental to South Sacramento County Streams Investigation Project as the amount of habitat that will become unsuitable or less suitable for the species as a result of the action.

Vernal pool crustacean habitat totaling 0.75 acre will become unsuitable as a result of the direct impacts from the construction of the proposed project. The Service has developed this Incidental Take Statement based on the premise that the proposed conservation measures and the reasonable and prudent measures will be implemented. Upon implementation of the proposed conservation measures and the reasonable and prudent measures, incidental take in the form of killing or harm of all vernal pool crustaceans inhabiting 0.75 acre of vernal pools, associated with South Sacramento County Streams Investigation will become exempt from the prohibitions described under section 9 of the Act.

Valley Elderberry Longhorn Beetle

The Service expects that incidental take of the beetle will be difficult to detect or quantify. The cryptic nature of this species and its relatively small body size make the finding of an injured or dead specimen unlikely. The species occurs in habitats that make them difficult to detect. Due to the difficulty in quantifying the number of beetles that will be taken as a result of the proposed action, the Service is quantifying take incidental to the project as the number of beetles inhabiting elderberry stems greater than one inch in diameter at ground level. Take is further described in terms of the host plant's occupancy by beetles, and by the riparian or upland location of the shrub.

Upon implementation of the Corps proposed conservation measures and the reasonable and prudent measures, the Corps may incidentally take all beetles inhabiting the 146 elderberry stems greater than one inch in diameter at ground level, on 72 elderberry shrubs (see Appendix 1), and will become exempt from the prohibitions described under section 9 of the Act.

Giant Garter Snake

The Service anticipates that incidental take of the snake will be difficult to detect or quantify for the following reasons: giant garter snakes are cryptically colored, secretive, and known to be sensitive to human activities. Snakes may avoid detection by retreating to burrows, soil crevices, vegetation, or other cover. Individual snakes are difficult to detect at a distance. Most

close-range observations represent chance encounters that are difficult to predict. It is not possible to make an accurate estimate of the number of snakes that will be harassed, harmed or killed during construction activities (staging areas, work on canal banks, soil borrow areas, and vehicle traffic to and from borrow areas). In instances when take is difficult to detect, the Service estimates take in numbers of habitat acres lost or affected as a result of the action. Therefore, the Service anticipates that all giant garter snakes inhabiting 9.8 acres of giant garter snake habitat affected may be harassed, harmed, or killed by modification and degradation of habitat as a result of the proposed project. Additionally, all giant garter snakes inhabiting suitable habitat within 200 linear feet of the project will be harassed.

Upon implementation of the proposed conservation measures and the following reasonable and prudent measures, incidental take associated with the South Sacramento County Streams Investigation Project on these acres in the form of harm, harassment, or mortality to giant garter snake from habitat loss and disturbance will become exempt from the prohibitions described under section 9.

Effect of the Take

The Service has determined that this level of anticipated take is not likely to result in jeopardy to the vernal pool fairy shrimp, vernal pool tadpole shrimp, beetle, and the giant garter snake. The critical habitat for the beetle will not be adversely modified or destroyed by the proposed action. Critical habitat has not been proposed or designated for the vernal pool fairy shrimp, vernal pool tadpole shrimp or the giant garter snake; therefore, none will be adversely modified or destroyed.

Reasonable and Prudent Measures

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize incidental take of listed species:

1. The effects of habitat loss to vernal pool crustaceans from the proposed South Sacramento County Streams Investigation Project shall be minimized.

2. Minimize the effects of habitat loss and project impacts to the beetle and to elderberry shrubs (habitat) throughout the proposed project area.

3. Harassment, harm, or take of giant garter snakes during construction activities associated with implementing the South Sacramento County Streams Investigation Project shall be minimized.

4. Impacts of temporary and degradation of habitat of giant garter snakes shall be minimized and, to the greatest extent practicable, habitat restored to its pre-project condition. Temporal and permanent loss of habitat shall be compensated.

Terms and Conditions

To be exempt from the prohibitions of section 9 of the Act, the Corps will ensure implementation of the following terms and conditions, which implements the reasonable and prudent measures described above. These terms and conditions are non-discretionary:

Vernal Pool SP.

The following terms and conditions implement reasonable and prudent measure number one:

a. The Corps shall implement the conservation measures described in the project description of pages 9-12 of this biological opinion.

b. Prior to ground breaking, the Corps will establish a conservation area in perpetuity as habitat for the vernal pool fairy shrimp and vernal pool tadpole shrimp through a Service- approved conservation easement, Service-approved management plan, and an endowment fund of sufficient amount to manage the conservation area in perpetuity.

VELB

The following terms and conditions implement reasonable and prudent measure number two:

a. The Corps shall implement the conservation measures described in the project description of pages 9-12 of this biological opinion.

b. Prior to ground breaking, the Corps shall plant an additional 198 elderberry seedlings and 255 associated native species at the Bufferlands conservation area. To provide adequate area for these additional seedlings, the Corps shall secure a 1.67-acre conservation area for the beetle through a conservation easement.

c. The Corps shall comply with the Service's Guidelines and all of the proposed conservation measures.

May have to do this fall

d. Prior to ground breaking, the Corps shall transplant, between November 1 and February 15, the seven elderberry plants on the project site to the conservation area. The transplantation shall be in accordance with the Service's Guidelines.

e. All plant stock shall consist of native California species collected from local sources within a ten (10) mile radius of the project site, unless otherwise approved by the Service.

f. Only certified weed-free straw/hay bales, if bales are used, shall be used for erosion control.

g. Prior to ground breaking the Corps shall establish the conservation area in perpetuity as habitat for the beetle through a Service-approved conservation easement, Service-approved management plan, and an endowment fund of sufficient size to manage the

Not clear - same as (b)?

conservation area in perpetuity. The easement shall include land (buffer) 100 feet away from any elderberry plants within the conservation area.

GGS The following terms and conditions implement reasonable and prudent measure number three:

a. Construction activity within giant garter snake habitat shall be conducted between May 1 and October 1.

b. Between April 15 and October 1 any dewatered habitat must remain dry for at least 15 consecutive days prior to excavating or filling of the dewatered habitat.

c. Construction personnel shall receive Service-approved worker environmental awareness training. This training instructs workers to recognize giant garter snakes and their habitat(s). Proof of such training shall be submitted to the Service prior to start of construction. Include the Service file number 1-1-01-F-0043.

d. Project area shall be surveyed by a Service-approved biologist for giant garter snake 24 hours prior to construction activities, and resurveyed if a lapse of two weeks or greater has occurred. The monitoring biologist shall have the authority to stop construction activities if a snake is encountered during construction until appropriate corrective measures have been completed or until the snake is determined to be unharmed. Snakes should be allowed to move away from the area on their own. Sightings will be immediately reported to the Service at (916) 414-6600.

e. Plastic mono-filament, jute, or cord netting (erosion control matting) shall not be used for erosion control or other purposes at the project site as the giant garter snake may be entrapped or killed in it.

GGS The following terms and conditions implement reasonable and prudent measure number four:

a. To minimize and compensate for permanent loss of 1.6 acres of suitable snake habitat, the Corps will acquire 1.6 acres of giant garter snake aquatic habitat and 3.2 acres of giant garter snake upland habitat. In accordance with the Service's Giant Garter Snake Replacement and Restoration Guidelines, areas temporarily disturbed will be restored similar to that of adjacent or nearby habitats.

b. Prior to ground breaking, the Corps will establish a conservation area in perpetuity as habitat for the giant garter snake through a Service-approved conservation easement, Service-approved management plan, and an endowment fund of sufficient size to manage the conservation area in perpetuity.

c. Movement of heavy equipment to and from the project site shall be restricted to established roadways and haul routes to minimize habitat disturbance.

d. After completion of construction activities, any temporary fill and construction debris shall be removed and disturbed areas shall be restored to preproject conditions.

e. Confine clearing to the minimal area necessary to facilitate construction activities. Flag and designate avoided giant garter snake habitat within or adjacent to the project area as Environmentally Sensitive Areas. This area should be avoided by all construction personnel.

f. Prior to ground breaking, a Service-approved conservation easement will be placed on all open space preserve areas and all transitional open space within 100 feet of any avoided elderberry bush on the conservation area or areas. The easement(s) will include, but not be limited to, provisions and responsibilities of the permittee(s) for the protection of the vernal pool fairy shrimp, vernal pool tadpole shrimp, beetle, and giant garter snake including any future transfers of the easement or fee interest that may be anticipated.

The conservation easement will specify the purposes for which it is established (i.e., to maintain in perpetuity habitat for the vernal pool fairy shrimp, vernal pool tadpole shrimp, beetle, and the giant garter snake). The document will include a list of prohibited activities that are inconsistent with the maintenance of the preserves and the suitability of the remaining riparian habitats and associated wildlife corridors, including, but not limited to:

1. leveling, grading, or otherwise altering the existing topography, including the exploration for, or development of mineral extraction within the preserves;

2. landscaping, plowing, grazing, keeping domesticated livestock, or cultivation of the preserves;

3. activities that interfere with the natural hydrology of the preserves, including irrigation, excessive pumping of groundwater, manipulation or blockage of natural drainages, or placement of storm water drains within the preserves;

4. carrying out activities that may degrade water quality within the preserves and the watershed, including but not limited to: use of herbicides, pesticides, or rodenticides, or weed abatement activities within the preserve, and failure to adequately treat water entering the preserve from outside sources, such as roads and housing lots;

5. discharging, dumping, disposing, storing, placing or burning of any trash, refuse, rubbish, grass clippings, cuttings, debris, wastes, dredged or fill materials, lawn furniture, or recreational vehicles, within the preserves;

6. placement of any structures within the preserves;

7. building of any roads within the preserves;

8. operating, riding, or using off-road or motorized vehicles within the preserves;

9. killing, removal, alteration, or replacement of existing trees, shrubs, or other native vegetation within the preserves, or planting of non-native vegetation within or adjacent to the preserves;

10. direction of lighting into the preserves;

11. incompatible fire protection activities; and

12. any and all uses which may adversely affect the preserves.

After the conservation easement has been approved by the Service, a true copy of the recorded conservation easement shall be submitted to the Service within 30 days of its recordation.

g. The Corps shall ensure compliance with the Reporting Requirements below and the Corps must provide the Service with annual reports to describe the progress of implementation of all commitments in the Conservation Measures and Terms and Conditions sections of this biological opinion. The first report is due January 31, the first year after groundbreaking, and annually thereafter until the ten year monitoring period has been completed.

Reporting Requirements

The Sacramento Fish and Wildlife Office is to be notified within three working days of the finding of any dead listed wildlife species or any unanticipated harm to the species addressed in this biological opinion. The Service contact person for this is the Chief, Endangered Species Division at (916) 414-6620.

The Corps must report to the Service immediately any information about take or suspected take of listed wildlife species not authorized in this opinion. The Corps must notify the Service within 24 hours of receiving such information. Notification must include the date, time, and location of the incident or the finding of a dead or injured animal. The Service contact is the Service's Law Enforcement Division at (916) 414-6660.

Any contractor or employee who during routine operations and maintenance activities inadvertently kills or injures a listed wildlife species must immediately report the incident to their representative. This representative must contact the California Department of Fish and Game immediately in the case of a dead or injured. The California Department of Fish and Game contact for immediate assistance is State Dispatch (916) 445-0045.

The U.S. Fish and Wildlife Service Regional Office in Portland, Oregon, must be notified immediately if any dead or sick listed wildlife species is found in or adjacent to pesticide-treated areas. Cause of death or illness, if known also should be conveyed to this office. The appropriate contact is Richard Hill (503) 231-6241.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities that can be implemented to further the purposes of the Act, such as preservation of endangered species habitat, implementation of recovery actions, or development of information and data bases.

1. The Corps should work with the Service to address significant, unavoidable environmental impacts approved by local agencies.

2. The Corps should assist the Service in the implementation of recovery efforts for the vernal pool fairy shrimp, vernal pool tadpole shrimp, beetle, and the giant garter snake.

3. The Corps should work with the Service to develop additional construction related effect studies on threatened and endangered species.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

REINITIATION–CLOSING STATEMENT

This concludes formal consultation on the South Sacramento County Streams Project. As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat designated that may be affected by the action; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

If you have any questions regarding this biological opinion on the South Sacramento County Streams project, please contact Justin Ly of my staff at the letterhead address or at 916/414-6645.

Sincerely,

Cay C. Goude

Cay C. Goude
Acting Field Supervisor

cc:
ARD (ES), Portland, OR
Corps of Engineers, Sacramento District, CA (attn: Jane Rinck)
California Department of Fish and Game, Region II, Rancho Cordova, CA
SAFCA, Sacramento, CA

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Appendix 1: Summary of Effects and required compensation for the proposed SSCI project.

Shrub	Stem Size Class			Location	Exit Holes	Conservation Requirements	
	1"-3"	>3-5"	>5"			Elderberry Seedlings	Native Plants
Camry-1	3	1	0	Upland	No	Avoided-0	Avoided-0
Camry-2	6	0	0	Upland	No	Avoided-0	Avoided-0
Camry-3	0	0	0	Upland	No	Avoided-0	Avoided-0
V3-1*	3	1	0	Upland	No	5	5
V3-2*	6	0	0	Upland	No	6	6
V3-3	0	0	0	Upland	No	0	0
T-1	3	0	0	Upland	No	3	3
T-2	0	0	0	Upland	No	0	0
T-3***	6	1	0	Upland	No	4	4
T-4	1	0	0	Upland	No	1	1
T-5	1	0	0	Upland	No	1	1
T-6	0	1	0	Upland	No	2	2
F-1	3	0	0	Upland	No	3	3
V10-1***	2	0	0	Riparian	No	2	2
V10-2***	1	0	0	Riparian	No	1	1
V10-3	2	1	0	Riparian	No	7	7
V10-4	5	0	1	Riparian	Yes	28	56
V10-5	0	0	0	Riparian	No	0	0
V10-6	0	0	1	Riparian	No	4	4
V10-7***	1	1	0	Riparian	No	2.5	2.5
V10-8	0	0	0	Riparian	No	0	0
V10-9	2	0	0	Riparian	No	4	4
V10-10	1	0	0	Riparian	No	2	2
V10-11***	2	0	0	Riparian	No	2	2
V10-12***	1	0	0	Riparian	No	1	1
V10-13	2	0	0	Riparian	No	4	4
V10-14***	4	0	0	Riparian	No	4	4
V10-15	1	0	0	Riparian	No	2	2
V10-16***	1	0	0	Riparian	No	1	1
V10-17***	2	1	0	Upland	Yes	4	8

V10-18***	2	0	1	Upland	No	2.5	2.5
V10-19***	0	0	1	Upland	Yes	3	6
V10-20***	0	1	0	Upland	No	1	1
V10-21***	1	1	0	Upland	No	1.5	1.5
V10-22***	0	0	0	Upland	No	0	0
V10-23	1	0	0	Upland	No	1	1
V10-24***	1	0	1	Upland	No	2	2
V10-25	0	0	1	Upland	No	3	3
V10-26***	0	1	0	Upland	Yes	2	4
V10-27***	2	1	0	Upland	Yes	4	8
V10-28***	0	0	1	Upland	No	1.5	1.5
V10-29***	0	0	1	Upland	No	1.5	2.5
V10-30***	1	1	0	Upland	Yes	3	6
V10-31***	0	0	1	Upland	No	1.5	1.5
V10-32***	2	0	1	Upland	No	2.5	2.5
V10-33***	6	0	0	Upland	No	3	3
V10-34***	2	2	0	Upland	Yes	6	12
V10-35***	3	0	1	Upland	Yes	6	12
V10-36***	3	0	1	Upland	No	3	3
V10-37***	0	0	1	Upland	No	1.5	1.5
V10-38***	1	0	0	Upland	No	0.5	0.5
V10-39	1	0	0	Upland	No	1	1
W-1*	3	1	0	Riparian	No	9	9
W-2*	1	0	0	Riparian	No	2	2
W-3*	0	0	0	Dead	Dead	0	0
W-4*	0	0	1	Riparian	No	4	4
W-5	2	0	0	Riparian	No	4	4
W-6	2	0	0	Riparian	No	4	4
V29-1	1	0	0	Upland	No	1	1
V29-2	2	0	0	Upland	No	2	2
V29-3	1	0	0	Upland	No	1	1
V31-1	2	0	0	Upland	No	2	2
V31-2	1	0	0	Upland	No	1	1
V31-3	0	0	1	Upland	No	3	3

V31-4***	4	0	0	Upland	No	4	4
V31-5***	1	1	0	Upland	No	3	3
V33-1***	2	0	0	Upland	No	2	2
V33-2***	0	0	0	Upland	No	0	0
V33-3***	0	1	0	Upland	No	2	2
V33-4***	0	1	0	Upland	No	2	2
V33-5***	4	1	0	Upland	No	6	6
NL-1*	1	0	0	Upland	No	1	1
Total	112	19	15	na	na	197.5**(198)	254.5**(255)

*Elderberry plants that will be transplanted.
**Fractional numbers were rounded up.
***Service Guidelines were halved.

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:
1-1-04-F-0349

NOV 15 2004

Mr. Mark C. Charleton
Chief, Planning Division
Department of the Army
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814

Subject: Amendment to the Formal Section 7 Consultation for the South Sacramento County Streams Project (Service File No. 1-1-01-F-0043), Sacramento County, California

Dear Mr. Charlton:

This letter is in response to your request for amendment to the April 15, 2002, biological opinion Formal Section 7 Consultation for the South Sacramento County Streams Project, Sacramento County, California (Service File No. 1-1-01-F-0043) on the proposed South Sacramento County Streams Project (amendment project). At issue are the effects of the proposed amendment on the federally threatened giant garter snake (*Thamnophis gigas*) (snake). This amendment is issued in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act). This amendment is based on: (1) a September 22, 2004, letter from the Army Corps of Engineers (Corps), describing changes to the proposed project description originally described in the April 15, 2002, biological opinion; (2) our April 15, 2002, biological opinion; (3) the Corps' *Draft Environmental Assessment for the South Sacramento County Streams Project Design Refinements* dated September 2004; (4) an October 20, 2004, site visit by Service representatives; and (5) other information available to the Service.

The Corps proposes design refinement to the *Sacramento County Streams Investigation, California, Environmental Impact Statement/ Environmental Impact Report* (EIS/EIR) dated March 1998. The design refinements include: (1) deepen and/or widen existing channels to increase channel capacity; (2) retrofit bridges to ensure unimpeded passage of flows; (3) construct drop structures in channels to avoid potential erosion; and (4) construct box culverts to increase flow area and decrease head loss. These refinements are meant to ensure that the

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authorized project provides sufficient channel capacity (desired level of flood protection) in the south Sacramento area.

The April 15, 2002, biological opinion is now amended to read:

Page 3, Description of the Proposed Action: **Add:**

"Proposed Design Refinement Measures for the Project"

Channel excavation will involve deepening and/or widening the existing channel to increase the volume of the channel. Equipment and materials will travel or be transported on local roadways to the construction sites. Existing ramps would be used to access the channel, when possible, or temporary ramps will be constructed, if needed. Existing service roads will be used, if available. The staging areas will be within the channels.

Channel excavation will be conducted using in-channel construction methods. First, the channel will be dewatered by installing temporary cofferdams and diverting streamflow around the section to be excavated. Since most of the creek channels have concrete low-flow channels at the bottom, channel deepening will require removal of the existing concrete low-flow channel. Old concrete will be ripped up and disposed at an approved waste site. The total volume of concrete to be removed is approximately 10,000 cubic yards.

Vegetation on the channel banks and bottom will then be cleared and transported to the nearest dump or landfill for disposal. Excavated soil from Morrison, Elder, and Florin Creeks will be transported to and spread on the Regional Sanitation District area west of Morrison Creek. Excavated material from Unionhouse Creek will be placed on the adjacent vacant area along the creek for use by the Sacramento Regional Transit District. The total volume of cleared vegetation and soil to be excavated and removed is approximately 250,000 cubic yards. Of that volume, 89,500 cubic yards will come from Unionhouse Creek.

The concrete low-flow channel will be reconstructed after excavation, floodwall construction, and other design measures are completed in each section. The concrete lining will be reconstructed at its original width, leaving portions of the channel bottoms unlined. The concrete will be allowed the appropriated amount of time to cure. As construction is completed in a stream section, equipment will be removed from the staging area. The cofferdam will be removed and streamflow will be diverted back into the stream channel, as design specifications and water quality restriction require.

Bridge retrofitting involves modifying a bridge's structure to ensure unimpeded passage of flows under the bridge. Prior to the refined design, proposed bridge modifications included concrete aprons, new parapet walls, in-fill walls, and plugging of deck drains. In addition, a stop-log structure will be installed at the Union Pacific Railroad (UPRR) bridges. Based on the lowered streambeds in the refined design, foundation

modifications to several of the bridges would also be necessary. All the bridges have concrete channels under them. Once the concrete channel is removed, selected foundation piers will be excavated, and the spread footing will be removed. A new spread footing at the correct elevation will be constructed using reinforced concrete. Temporary shoring will be used to support the affected portion of the bridge during this work. This work will be necessary at 11 bridges.

Drop structures, or weirs, will be constructed in channels where required to avoid potential erosion due to grade breaks. Grade brakes are anticipated at the upstream end of the project reaches where the excavated channel will merge with the existing channel. Typical construction of drop structures/weirs includes a 15-foot concrete apron upstream of the drop structure to prevent channel scouring and resultant sediment buildup at the drop structure. The refined design calls for 11 drop structures within the project channel reaches. As with channel excavation, drop structures will be constructed while cofferdams are in place and streamflow is diverted around the construction area.

Box culverts will be constructed across the Florin Creek culvert crossings at Center Parkway, Persimmon Avenue, and Orange Drive to increase the effective flow area and reduce the head loss. The new box culverts would either be constructed by jacking and coring concrete box culverts under the road way, or by traditional open cut construction using precast concrete box culverts. Construction of box culverts at each site is expected to take 6 to 8 weeks. Because this work will be in three separate locations, the work will can be done concurrently.

Floodwall/sheetpile construction will be the same as described in the 1998 EIS/EIR. In general, floodwall construction will be staged in the channel as described for channel excavation. Cranes will be used to lift material and equipment to wall locations on the tops of the levees or banks.

Design Refinements by Steam Reach

Morrison Creek

Average floodwall heights along Morrison Creek will be between 1.3-3.0 feet above the existing levee/bank height as a result of the design refinements. There are several isolated locations where the floodwall heights are as high as 7 feet. However, these short stretches are typically leading into bridge crossings where floodwall heights would match the heights of the bridges.

Channel Excavation

The channel excavations will be contained within the lateral limits of the existing channel. The depth of the excavation varies from 0-3.0 feet. Channel side slopes would be excavated to a minimum ration of 1 vertical:2 horizontal (1V:2H) in earthen sections. Existing side slopes that exceed this ratio will not be excavated.

Bridge Retrofitting
A concrete apron is proposed under all bridges (but not culverts) and therefore is not listed under the proposed refinements below.

UPRR Bridge: install stop logs at both ends of bridge.

Mack Road Bridge: none required.

Brookfield Drive Bridge: construct in-fill walls; seal existing parapet joints.

G Parkway Bridge: construct new, continuous spread footings integral with the seven piles in each pier.

Franklin Boulevard Bridge: construct new parapets on both sides of bridge; construct in-fill walls; seal parapet joints.

Center Parkway Bridge: construct new, standard height parapets on both sides of bridge; construct in-fill walls; plug deck drains; construct new spread footing at each pile; seal parapet joints.

Florin Road Bridge: construct new parapets on both sides of bridge; construct in-fill walls; plug deck drains; seal parapet joints.

State Route 99 Bridges: extend existing pier walls and construct new, lower, continuous spread footings.

Sky Parkway Pedestrian Bridge: construct new parapets on both sides of bridge; extend concrete pier wall and construct new, lower pier wall footing; seal parapet joints.

Steiner Drive Bridge: construct new standard height parapet on upstream side of bridge; construct in-fill walls; plug deck drains; remove existing spread footings, extend columns, and construct new, lower spread footing at each pile; seal upstream parapet joints.

53rd Street/ Riza Avenue Pedestrian Bridge: extend concrete pier wall and construct new, lower pier wall footing.

Stockton Boulevard Bridge: construct new standard height parapet on both sides of bridge; construct in-fill walls; plug deck drains; remove existing spread footings, extend columns, and construct new, lower, continuous spread footing connecting all 11 columns at each pier; seal parapet joints.

Drop Structures
There are two drop structures designed for the main channel of Morrison Creek: one upstream of Stockton Boulevard and one downstream of Stockton Boulevard. In additions, three drop structures will be constructed in the three unnamed tributaries to Morrison Creek.

Extend floodwalls up tributaries of Morrison Creek
The project improvements could potentially be outflanked by upstream floodflows along three minor tributaries to Morrison Creek. In order to avoid these outflanking, floodwalls will be extended up the tributaries at an elevation equal to that of the potential floodwalls on Morrison Creek at the confluence.

Elder Creek
Floodwall heights along Elder Creek will be constructed up to 5.1 feet above the existing levee/bank height as a result of the design refinements. This maximum wall height is approximately 1 foot higher than the original design. The existing levee between Morrison Creek and Franklin Boulevard will be raised as described in the original design.

Channel Excavation
Channel depth excavation on Elder Creek will lower the channel profile about 1.5 feet. Channel excavation will not exceed the existing top width of the channel. Side slopes will be excavated at a ratio of at least 1V:2H. Bottom widths of the channel may vary from 15-25 feet.

Bridge Retrofitting
A concrete apron is proposed under all bridges (but not culverts) and therefore is not listed under the proposed refinements below.

Franklin Boulevard Bridge: none required.

Tangerine Avenue Bridge: construct in-fill walls; plug deck drains; seal existing parapet joints.

Center Parkway Bridge Southbound: construct in-fill walls; plug deck drains; seal existing parapet joints.

Center Parkway Bridge Northbound: construct in-fill walls.

LaMancha Avenue Bridge: construct new standard height parapet on both sides of bridge; construct in-fill walls; plug deck drains; remove existing spread footings, extend columns and construct new, lower spread footing at all four columns at each of the three piers; seal parapet joints.

State Route 99 Bridges: construct in-fill walls; plug deck drains; remove existing spread footings, extend columns, and construct new, lower, continuous spread footing at ten columns at each of three piers.

Drop Structures
One drop structure downstream of Highway 99 will be constructed in Elder Creek.

Florin Creek
Floodwall heights along Florin Creek will be constructed up to 5.6 feet above the existing levee/bank height as a result of the design refinements. This is approximately 1 foot lower that the original design. Also, whereas the original design specified floodwalls between Highway 99 and Stockton Boulevard, the refined design indicates that floodwalls will not be needed on this stretch of Florin Creek. Hydraulic analysis indicated that while overbank flow can still occur in this reach for the 100-year event, the available information indicates that flood damages should be minimal. The affected area comprises agricultural/fallow land and the open space areas of a park, neither of which will be significantly damaged by flooding. Also, constructing floodwalls upstream of Highway 99 on Florin Creek will affect the existing drainage patterns (local drainage) since this reach does not currently have levees/floodwalls.

The existing levees on Florin Creek between Elder Creek and Franklin Boulevard will be raised as described in the original design.

Channel Excavation
Channel excavation on Florin Creek is proposed from the confluence at Elder creek to the downstream side of Orange Drive. Sensitivity studies showed that there was little to not benefit to channel excavation upstream of Orange Drive. The reach between Orange Drive and Stockton Boulevard is a fairly short reach, approximately 650 feet. Various channel widening alternatives were modeled in this reach with little to no change in the water-surface elevation. The design on the remaining reaches on Florin Creek will be refined through channel excavation as follows:

From the *confluence at Elder Creek to Franklin Boulevard*, the bottom width of the channel will be cut to 10 feet wide. Side slopes will be at 1H:2V ratio. The channel bottom will be excavated approximately 2 feet. Top width of the channel would be extended on additional 15-20 feet beyond the existing left (south or east) bank.

From *Franklin Boulevard to River Station 3479*, existing development encroachment on the immediate overbank areas has restricted any bank modifications. Therefore, the current channel top width would remain unchanged. The bottom width will be 5 feet with approximately 0.5 foot excavated from the channel depth. Existing channel side slopes will be maintained.

The *River Station 3479 to Persimmon Avenue*, the creek right-of-way increases on the right bank. The bottom width of the channel will be increased in this area with ranges from 15-25 feet. Top width of the channel will be increased approximately 20 feet toward the right (north) bank. Bottom depth excavation will be approximately 1 foot.

From *Persimmon Avenue to Orange Drive*, there is a section of existing bike trail on the right bank of the creek. This section of trail, which is paved and extends for approximately 2,800 feet, would be used to increase the top width of the channel an additional 10 feet. The bike trail will be reconstructed as an integral part of the new channel. Bottom depth excavation will be up to 1 foot. Bottom width would be increased 20 feet up to Highway 99 and 25 feet from Highway 99 to Orange Drive.

Bridge Retrofitting

A concrete apron is proposed under all bridges (but not culverts) and therefore is not listed under the proposed refinements below.

Franklin Boulevard Bridge: convert existing south abutment to a pier using the existing piles and pile cap; construct a new south abutment approximately 12 feet to the south of the existing abutment on CIDH concrete or driven piles; construct new 12-foot reinforced concrete slab span; seal parapet joints. Alternatively, the addition of a concrete box culvert at the south end of the span is also being considered in lieu of constructing a new 12-foot span on the bridge.

Brookfield Drive Bridge: construct new standard height parapet on both sides of bridge; plug deck drains; construct in-fill walls; seal parapet joints.

Center Parkway Culvert: construct new parapet on both sides of bridge; construct two new box culvert cells 5.5 feet wide by 7.0 feet tall on the right side of and lower than existing cells; seal parapet joints.

Persimmon Drive Culvert: construct new parapet on both sides of bridge; construct one new box culvert cell 8 feet wide by 6 feet tall on the right side of and lower than existing cells; seal parapet joints.

State Route 99 Culvert: none required.

Orange Avenue Culvert: construct new standard height parapet on both sides of bridge; construct two new box culvert cells 7.8 feet wide by 5.5 feet tall, one on each side of existing cells; seal parapet joints.

Stockton Boulevard Bridge: none required.

Additional Box Culverts at Road Crossings
To increase the effectiveness of hydraulic flow at the culvert crossings at Center Parkway, Persimmon Avenue, and Orange Drive, additional box culverts are proposed. At Center Parkway, two 5.5 foot by 7 foot box culverts will be added to the right of the existing culvers. At Persimmon Avenue, one 8 foot by 6 foot box culvert will be added to the right of the existing culverts. At Orange Drive, two additional 7.8 feet by 5.5 feet box culverts will be added, one on each side of the existing culverts.

Drop Structures
Florin Creek design refinements call for four drop structures; that is, one each at Franklin Boulevard, Center Parkway, Highway 99, and Orange Avenue.

Unionhouse Creek
The refined design for Unionhouse Creek in general reflects the original design. No refinements are proposed to increase the floodwalls from the height in the original design. Unionhouse Creek will overflow into the Bufferlands due to the proposed removal of the left bank levee from Morrison Creek to approximately 200 feet downstream of Franklin Boulevard.

Channel Excavation
Between Morrison Creek and Franklin Boulevard, the bottom width of the channel will be increased to 14 feet, and the channel depth will be excavated an additional 1-2 feet. The south levee will be removed or breached up to UPRR. This will increase the top width of the channel in this section by approximately an additional 100 feet to the south, into Sacramento Regional Wastewater Treatment Plant's Bufferlands. Removal or breaching of the levee will allow for increased channel capacity by restoring the creek's connection to its floodplain. The Bufferlands buffer the surrounding residences and businesses from the activities of the treatment plant. The Bufferlands total approximately 2,600 acres and are actively managed for open space, flood plain, agriculture, and wildlife habitat. The Bufferlands are also contiguous with the northern most part of the Stone Lakes National Refuge system.

From *Franklin Boulevard to Center Parkway*, the channel depth will be excavated approximately 2 feet. The bottom width of the channel will be increased to 14 feet, and the channel top width will be increased an additional 10-15 feet toward the left (south) bank to accommodate the bottom width increase.

The new top width of the flow area of *Unionhouse Creek* will be limited to 78 feet to accommodate proposed improvements for light rail and Cosumnes River Boulevard between Franklin Boulevard and Center Parkway. Conceptual cross sections for this reach were determined with input from all involved agencies.

Bridge Retrofitting
There is no bridge retrofitting needed on the UPRR Bridge and Franklin Boulevard Bridge. Center Parkway Bridge will be retrofitted with in-fill walls and new, lower spread footings at each pile.

Drop Structures
There will be one drop structure constructed downstream of the Center Parkway Bridge on Unionhouse Creek.

Construction Details
Staging areas for equipment and materials will be located primarily within the channels. The location of the staging areas will depend on the channel segment being dewatered and excavated. In addition, part of the Franklin and Boyce stormwater detention basin to be constructed by the City will be used for staging and as a borrow site for the Corps project.

Several disposal sites will be used depending on the type of material. Old concrete from the low-flow channels would be disposed at an approved waste site authorized to accept concrete waste. Cleared vegetation from the channels will be transported to the nearest dump or landfill for disposal. Excavated soil from the Morrison, Elder, and Florin Creek channels will be transported to the Regional Sanitation district west of Morrison Creek and spread at Borrow Site #2. Excavated material from Unionhouse Creek will be placed on the vacant area adjacent to the creek between Franklin Boulevard and Center Parkway. This vacant area is approximately 5,700 feet long by 50 feet wide, covering an area of approximately 6.6 acres.

Access Routes along the main channels will be the same as identified in the 1998 EIS/EIR. Access to the three unnamed Morrison Creek tributaries will be along existing maintenance roads on the top banks of the tributaries.

Construction of the entire project is estimated to take approximately 5 years. Construction of the North Beach Lake levee between the Sacramento River and the UPRR is expected to begin in May 2005. Construction of the project features upstream of the UPRR, which include the design refinements, would begin in 2006. It is anticipated that construction will be carried out on one steam reach per year."

Page 5-7; Description of the Proposed Action; Flood Control Work: **Replace** the section beginning with "Area 3 - Between Morrison and State Route 99" and ending on page 7 with "…this area of the creek" with the following:

"*Morrison Creek.* The predominant flood control measure along Morrison creek would be floodwalls or sheetpile walls on both levees and on the channel banks of incised channels. Along the east bank of Morrison Creek from Unionhouse Creek to the UPRR

bridge, seepage and weakening of the railroad embankment would be corrected by constructing a floodwall or sheetpile wall 300 feet long on the waterside of the embankment. The top of the wall would be a maximum of about 1.6 feet above the top of the levee. Channel excavation will be a maximum of 1.1 feet deep. Construction would be done using the in-channel methods described for Area 1.

Farther up the east bank of Morrison Creek levee from UPRR bridge to Franklin Boulevard, there is an existing levee at an elevation of 19 feet. A floodwall or sheetpile wall 8,600 feet long would be placed along the waterside edge of the service road to strengthen the levee. The top of the wall would be about 3.0 feet above the existing top of the levee, and the width of the road would remain at 12 feet. Channel excavation will be about 1.1-2.0 feet in depth. In-channel construction methods would be used as described for, Area 1.

The channel of Morrison Creek is incised from Franklin Boulevard to State Route 99. In this area, there would be floodwalls or sheetpile walls sunk into streambanks for about 4,000 feet. The walls would be placed inside the fence line that marks the existing channel right of way. The height of the wall would extend 5.8 feet above the top of the channel bank. To reduce the risk of wall failure the wall would be placed at a depth of about 10 feet. Channel excavation will be about 2.6-3.3 feet in depth and one drop structure will be installed. In-channel construction methods would be used as described for Area 1.

The bridges on Morrison Creek are affected by pressure flow when backwater extends up the creek from Beach-Stone Lakes. To prevent water from leaving the channel under pressure flow, the Brookfield Drive, G parkway, Franklin Boulevard, Center Parkway, and Florin Road bridges would be retrofitted with concrete infill walls, concrete aprons, parapet walls, and drains.

Elder Creek. The predominant flood control measure on this creek would be floodwalls or sheetpile walls. In the leveed areas, from the confluence with Morrison Creek to Franklin Boulevard, about 2,500 feet of floodwall or sheetpile walls would be placed on both sides of the channel on the waterside edge of the service road on top of the levee. The top of the wall would be at a maximum 4.8 feet above the top of the existing levee height. Channel excavation will be a maximum of 1.9 feet in depth.

At the incised portion of Elder Creek, from Franklin Boulevard to State Route 99, about 3,836 feet would be improved with floodwalls or sheetpile walls. The floodwall or sheetpile wall would be placed in the channel bank inside the fence line that marks the existing channel right of way. The height of the walls would have a maximum height of 5.1 feet above the top of the channel bank. A total of 6,336 feet of floodwalls or sheetpiles would be constructed on Elder Creek. Channel excavation will be approximately 1.2-1.6 feet depth. In-channel construction methods would be used as described for Area 1. The following bridges on Elder Creek would be retrofitted with

concrete infill walls, concrete aprons, parapet walls, and drains: Franklin Boulevard, Tangerine Avenue, and Center Parkway.

Florin Creek. On this creek, the predominant flood control measure would be floodwalls or sheetpile walls. Florin Creek is an incised channel. About 7,392 feet of improvements would be constructed on both banks, from the confluence of Elder Creek, to State Route 99. The floodwall or sheetpile wall would be placed in the channel bank inside the fence line that marks the existing channel right of way. The height of the walls would be about 0.2 to 5.6 feet above the top of the channel bank. Channel excavation will be approximately 0.5-2.9 feet in depth and 10-60 feet in width. One drop structure will be installed and three box culverts. In channel construction methods would be used as described for Area 1. Two bridges would be retrofitted on Florin Creek with concrete infill walls, concrete aprons, parapet walls, and drains. These bridges are located on Brookfield Drive and Persimmon Avenue. The State Route 99 bridge would be retrofitted with parapet walls.

Unionhouse Creek. On Unionhouse Creek, the predominant flood control measure would be floodwalls or sheetpile walls. About 4,725 feet of the north levee below Franklin Boulevard would be improved with floodwalls or sheetpile walls that would be placed along the waterside edge of the service road to strengthen the levee. The top of the wall would be about 0-2.9 feet above the existing top of the levee. About 5,280 feet of the parkway would be improved on both banks with sheetpile walls. The walls would be placed inside the fence line that marks the existing channel right of way. The height of the walls would be about 2-2.5 feet above the top of the channel bank. In-channel construction methods would be used as described for Area 1. The Franklin Boulevard and Center Parkway bridges would be retrofitted with parapet walls to pass water more efficiently under the bridges during pressure flow conditions.

Area 4- Between State Route 99 and Stockton Boulevard

Morrison Creek. This reach of Morrison Creek is an incised channel, and flood control measures would consist of floodwalls or sheetpile walls on portions of both sides of the channel between State Route 99 and Stockton Boulevard. Where the top of the bank is low, a total of 7,000 linear feet of sheetpile wall would be constructed. The wall would be placed inside the fence line that marks the existing channel right of way and the construction would be done from inside the channel as described for Area 1. The wall heights would be about 0.4-6.7 feet above the top of the channel bank. Channel excavation will be about 2.5-3.3 feet in depth and 3 drop structures will be installed. The Sky Footbridge and Riza Footbridge would be retrofitted with concrete infill walls and concrete aprons. Steiner Drive and Stockton Boulevard bridges would be retrofitted with concrete infill walls, concrete aprons, parapet walls, and drains.

Florin Creek. This reach of Florin Creek is an incised channel, and flood control measures would consist of sheetpile walls on both sides of the channel for a total of 7,000 linear feet. The wall would be placed inside the fence line that marks the existing channel right of way, and the construction would be done from inside the channel as described for Area 1. The wall heights would be about 5.5 feet above the top of the channel bank. Channel excavation will be a maximum of 2.4 feet in depth and 30-40 feet increase in top width. One drop structure will be installed. No bridges would be retrofitted in this area of the creek."

Page 9, Corps' Proposed Conservation Measures; Activities Along the Haul Road; #2: **Replace:**
"2. Within the project reach of Frontage Road/ east of Interstate 5 surveying and staking of the site would be permitted for the month of May. However, vehicle traffic would be restricted within the 100-foot buffer of the shrubs, to 5-10 vehicles per day during that time period. Additionally, within the 100-foot buffer surveying and staking would be done by hand and no large equipment will be used on the site until hauling activities commence. Hauling activities within this reach and occurring within the 100-foot buffer of the shrubs would begin no earlier that June 1, provided that no exit holes or beetles were present during preconstruction surveys. If beetles or exit holes are observed then all activities within the 100-foot buffer of the shrub will cease until June 15."

Page 12, paragraph 2: **Add:**
"Due to the South Sacramento County Streams Project Design Refinements an additional loss permanent loss of 0.06 acres upland giant garter snake habitat will be compensated for through the purchase of credits at a USFWS-approved mitigation bank at a ration of 3:1."

Page 28, Effects of the Proposed Action: **Add:**
"Construction of the proposed concrete aprons upstream of 8 of the 11 drop structures will be considered a permanent loss of giant garter snake habitat. The 15 foot-wide aprons will extend up both slopes of the trapezoidal channel to prevent channel scouring. The drop structures will be installed in locations where there is currently a concrete low-flow channel; therefore, only the areas newly lined with concrete outside of the low-flow channel are considered permanent loss of habitat. The three drop structures in the unnamed tributaries to Morrison Creek would not have permanent habitat loss associated with them because these channels are currently concrete lined. The area affected at each structure is indicated in Table 1.

The proposed design refinements associated with widening channels, modifying additional tributaries, and disposing of excavated material will affect additional nonnative annual grasslands, urban landscapes, and associated wildlife within the project area, which results in an increase of 2.87 acres of temporary loss of habitat to giant garter snake."

Table 1. Area of Permanent Loss of Giant Garter Snake Habitat

Creek	Drop Structure	Concrete Apron (square feet)	Less Existing Low-Flow Channel (square feet)	Area of Permanent Snake Habitat Loss (square feet)
Morrison	Stockton Blvd.	718	180	538
Morrison	Upstream of Stockton Blvd.	497	180	317
Florin	Franklin Blvd.	302	180	122
Florin	Center Pkwy.	572	180	392
Florin	State Rte. 99	497	180	317
Florin	Orange Ave.	448	180	268
Elder	State Rte. 99	718	180	538
Unionhouse	Center Pkwy.	329	180	149
			Total (square feet)	2,641
			Total (acres)	0.06

Page 33, Amount or Extent of Take, Giant Garter Snake: **Replace** the number "9.8 acres" with "9.86 acres."

Page 37, Terms and Conditions, The following terms and conditions implement reasonable and prudent measure number four, **Add,** this section to the first (a) term and condition.

> To minimize and compensate for permanent loss of suitable snake habitat from the project design refinements, proposed in *Draft Environmental Assessment for the South Sacramento County Streams Project Design Refinements* dated September 2004, the Corps will acquire an additional 0.06 acres of giant garter snake aquatic habitat and 0.18 acres (at a 3:1 ratio) of giant garter snake upland habitat.

The Service has determined that the project amendment is not likely to result in jeopardy to giant garter snake. All other terms and conditions of the April 15, 2002, biological opinion (1-1-01-F-0043) and amendments on the proposed South Sacramento County Streams Project, Sacramento County, California, shall remain unchanged.

This concludes formal consultation on the proposed South Sacramento County Streams Project. As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded, or in this case, any incidental take occurs; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this review; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical

habitat that was not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, or in this case, any incidental take occurs, any and all operations causing such take must cease pending reinitiation and Service review.

If you have any questions regarding this response, please contact Stephanie Rickabaugh or the acting Sacramento Valley Branch Chief at (916) 414-6600.

Sincerely,

Cht Nagano

for Ken Sanchez
Acting Field Supervisor

cc:
AES, Portland, Oregon
Dan Artho, Corps of Engineers, Sacramento, California

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:
81420-2008-F-1649-R-001

30 September 2011

Alicia Kirchner
Chief, Planning Division
Corps of Engineers, Sacramento District
1325 J Street
Sacramento, California 95825-2922

Subject: Reinitiation of Formal Consultation on the South Sacramento County Streams Morrison Creek Union Pacific Railroad Project in Sacramento County, California (Service File No. 1-1-01-F-0043)

Dear Ms. Kirchner:

This letter is in response to your August 19, 2011, request to reinitiate formal consultation with the U.S. Fish and Wildlife Service (Service) on the proposed South Sacramento County Streams Morrison Creek Union Pacific Railroad project (proposed project) in Sacramento County, California. Your request was received by our office on August 22, 2011. At issue are the potential affects of the proposed project on the federally-listed as endangered vernal pool tadpole shrimp (*Lepidurus packardi*), the federally-listed as threatened vernal pool fairy shrimp (*Branchinecta* lynchi), (collectively, vernal pool crustaceans), and the federally-listed as threatened giant garter snake (*Thamnophis gigas*) (snake). The proposed project is not located within any designated or proposed critical habitat for any federally-listed species; therefore, no critical habitat will be affected. The construction of flood protection structures on the east side of the railroad tracks was not addressed in the original April 15, 2002, biological opinion (Service file 1-1-01-F-0043) for the proposed project. Therefore, the U.S. Army Corps of Engineers (Corps) is reinitiating consultation per the requirements of 50 CFR §402.16 (c). The Corps has completed construction of all other project related flood control improvements analyzed in the original biological opinion and compensation credits for impacts associated with the entire project on listed species have been purchased. This response is issued under the authority of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*).

This reinitiation is based on: (1) your August 19, 2011, letter requesting reinitiation of consultation and the attached project description for the proposed project; (2) a site visit conducted by Service and Corps staff on May 13, 2010; (3) telephone and electronic mail conversations between the Service and Corps staff; and (4) other information available to the Service.

The Corps has notified the Service of the new location of the proposed floodwall and of a change in effects on vernal pool crustaceans and the snake. Therefore, the biological opinion is now amended as follows:

Page 5: Change paragraph 1 in the project description for Area 3 – Between Morrison Creek and State Route 99 from:

Morrison Creek. The predominant flood control measure along Morrison Creek would be floodwalls or sheetpile walls on both levees and on the channel banks of incised channels. Along the east bank of Morrison Creek from Unionhouse to the UPRR bridge, seepage and weakening of the railroad embankment would be corrected by constructing a floodwall or sheetpile wall 3000 feet along the waterside of the embankment. The top of the wall would be
3.6 feet above the top of the levee. Construction would be done using the in-channel methods described for Area 1.

To:

Morrison Creek. The proposed action will consist of constructing approximately 3,000 linear feet of 3.5 to 4.5-foot high concrete reinforced floodwall, 900 feet of 4-foot high retaining wall, and constructing an additional 100 feet of levee along the east side of the Union Pacific Railroad (UPRR) tracks just inside the UPRR right of way (ROW). The total project impact area will be 5.6 acres. Two and a half acres will have a flood protection levee easement (FPLE), which will include 1.0 acre of permanent road easement (PRE), 2.5 acres will be a temporary work area easement (TWAE) adjacent to the FPLE, and another 0.6 acre will be a TWAE in the Sacramento Municipal Utility District (SMUD) lot adjacent to the project area.

All construction methods and scheduling will be determined by the construction contractor and approved by the Corps. The floodwall footprint will be cleared, grubbed, and excavated to a depth of 2 to 5 feet and a width of 15 to 20 feet to place slurry cement and construct the floodwall footing. The floodwall will be constructed in sections. A 100 foot section of levee will be constructed at the south end of the project site to accommodate the existing SMUD gas line within the limited space available. It will be necessary to protect the existing sound wall and utilities during construction in compliance with the City of Sacramento and utility owners. In addition, all construction activities will comply with the City ordinances for sound and vibration restrictions.

Page 5: Insert the following text after the changes to the project description for Area 3 – Between Morrison Creek and State Route 99 described above:

General Minimization Measures

Construction Workers, Equipment, and Schedule

An estimated 31 construction workers will be onsite each day during construction. The workers will be encouraged to park in nearby public parking areas and carpool to the project site by entering the neighborhood east of the project site from Franklin Boulevard. Carpool vehicles will be parked in the SMUD staging area at the northeast end of the project area, and in the adjacent neighborhood.

Construction vehicles necessary for the project will include: two excavators, two loaders, two graders, two dozers, two rollers, two water trucks, one maintenance truck, and six 0.75-ton pickup trucks. A generator will also be required for construction.

Construction hours will be limited to 7 a.m. to 6 p.m. Monday through Saturday, and 9 a.m. to 6 p.m. on Sunday. The project will take approximately four months to complete. It is anticipated that the project will commence in the spring of 2012, with all construction completed by October 1, 2012.

Access and Staging

The 0.6 acre SMUD staging area, located on Deertree Court, will be used as the main staging area. A second 2.5 acre staging area will be located west of the project footprint, within the TWAE. The SMUD staging area will be used for storage of the construction trailers, equipment storage, vehicle parking, and access to the project site. The staging area along the west side of the project footprint will primarily be used for stockpiling and equipment storage.

A ramp will be constructed at the southwest end of the SMUD lot to create access for haul trucks between the SMUD lot and the levee crown. The haul trucks will deliver and load all material traveling north to south along the project footprint.

Site Preparation

Prior to construction, all construction and staging areas will be fenced off with cyclone fencing to limit public access. The existing ground will be cleared and grubbed of all grass cover to a depth of approximately six inches. The contractor will be required to prepare a Storm Water Pollution Prevention Plan identifying specific best management practices to avoid or minimize soil erosion. All suitable excavated soil material will be reused in the project area to the extent feasible. Excavated material from the project will be temporarily placed in the TWAE and will be disposed of at an appropriate waste site authorized to accept such waste.

Borrow and Disposal Sites

There are no borrow or disposal sites within the project area. The contractor will be required to import and export all soil to and from a licensed, permitted facility that meets all Federal and State standards and requirements. This will ensure that no contaminated material will be introduced into the site. Excavated material will be stockpiled onsite in the staging area adjacent to the project footprint to create a road with all remaining material exported to a licensed facility.

Restoration and Cleanup

The project site, levee roads, and staging areas will be topographically and photographically surveyed prior to construction to provide a baseline pre-project condition. Once construction is complete, the same areas will be re-surveyed to identify any construction related issues. All construction equipment and excess materials will be transported offsite. The access ramp constructed in the SMUD staging area will permanently remain for SMUD access upon project completion. The disturbed areas will be reseeded with a native grass seed mix to promote revegetation and minimize soil erosion. All staging areas, access ramps, and levee roads will also be restored to pre-project conditions. Any damage from construction will be repaired and all work areas will be restored to pre-project conditions.

Operation and Maintenance

After construction is complete, long-term responsibility for the project will be turned over to the Central Valley Flood Protection Board in conjunction with the Sacramento Area Flood Control Agency. This responsibility will include operation, maintenance, repair, rehabilitation, and replacement of all project features except environmental mitigation. The levee, floodwall, and access roads will be operated and maintained in accordance with current Corps criteria and Corps Operations and Maintenance Manual. Regular maintenance activities will include clearance of

maintenance roads, rodent control, vegetation maintenance, managing graffiti, and performing periodic inspections.

Page 9: Insert the following text after the 1st paragraph in the Corps' Proposed Conservation Measures Section

Morrison Creek Union Pacific Railroad Project

The Corps will implement the following additional conservation measures to reduce the potential impacts to the snake and vernal pool crustaceans.

- To reduce the likelihood of snakes entering these areas during construction activities, exclusion fencing will be installed during the active period for the snake (May 1 to October 1), be surveyed prior to ground breaking by a Service-approved biologist, and maintained throughout the duration of construction activities. The fencing will consist of 3- to 4-foot-tall erosion fencing buried at least 6 to 8 inches below ground level. No plastic monofilament fencing will be utilized.

- Before ground disturbance, all construction personnel will participate in a Service-approved worker environmental awareness program. A qualified biologist approved by the Service will inform all construction personnel about the life history of the snake and the importance of both aquatic and upland habitat areas.

- Open trenches will be covered overnight, or escape ramps for snakes will be created by excavating sloped-sides, installing ramps or providing another means of escape. Prior to construction activities each day, a qualified biological monitor will inspect the trenches to ensure the absence of any species. If a trapped snake is discovered, the animal will be allowed to escape, or a Service-approved biologist will assist in moving the snake.

- Personnel will inspect the project work area for wildlife before moving materials or equipment. In addition, crews will check for any species beneath all vehicles and within pipe segments that have been stationary for 30 minutes or more, prior to their movement.

- Only approved access routes will be utilized. A speed limit of 10 miles per hour will be observed on unpaved access routes, and crews will maintain awareness for wildlife in the roadway.

- Work crews will maintain a clean work area, including removal of all food trash from the site daily, to prevent attracting wildlife.

- Pets and firearms will not be allowed at the project site, including the staging area, work areas, or access roads.

- Vehicles and construction equipment will not be refueled within 100 feet of the seasonal wetland or Morrison creek, if feasible. If this is not feasible, secondary containment will be used. Refueling of all vehicles and construction equipment will be conducted on paved surfaces or within secondary containment, and any spills will be cleaned up immediately.

- All vehicles and equipment will be properly maintained. Vehicles or equipment leaking hazardous fluids will not be allowed entry to the project site.

Effects of the Proposed Action

It is the opinion of the Service that the new location of the proposed project reduces effects to the snake and vernal pool crustaceans. The proposed project will result in the permanent loss of 1.01 acres of upland snake habitat. Effects to the snake in the original biological opinion were 6.01 acres, therefore there will be a reduction of effects to the snake totaling in 5 acres. The proposed project will also avoid impacts to aquatic habitat set to be impacted by the original project resulting in a reduction of effects to aquatic habitat of 2.02 acres. The proposed relocation of the flood control structures will also decrease effects to vernal pool crustaceans by avoiding impacts to 2.32 acres of seasonal wetlands resulting in a reduction in permanently lost potential vernal pool crustacean habitat from 3.00 acres to 0.68 acre (Table 1).

	Original Project	Proposed Project	Change in Impacts
Seasonal Wetlands (VPC)	3.00 ac	0.68 ac	-2.32 ac
Aquatic Habitat (GGS)	2.02 ac	0.00 ac	-2.02 ac
Upland Habitat (GGS)	6.01 ac	1.01 ac	-5.00 ac

Table 1: Changes in impacts for the Morrison Creek Union Pacific Railroad project

REINITIATION—CLOSING STATEMENT

This concludes formal consultation with the Corps on the proposed South Sacramento County Streams Morrison Creek Union Pacific Railroad project. As provided in 50 CFR §402.16, re-initiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (a) the amount or extent of incidental take is exceeded; (b) new information reveals effects of the proposed action which may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (c) the agency action is subsequently modified in a manner that causes an effect to listed species or critical habitat that was not considered in this opinion; or (d) a new species or critical habitat is designated that may be affected by the proposed action.

If you have any questions regarding this biological opinion, please contact Tyler Willsey, Fish and Wildlife Biologist, at (916) 414-6577, or Kellie Berry, Chief, Sacramento Valley Division at (916) 414-6645.

Sincerely,

for Susan K. Moore
Field Supervisor

cc:
Sarah Ross, U.S. Army Corps of Engineers, Sacramento, California

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:
81420-2008-F-1649-R003

NOV 21 2012

Ms. Alicia E. Kirchner
Chief, Planning Division
Corps of Engineers, Sacramento District
1325 J Street
Sacramento, California 95825-2922

Subject: Reinitiation of Formal Consultation for the South Sacramento Streams, Morrison Creek – Union Pacific Railroad Project, Sacramento County, California (Service File Number 1-1-01-F-0043)

Dear Ms. Kirchner:

This letter responds to the U.S. Army Corps of Engineers' (Corps) November 21, 2012, request for reinitiation for the South Sacramento Streams, Morrison Creek – Union Pacific Railroad Project (project), Sacramento County, California. The U.S. Fish and Wildlife Service (Service) previously analyzed the project's effects on the federally-listed as threatened vernal pool fairy shrimp (*Brachinecta lynchi*), the threatened vernal pool tadpole shrimp (*Lepidurus packardi*), the threatened valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), and the threatened giant garter snake (*Thamnophis gigas*) (snake) and issued a biological opinion on April 15, 2002 (Service File Number 1-1-01-F-0043). This reinitiation request is the third such request to reinitiate consultation on the project. The Corps originally requested reinitiation for work at the Morrison Creek – Union Pacific Railroad site of the South Sacramento Streams Project on August 19, 2011, due to changes in the project description and the Service addressed the effects of proposed project changes on the snake in a response on September 30, 2011 (Service File Number 81420-2008-F-1649-R001). Additionally, a second reinitiation request from the Corps to extend the work window, dated September 24, 2012, was addressed by the Service in a response dated October 1, 2012 (Service File Number 81420-2008-F-1649-R002). Under the second reinitiation, the work completion date was extended from October 1, 2012, to November 30, 2012.

The Corps has been actively working on the project and anticipates all earth-moving work to be completed by November 30, 2012. However, due to weather concerns, the Corps anticipates that hydroseeding activities will not be completed until December 9, 2012. As per the Service's previous reinitiation responses dated September 30, 2011, and October 1, 2012, all exclusionary fencing has remained intact throughout the construction period and has been inspected daily by a Service-approved biologist. The current project work does not affect the vernal pool fairy shrimp, vernal pool tadpole shrimp, or the valley elderberry longhorn beetle. This response is in accordance with 50 CFR 402.16 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.).

The Service's response of September 30, 2011 (Service File Number 81420-2008-F-1649-R001) addressed the current project work of 2012 at the Morrison Creek – Union Pacific Railroad site. The September 30, 2011 letter is amended as follows:

Page 2 – Construction Workers, Equipment, and Schedule section under General Minimization Measures, replace:

Construction hours will be limited to 7 a.m. to 6 p.m. Monday through Saturday, and 9 a.m. to 6 p.m. on Sunday. The project will take approximately four months to complete. It is anticipated that the project will commence in the spring of 2012, with all construction completed by October 1, 2012.

With:

Construction hours will be limited to 7 a.m. to 6 p.m. Monday through Saturday, and 9 a.m. to 6 p.m. on Sunday. The project will take approximately seven months to complete. All project work will occur between May 1, 2012, and December 9, 2012.

All other portions of the Service's previous responses to the reinitiation requests of September 30, 2011, and October 1, 2012, as well as the April 15, 2002 biological opinion, remain the same.

This concludes formal consultation for the South Sacramento Streams, Morrison Creek – Union Pacific Railroad Project outlined in your request. As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action.

If you have any questions regarding this reinitiation on the proposed South Sacramento Streams, Morrison Creek – Union Pacific Railroad Project, please contact Harry Kahler, Fish and Wildlife Biologist, or Doug Weinrich, Chief, Habitat Conservation Division at (916) 414-6550.

Sincerely,

for Susan K. Moore
Field Supervisor

cc:
Ms. Sarah Ross, U.S. Army Corps of Engineers, Sacramento, California

EXHIBIT G

Suggested Flood Fighting Methods and

Stop Log Installation Instructions

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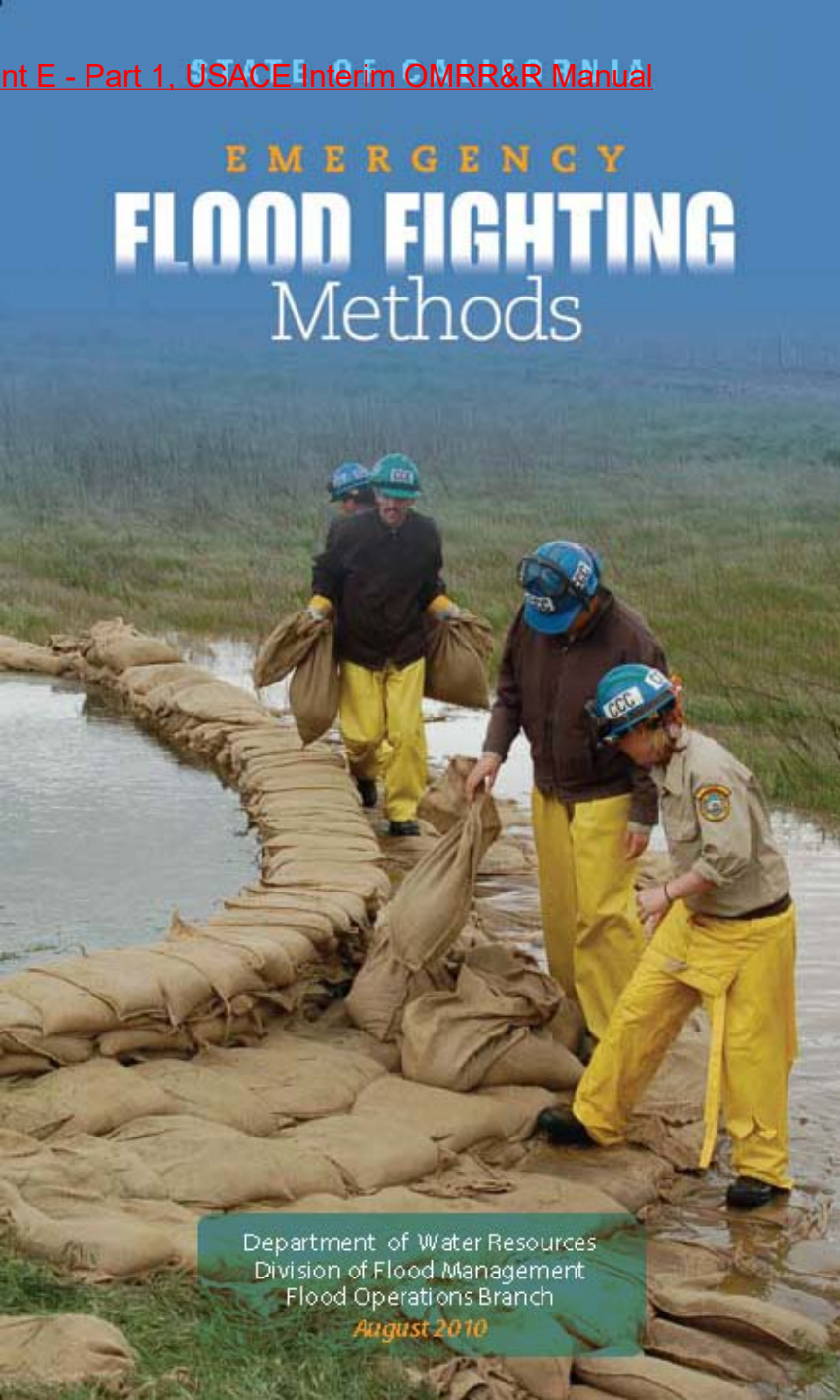
STATE OF CALIFORNIA

EMERGENCY

FLOOD FIGHTING Methods



Department of Water Resources
Division of Flood Management
Flood Operations Branch

August 2010

STATE OF CALIFORNIA
CALIFORNIA NATURAL RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

FLOOD FIGHTING
Methods

Division of Flood Management
Flood Operations Branch

August 2010

Prepared by
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Table of Contents

2 *Foreword*

3 *Levee and Embankment Threats*

3 *Patrolling*

5 *Filling Sandbags*

7 *Passing Sandbags*

8 *Sandbag Construction*

9 *Control of Overtopping (Sack Topping, Temporary Levee)*

12 *Control of Boils*

16 *Wavewash Protection*

22 *Raincoat Method*

23 *Emergency Spillway*

24 *Structure Protection / Diversions*

28 *Water / Storm Drain Protection*

29 *Flood Fight Safety*

33 *Flood Fighting Terminology*

36 *Reference Guide*

37 *Flood Fight Material/Equipment List*

38 *Levee Profile*

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Foreword

The California Department of Water Resources (DWR), Division of Flood Management has been tasked to prevent, reduce, and mitigate the risk of damages associated with flooding. For over fifty years DWR has been the lead State agency responsible for responding to this costly natural disaster. Our mission is to prevent loss of life and damage to property and infrastructure.

Working together State, federal, and local agencies manage California's Flood Control System which consists of reservoirs, levees, weirs, bypasses, and retention basins.

This statewide system is managed with support from technologies such as weather and water forecasting, coordination of reservoir releases and a network of rain and stream gauges and snow pack monitoring. The information gathered is extremely important to emergency responders and the public.

The 'Flood Fighting Methods' outlined in this booklet have proven effective during many years of use by DWR, United States Army Corps of Engineers, and local agencies on flood-related emergencies. This handbook is published by the DWR Flood Operations Branch and is designed to be used with the Flood Fighting Methods class.

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Levee and Embankment Threats

The main causes of levee failure or flood related problems due to high water are:

- Seepage through or under the levee heavy enough to cause a "boil".
- Erosion of the levee or embankment due to swift moving water or wave action.
- Overtopping resulting from water-surface elevations higher than the levee or embankment.

Patrolling

The best defense against flood related issues and/or levee failure is to identify problems early and repair them immediately. Biannual levee inspections and effective high water patrolling make this possible. The following suggestions will help in organizing patrol teams for this work.

- Operate under the SEMS / ICS system and report to the appropriate section chief.
- Provide a sufficient number of workers for two 12 hour shifts.
- Provide each worker with a copy of this 'Flood Fighting Methods' handbook.
- Assign two people to each mobile patrol.
- Assign each mobile patrol vehicle an area no larger than can be inspected at least every 2 hours, with more frequent patrols as conditions warrant. Foot patrols may offer a more thorough inspection.

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- Furnish each mobile patrol vehicle with radio/cell phone or other communication equipment, lights for night patrol, and the following materials: Laths, survey ribbon, permanent marker, pad and pencil, flashlight with extra batteries, 2 shovels, 1 sledge hammer, approximately 50 sandbags (empty), 1 roll of plastic sheeting (visquine), 1 box twine, 100 buttons, 25 wooden stakes, lifeline, personal floatation devices, blanket, First Aid kit, Directory of Flood Officials, and Flood Emergency Phone Card. (see Reference Guide on page 36)
- Identify potential problems: boils, seepage, erosion, cracks, sloughing etc.
- Instruct each patrol team on the correct filling and placement of sandbags. They should know what danger signs to watch for, and how to signal for help.
- Vehicles should remain on high ground in threatened areas. Always have escape routes and make them known.
- Instruct each leader to check with their team members frequently. Investigate all reported problems.
- Be aware of the locations of stockpiled sandbags and other tools and equipment at strategic locations.
- Be prepared to obtain more workers, tools, and equipment on short notice.
- Advise the officials of the district or agency responsible for emergency assistance in the area and if necessary, request their help, i.e. local emergency services office.
- Contact the nearest representative of the Department of Water Resources for technical advice and assistance.

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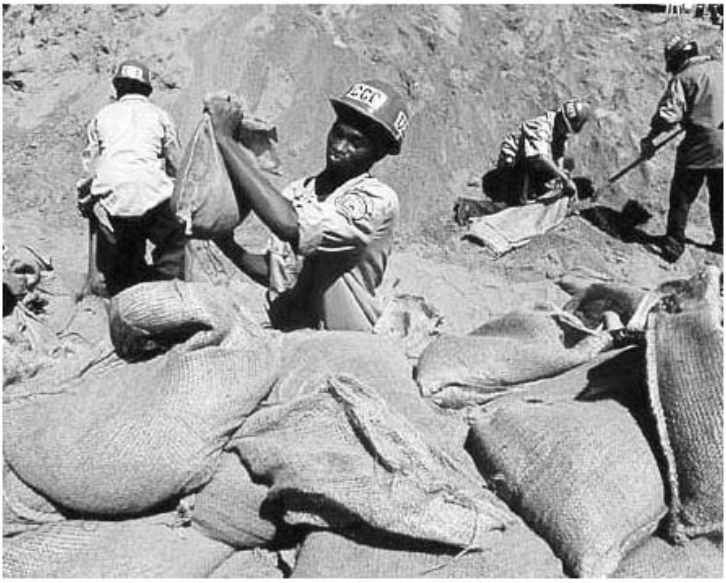
Filling Sandbags

When filling sandbags you should work in pairs, with one person holding the bag while the other shovels in the fill material. The bag holder should find the most comfortable position while holding the bag open (see Figure 1 page 6). **The most common mistake made is overfilling bags.** The first shovel of fill should be placed on the lip of the bag to help hold the bag open. The shoveler should use rounded scoops of fill until the bag is approximately 1/3 full. While shoveling or holding, avoid extra movements (turning or twisting of the back) to prevent injury and reduce fatigue.



Filling Sandbags

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Figure 1: Proper sandbag filling

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Passing Sandbags

Passing Sandbags

To avoid injuries and maximize productivity emergency responders can be organized into a sandbag passing line or 'chain'.

The line is formed by standing facing the next person and slightly off set. The bags are passed down the center of the chain.

Passing Sandbags

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Sandbag Construction

The use of sandbags is a simple but effective method of preventing or reducing damage from floodwater and debris. (see Figure 2) Suggestions for constructing sandbag structures are:

1. Close-weave burlap bags 18" x 30" are recommended for all sandbag construction when available.

2. Fold the empty top of the bag at a 45-degree angle to keep sand from leaching out.

3. Place each bag over the folded top of the preceding bag and stomp into place.

4. Stagger the second layer of bags over the seams of the preceding layer.

5. Stomp all bags to form a tight seal.

6. The last sandbag in a line is referred to as a Key Sack. The empty top of this bag is folded under and stomped into place.

Sandbag Wall Construction

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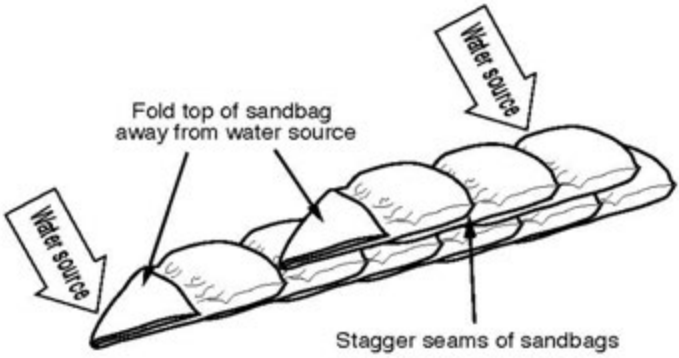

Figure 2: Fill sandbags 1/3 full, fold top of sandbag away from water source and stagger seams of sandbags.

Control of Overtopping

If any levee reach or stream bank is lower than the anticipated high water elevation, an emergency topping should be constructed to raise the grade above the forecast flood height. A sack topping may be required at road or stock crossings, low levee sections, or railroad crossings. The following sections discuss various methods for increasing levee and bank elevations.

Sack Topping

The most common form of flood control work is the use of sandbags for construction of temporary walls. The use of sandbag walls to increase the height of a levee section is called "sack topping" (see Figure 3). The sacks are laid "as stretcher rows," or along the levee.

Alternate layers can be crossed if additional strength is needed. The sacks should overlap at least one-third and stomped firmly into place. When properly placed and compacted, one sack layer will provide about 3 to 4 inches of topping.

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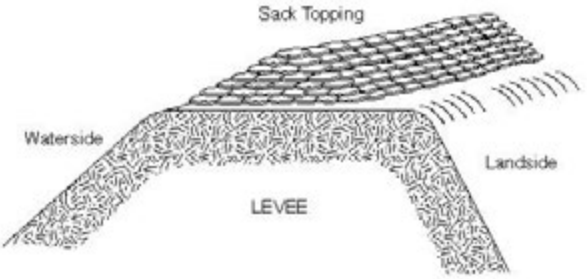

Figure 3: Sack topping on a levee

Sack Topping

Temporary Levee

This method is used to raise low areas during high water periods to prevent overtopping of levees, stream and riverbanks, small earthen dams, roadways, etc. To raise low areas, unfold a 20'x100'x10 mil roll of plastic sheeting and lay out flat on area to be raised (see Figure 4). Place fill material on plastic. Fold plastic over material, lay a single row of sandbags on the backside lip of plastic and on all seams. Fill material can be placed using bottom dump or dump bed trucks, front-end loader or manually.

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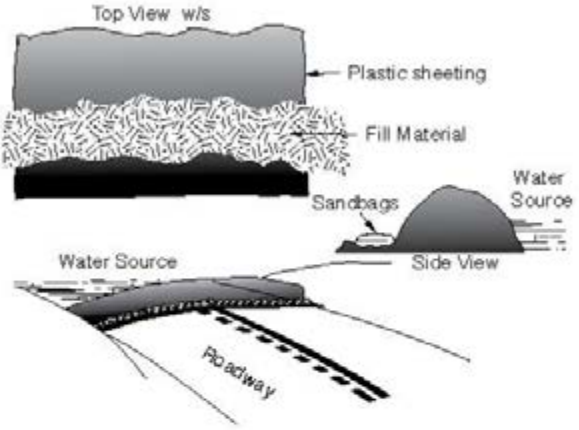

Figure 4: Temporary levee

Temporary Levee

Lumber and Sack Topping

Wooden panels are used on the waterside shoulder and reinforced on the opposite side with sandbags. The method is used to raise low reaches during high water and divert debris flows (see Figure 5). Stakes 2"x 4"x 6' should be driven on the waterside shoulder 6 feet apart. A shallow trench is and lined with empty sandbags to provide a seal. Pre-constructed wooden panels are placed in the trench

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and nailed to the landside of the stakes. This wall should then be backed with enough sandbags to support the panels against the expected high water. In some cases, it may be practical to back the panels with compacted earth in lieu of sandbags. Attach 2"x 4"x 10' lumber kickers to the stakes that support the panels, and drive 2' stakes into the levee crown. Use at least two nails at each joint to provide rigid construction.

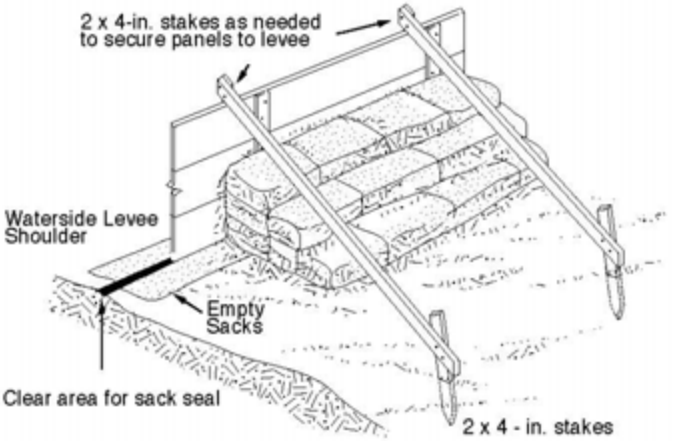

Figure 5: Lumber and sack topping

Control of Boils *(Away from Levee)*

A boil is a condition that occurs when water is "piped" through or under a levee and resurfaces on the landside. These weak points are generally caused by burrowing rodents or decomposed tree roots. High water pressure can begin to erode the interior of the levee and weaken the structure. Levee material will deposit around the exit point as the water discharges on the landside. If the boil is determined to be **"carrying material"** then corrective action is required to control the situation.

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If left unattended the material that makes up the levee can be eroded at an accelerated pace, causing subsidence and overtopping of the levee. This could result in a levee break.

The common method for controlling a boil is to create a watertight sack ring around it. The sandbag structure should be high enough to slow the velocity of the water and prevent further discharge of material from the boil (see Figures 6 & 7). The flow of water should never be stopped completely, since this may cause the boil to "break out" in an area near the existing sack ring. A spillway must be constructed to direct water away from all boil sites.

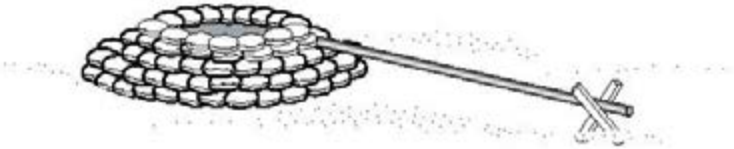

Figure 6: Boil sack ring

Bottom width should be at least 1 1/2 times the height. Do not sack boils that are not carrying material, but continue to monitor. Boils can begin to carry material after first located.

Boil Sack Ring

The sack ring should be large enough to encompass the area immediately surrounding the discharge point (3 to 4 feet diameter). If several boils carrying material are found, a single large sack ring may be constructed around the entire "nest" of boils.

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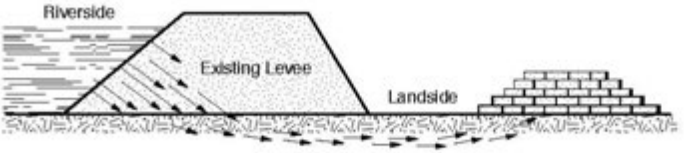

Figure 7: Flow of water through a levee

Control of Boils *(On Levee Slope)*

If the boil is close to or on the levee slope, a U-shaped sack ring may be built around the boil and keyed into the slope. Construction of this method can be difficult and requires substantial shoring up of the U-shaped sack ring structure. A spillway must be constructed to direct water away from all boil sites (see Figure 8).

NEVER completely stop the flow from a boil. This may cause the boil to "break out" in an adjacent area. ALWAYS control the boil to a point where it ceases to carry material and the water runs clear.

"U" shape Sack Ring

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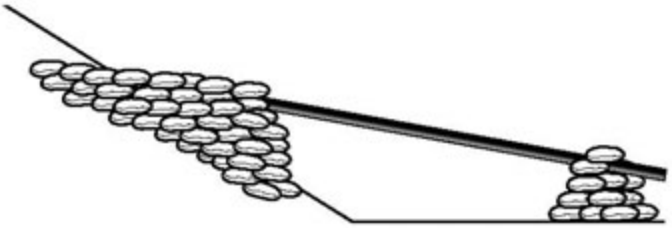

Figure 8: Spillways can be constructed by nailing two 2"x 6" boards together to form a V notch; PVC pipe; two parallel sandbag rows; visquine, etc.

Waterside Boil Inlet Detection

Water running through a levee and carrying material can sometimes be stopped on the waterside, thus eliminating the building of sack rings on the landside (see Figure 9). A six foot long section of 2" diameter metal pipe secured to a 5'x 6' foot piece of plastic or canvas can be rolled over the inlet hole on the waterside. Drive 1"x 3"x 2' stakes into the shoulder of the levee. Suspend half-filled sandbags on top of rolled-out material with twine and tie off to stakes. It can be difficult to locate the waterside inlet of boils. Sometimes a swirl is observed at the water's edge.

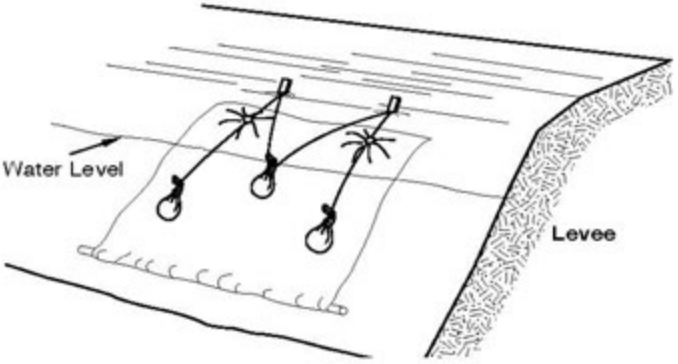

Figure 9: Waterside boil protection

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Wavewash Protection

All levees adjacent to wide stretches of water should be watched during periods of strong wind to detect the early stages of wavewash erosion. If the slope is well sodded, short periods of high wind should cause little damage. However during sustained periods of strong wind and high water, experienced personnel should observe and monitor the effected areas.

Envelope Method

When used correctly, plastic sheeting is useful for wavewash protection. Visquine should be purchased in 10 mil rolls, 20 feet wide by 100 feet long. 1"x3"x2' wooden stakes are driven into the ground just above the levee shoulder on the side you wish to protect. Place the stakes 4 feet apart and stagger vertically by 1 foot as shown in Figure 10.

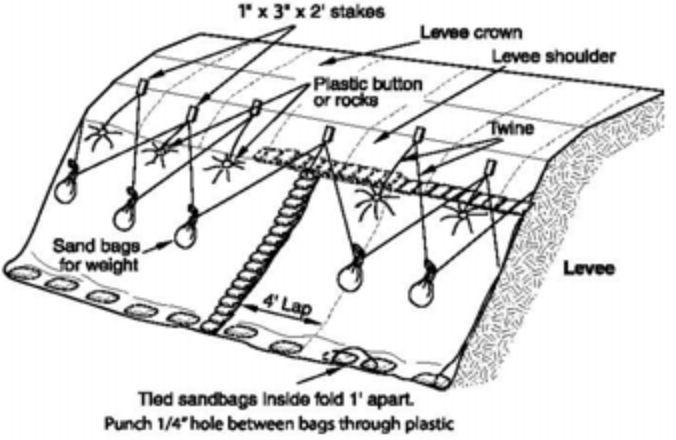

Figure 10: Wavewash Protection

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Wavewash Protection

Avoid driving stakes in a straight line; this can to cause cracking and sloughing of the slope. To provide added strength and leverage, drive stakes at a slight angle away from the water source with the wide (3") side facing the water. Be sure the stakes are well into the ground and are secure.

When rolling out the plastic sheeting it is helpful to use a shovel or similar long-handled tool. Eight to ten people should assist in shaking out the folds of the envelope. Be sure that both layers are held while the envelope is shaken out. Hold on tight! Use caution in strong winds. If the wind catches the plastic it could billow out and pull you along with it.

While flood workers hold the plastic securely, toss tied sandbags into the envelope. The tied sandbags (see Figure 12, page 20) are thrown into the bottom of the envelope with a one-foot gap between bags. The tied bags provide weight to hold the plastic against the levee slope.

A tie-down button or small stone (preferably round) is secured through both layers of visquine. If a stone is used, tie a slip knot and double half-hitch to secure it. Fasten buttons to the visquine and tie off to the stakes using a minimum 250 lb. tensile strength twine with these points in mind: (See Figure 11.)

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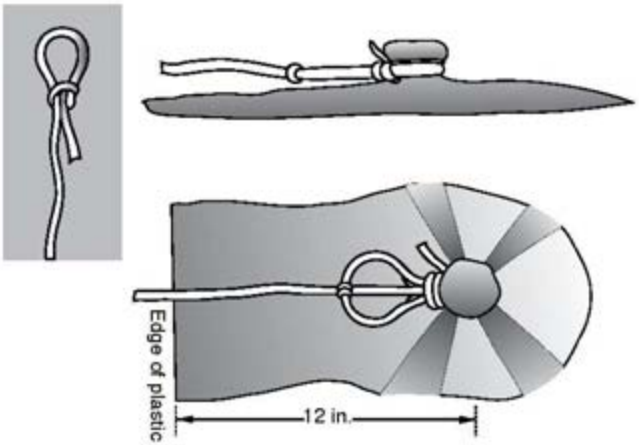

Figure 11: Plastic Tie-Down Buttons

1. Fasten button at least 1 foot from the edge of the plastic.

2. Fasten button to both layers of plastic.

3. Fasten button directly below stakes (one button per stake).

4. Tie twine low on stake for strength and to reduce tripping hazard.

Plastic sheeting is secured using tie down buttons. To attach plastic buttons to the plastic, tie a slipknot on the end of the twine; slip loop over button and plastic and draw tight. Tie two half-hitch knots around the throat of main body. Extend twine to large end of main body, tie a half-hitch knot around the end, and secure twine to stake (see Figure 11).

With the plastic secured to the stakes, punch a small hole between each tied bag in the envelope, (a pencil works well). These holes release water trapped in the envelope. DO NOT use a knife because a slice or slit will tear and

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Button Tying

spread in the plastic. If further slope protection is necessary insert an additional envelope into the existing wavewash protection overlapping at least four feet. To secure the overlap to the stakes attach the two top layers with one button and the two bottom layers with another. The buttons line up with the stakes that are four feet apart. There should be four buttons securing the two envelopes.

Using a continuous piece of twine, hang tied bags from stakes in a zigzag fashion as shown in Figure 10. Tie a double half-hitch knot below the knot in each sandbag. ***Place each bag so that it hangs at the middle of the plastic directly below the stake between the two stakes from which it is suspended.*** Attach twine to every other stake with a double half-hitch. Add a second row of tied bags suspended from the stakes previously skipped. These bags will keep the plastic lying flat against the levee slope in windy conditions. If the upper portion of the slope needs protection, use an additional envelope. Be sure to place the upper layer over the lower layer by 2 to 3 feet. Finally place sandbags along all seams to prevent wind and water from entering the envelope. To prevent slippage, make sure the sandbags forming the top seam cap are half on the plastic and half on the levee as shown in Figure 10. If the levee slope is too steep,

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some of the bags on the seam may be tied off with twine to the stake above the envelope for support.

Remember, wind is your worst enemy. When using plastic sheeting, be sure all seams are secured with sandbags, and make needed repairs to the envelope as soon as possible.

Tying Sandbags

Most sandbags are used with the open end folded. In some cases sandbags will have to be tied. Fill the bag 1/4 to 1/3 full of material. See Figures 12A–12D for instructions.

Figure 12A: Sandbag filled 1/4 to 1/3 full

Figure 12B: Grasp bag at top corner and spin

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Figure 12C: The long tail should be twisted tightly and look like a piece of rope.

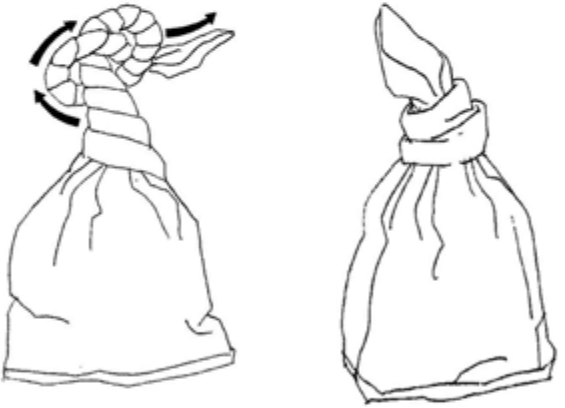

Figure 12D: Tie an overhand knot (pretzel knot) as low as possible on the bag.

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Raincoat Method

The raincoat method is used to prevent further saturation of levee or hillside slopes. Plastic sheeting is laid out flat on the slope, sandbags are placed around the perimeter with additional bags placed randomly for weight. If the slope is steep, wooden stakes can be driven into the ground just above the area to be protected. The stakes are 4 feet apart with a 1-foot stagger. The plastic is secured to the stakes with tie-down buttons or small round rocks (see Figure 13).

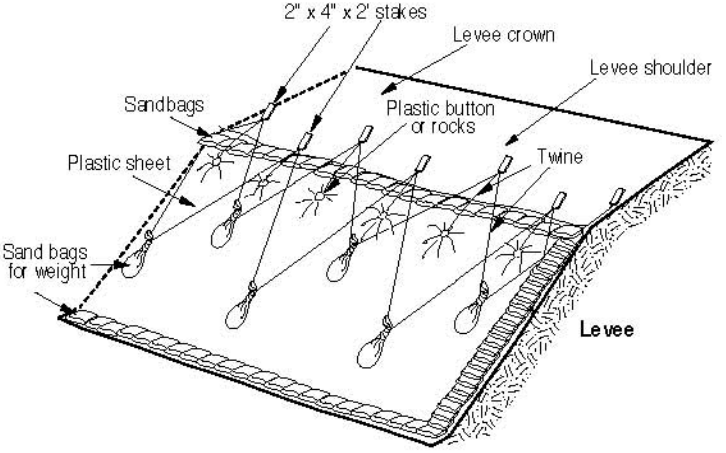

Figure 13: Raincoat method

Use a crisscross method of placing the sandbags (Figure 13) on the plastic. Place a solid row of sandbags on all edges of the plastic (half on the ground, half on the plastic).

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Emergency Spillway

To prevent damage to the levee slope due to overtopping, an emergency spillway can be constructed.

Place plastic sheeting over area to be used for spillway. Line all sides with at least a single row of sandbags. Use additional tied sandbags on plastic for weight if needed.

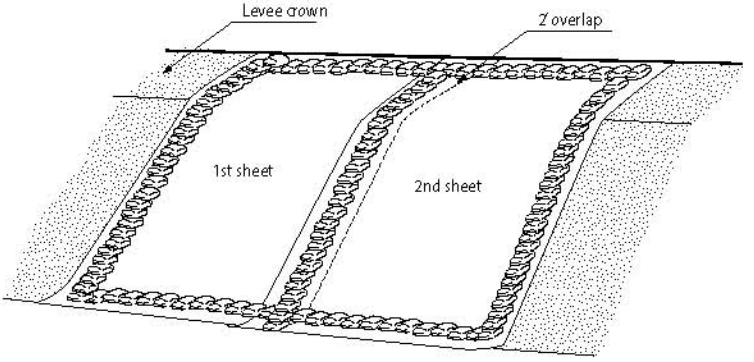

Figure 14: Emergency spillway using plastic sheeting and sandbags

Emergency Spillway

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Structure Protection/Diversions

The main causes of damage to structures, homes, and property during heavy rains or flood flows are:

1. Flood water from overwhelmed storm drains and urban diversions, particularly on sloping streets.

2. Flood flows onto property through driveway openings and low spots in curbs.

3. Debris flow from hillsides that have been cleared of vegetation by fire or real estate development.

The flood fighting methods described in the following sections have proved effective in combating floodwaters and debris flows.

Diverting Water or Debris Flows Away from Structures

Homes and structures can be protected from floodwater or debris flows by redirecting the flow as shown in Figure 15. Sandbag barriers must be long enough to divert the flows away from all structures. Barriers constructed of sandbags or lumber can also be used to channel mud and debris away from property improvements.

Structure Protection

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Structure Protection

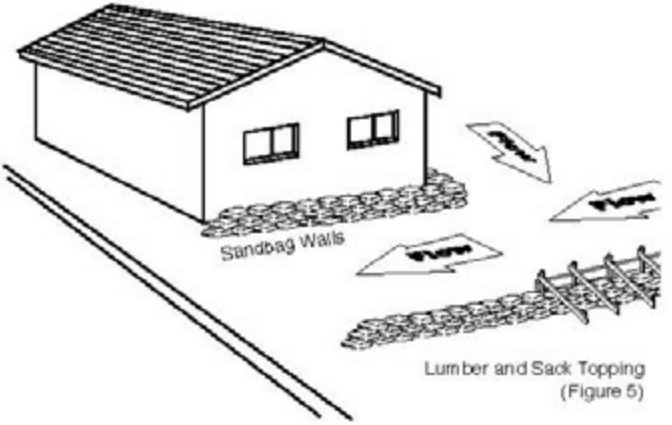

Figure 15: To divert mud, debris, and water, use sandbag walls or lumber and sack topping

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Structure Protection

The following method is used for protection of buildings and other structures along lake shores and in similar situations where water is rising with little or no current.

Lay plastic sheeting on the ground and up the building walls to a point at least 1 foot above the predicted water elevation, and far enough out on the ground to form a half pyramid of sandbags (see Figure 16). Secure plywood over doors and vents. Overlap plastic sheeting and sandbags at corners of buildings.

Home Protection

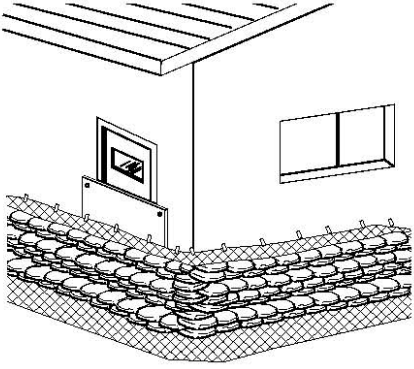

Figure 16: Structure protection

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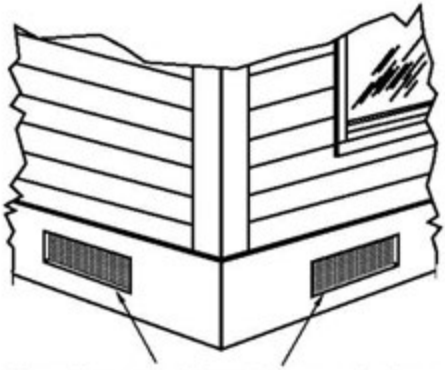
Wet Flood Proofing Requirements for Structures Located Within Special Flood Hazard Areas

National Flood Insurance Program regulations require that buildings on extended wall foundations or that have enclosures below the base flood elevation must have foundation or enclosure wall openings. These openings prevent the foundation or enclosure walls from weakening or collapsing under pressure from hydrostatic forces during a 100 year flood event. The openings allow flood waters to reach equal levels on both sides of the foundation or enclosure wall and minimize the potential for damage from hydrostatic pressure.

THESE OPENINGS MUST NOT BE BLOCKED IF THE BUILDING IS LOCATED WITHIN A SPECIAL FLOOD HAZARD AREA.



Foundation or wall openings must be kept open within special flood hazard areas

Figure 17: Foundation and wall openings in structures

For details refer to FEMA Technical Bulletins TB1-93 and TB-7.
These bulletins may be obtained from the FEMA web site at:
http://www.fema.gov
For additional information contact DWR Floodplain Management at (916) 574-1475

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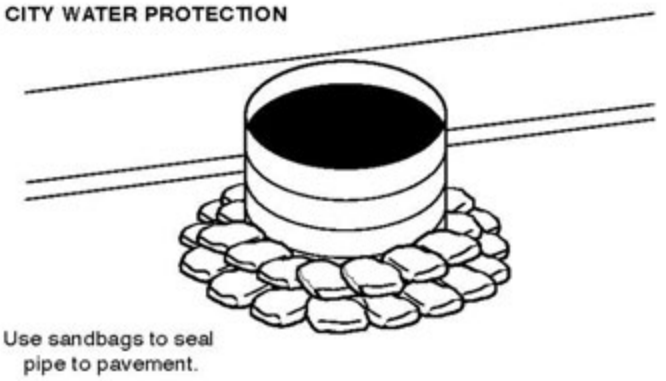
Water / Storm Drain Protection

Water or sewer systems can be protected by placing corrugated metal pipe (CMP) over the utility hole (see Figure 18). Lay plastic sheeting up the walls of the CMP and place sandbags in the form of a half pyramid around the CMP to seal it to the pavement. This method will prevent mud and debris from entering the system and also act as a surge chamber.



Using corregated metal pipe (CMP) over utility hole to isolate sewer line or prevent contamination of water system.

Figure 18: Water / storm drain protection

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Flood Fight Safety

Numerous potential hazards exist during flood events. These hazards are manageable if identification and communication occur on an ongoing basis. Personal safety requires a conscious effort that every flood fighter must consider in their various duties and activities.

- ***Changing Weather Patterns:*** This occurrence can affect existing conditions and create more serious situations. Always know the forecast and how it affects vulnerable areas, workers and the public.

- ***Changing Water Patterns:*** The rise and fall of water can occur gradually or very quickly. Knowledge of high water and how it relates to levees, communities, and workers is essential. Continuous monitoring and communication of water level influences (i.e. reservoir releases, tides, and drainage inflow) are very important. Always know your area and the flood history around you.

- ***Swift Water:*** High velocities of water are common during flooding events. Extreme caution should be used when anyone is exposed to high water. Workers should have flotation devices, throw ropes, and lifelines in the immediate area. Swift water rescue teams may be available. Use common sense and sound judgement around swift water. Know your resources and how to activate them prior to the event.

- ***Temperature Related Illness:*** During a flood fight, weather patterns can change constantly. Changes in temperature present the potential for hypothermia and heat exhaustion/stroke. Flood fighters should know the signs of distress for these types of illnesses and how to treat them. During cold, wet weather it is recommended that workers layer clothing to stay warm and dry. A dry

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blanket and warm clear fluids should be on the work site for emergency use. In warm, hot weather lightweight clothing is recommended. If skin is exposed, a sun block agent may need to be applied. Plenty of drinking water should be on site and consumed regularly. Headgear is recommended in both hot and cold situations.

- ***Insect/Animal Exposure:*** Flooded areas force a variety of animals to evacuate to high ground. Workers in these areas should be aware of these animals and not handle them. If animal removal is needed, contact a local professional. Stinging and biting insects are prominent in certain flood-prone areas. Chemical repellents can be useful as a deterrent. A complete first aid kit should be on site.

- ***Vegetation:*** Noxious plants such as star thistle, stinging nettle, and poison oak are commonly found along rivers, streams, and levees. Avoid direct contact with this type of vegetation to prevent itching and rash. Consult medical personnel if symptoms persist.

- ***Sandpile Safety:*** When shovels are used for filling bags a safe distance for workers is essential. Sandbags and sand may contain contaminates. Have disinfectant available. Safety glasses or goggles are recommended for protection from blowing sand particles.

- ***Contamination:*** Flooded areas can potentially carry high levels of contaminants. Common contaminats include fuel, sewage, and pesticides. Local Haz-Mat teams should be contacted if needed. Always wear protective clothing to help limit contact with water. Carry antibiotic hand soap and wash thoroughly after working around floodwater.

- ***Exhaustion:*** Stress combined with long, physically demanding hours can have an adverse effect on the flood

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worker. It is very important to recognize exhaustion or sleep deprivation and treat them immediately. Operation of vehicles, machinery, or equipment should be avoided. A shift rotation of personnel will help eliminate fatigue factors.

- ***Body Mechanics:*** Proper body mechanics while working on floods is very important. The body is expected to work long, physical hours during the event. Each individual must make a conscious effort to use safe lifting and weight distribution techniques. Watch your footing; surfaces can be slippery and cluttered with tripping hazards.

- ***Construction Equipment:*** There are times when equipment and people will occupy the same work area. Workers should wear safety vests and hard hats and be aware of their surroundings. Safety warning devices (i.e. backup alarms and lights) should be in-tact and working on all equipment. Communication and alertness are vital! All operators must be certified for their equipment.

- ***Boat Travel:*** Materials and/or personnel will sometimes need to be transported to work sites by boat. Operators of the watercraft must be certified. Flotation devices must be available for every passenger. Extreme care should be taken while loading and off loading.

- ***Patrolling:*** Patrolling is the key to effective flood fighting. Patrols will identify, initiate control, and monitor trouble spots in affected areas. Vehicle patrols should travel in two person teams with dependable communication devices. Lifelines, flotation devices, and a blanket should be in the vehicle for possible water-related accidents. Foot patrols should also have the same considerations. Extreme caution should be exercised when travelling saturated, cracking, or sloughing areas.

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- ***Vehicle Placement:*** Vehicles in work areas along the levee should remain parked on high ground. This is usually the crown roadway. Vehicles should also be parked facing their access point. An escape plan should be communicated to all flood workers.

- ***Structure Considerations:*** When working around structures, be aware of downed power lines, natural gas or propane leaks, and unstable structure supports. Communicate with the structure owner if possible.

- ***Safety Gear:*** Rain gear, warm clothing, handheld lights, gloves, goggles, hardhat, boots, first aid kit, ropes, personal flotation devices (PFD), hip waders.

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Flood Fighting Terminology

Boil — Also known as 'Sand Boil', is caused by water flowing through or under a levee, possibly carrying eroded levee material, and surfacing on the land side of the levee.

Button — A plastic tie down device used with plastic sheeting.

Emergency Spillway — Plastic sheeting and sandbags used to allow water to flow over a levee, protecting it from erosion. (Page 23)

Flood Fighting — An effort made to prevent or mitigate the effects of flood waters.

Home Protection — Plastic sheeting and sandbags placed around individual homes to protect from low current flood waters. (Page 26)

Lath — Long, narrow wooden stakes (4 feet long by 1 ½ inch wide) used to mark problem areas during high water patrolling. A brief description of the problem along with the date, time, and patroller's initials are written on the lath with a permanent ink marker. Brightly colored survey ribbon is attached to the lath for easy identification.

Levee — An earthen structure that parallels a river or stream designed to prevent high water flows from inundating urban and/or agricultural land.

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Levee Break	A point in the levee system that has failed to perform its designed function, has eroded away and is allowing water to inundate land.
Levee Breach	The same as Levee Break but can sometimes describe a section of levee that has been intentionally broken. If intentional, also known as a relief cut.
Lumber and Sack Topping	Wooden panels and sandbags used to prevent overtopping and to divert water, mud, and debris flows. (Page 11)
Overtopping	When water has risen higher than the banks of a waterway or the top of a levee.
Plastic Sheeting	Made of polyethylene, these 100'x20'x10 millimeter rolls are sometimes referred to as visquine and are used for erosion control.
Rain Coat	A single layer of plastic sheeting and sandbags used to protect slopes from further rain saturation. (Page 22)
Relief Cut	Intentionally-removed section of levee to relieve hydrologic pressure upstream and downstream of the levee section.
Sack Ring	Multiple sandbag rings used to encircle a boil, slow the flow of water, and stop the erosion of levee material. (Page 13)
Sack Topping	A sandbag wall designed to prevent overtopping. (Page 9)

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Sandbag	An 18"x30" bag (burlap or plastic) filled with sand or other appropriate material intended for use as a temporary flood fighting measure.
Sloughing	Soil movement or slides often caused by over-saturated levee or hillside slopes. Can also be referred to as 'mud slides'.
Structure Protection	Sandbags, wooden panels, or other materials used to divert water, mud, and debris flows away from buildings, homes, and other structures. (Page 24)
Temporary Levee	Use of plastic sheeting, fill material and sandbags to raise a low area on a levee or embankment. (Page 10)
Twine	250lb tensile strength polypropylene tying twine.
'U' Shaped Sack Ring	A sandbag structure used on levee slopes to control boils. (Page 14)
Wooden Panels	Wooden planks or plywood sheets used in conjunction with other flood fighting materials to prevent overtopping of levees or embankments and divert water.
Wavewash	Wind-generated waves breaking against a levee or embankment and possibly causing erosion.
Wavewash Protection	Plastic sheeting, sandbags, twine, stakes, and buttons used to prevent erosion of levee slopes and embankments. (Page 16)

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Reference Guide:

DWR Division of Flood Management
www.water.ca.gov/floodmgmt

California Data Exchange Center
CDEC
www.cdec.water.ca.gov

California Emergency Management Agency
CalEMA
www.calema.ca.gov

National Weather Service
www.weather.gov

To request a copy of the Directory of Flood Officials or Flood Emergency Phone Card, contact the DWR Flood Operations Center at (916) 574-2619

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Flood Fight Material/Equipment List

Fill/Repair material (Sand, Rock, Road Base)
Sandbags (18" width x 30" length 10 oz.)
Plastic Sheeting (100'x20'x10 millimeter rolls)
Wooden Stakes (1"x3"x24")
Bailing Twine (250lb tensile strength)
Tie Down Buttons
Geotextile Fabric (20'x100' rolls)

Patrolling

Patrol Vehicle (4Wheel Drive)
Communication Devices (Radio, Cell Phone, Laptop Computer (e-mail)
Global Positioning Satellite Handheld Device (GPS)
Digital Camera
Lighting (Flash Light, Flood Light)
Batteries
Lath (Bundle of 50)
Survey Ribbon (Bright Colors)
Permanent Ink Markers
Patrol Log (Writing Pad and Pencil)
Measuring Tape (100')

Tools

Shovels, Long Handle (#2 Mud Shovel)
Sledge Hammer (10lb)
Multi Purpose Lineman Pliers
Pulaski
McLeod
Loppers

Safety

Rain Gear
Rubber Boots
Hard Hat
Safety Glasses
Gloves
Boots
Personal Flotation Device (PFD)
Personal Safety Light
Warm Clothing
First Aid Kit

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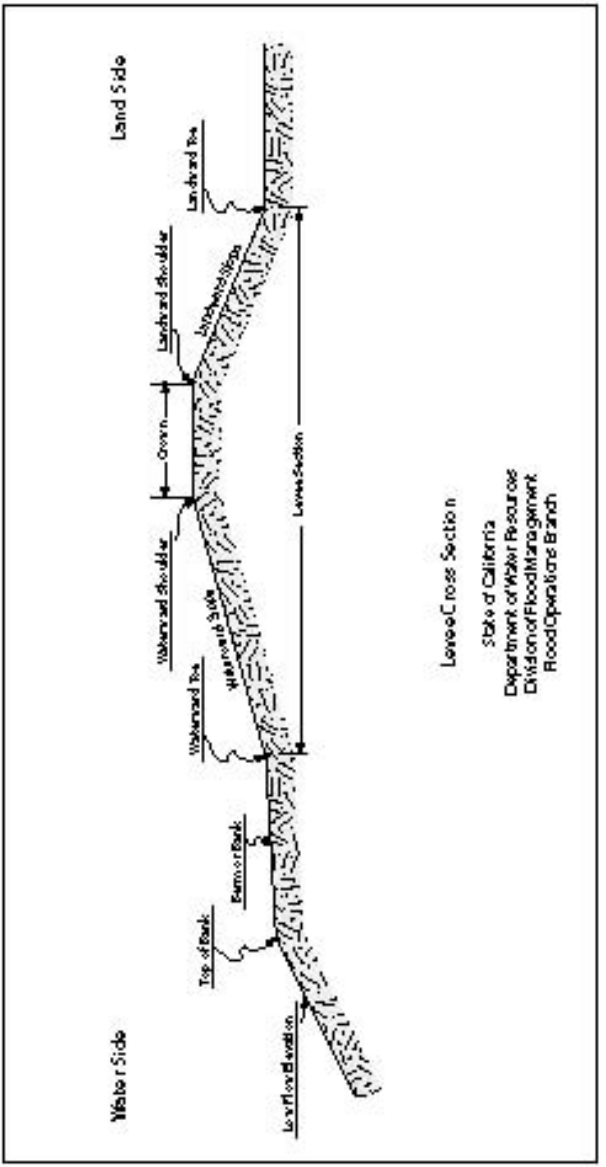

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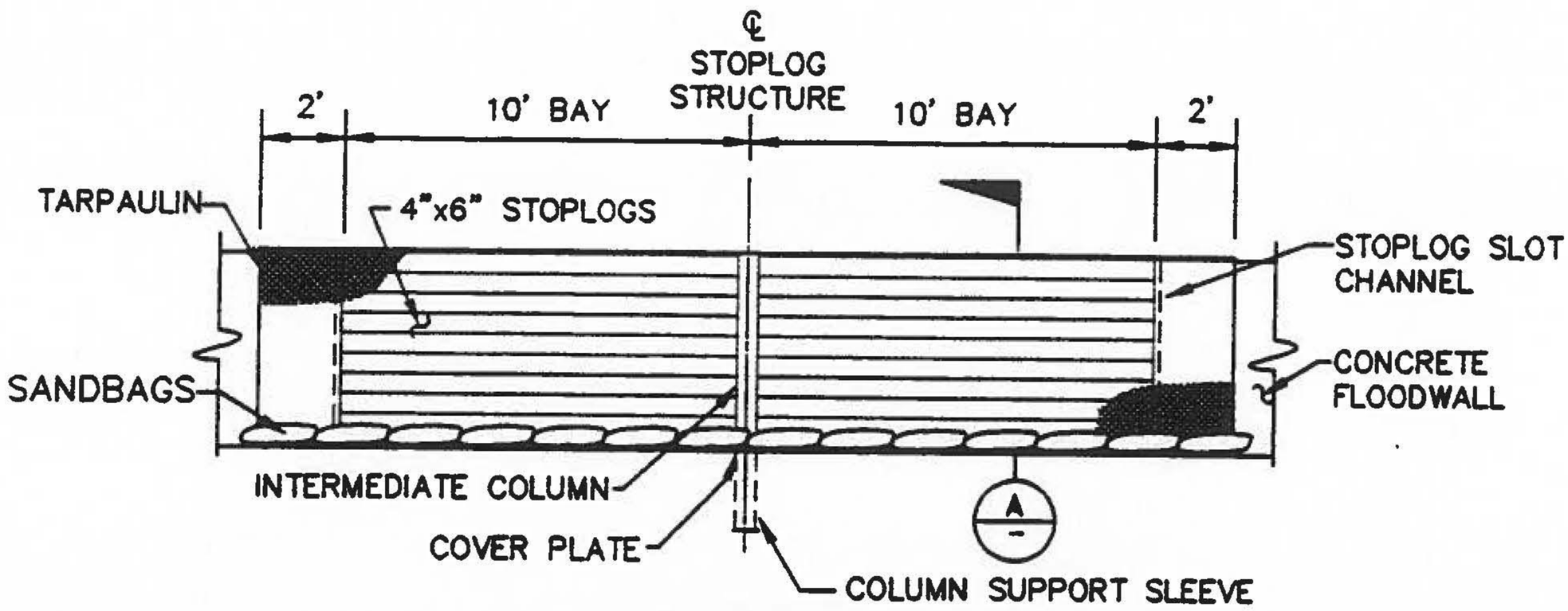
For all flood emergencies, questions, or for additional information, please contact :

State-Federal Flood Operations Center
(916) 574-2619
flood_center@water.ca.gov

For training information, contact:

Rick Burnett
Flood Fight Specialist
(916) 574-1203
rburnett@water.ca.gov
www.floodfightmethods.org

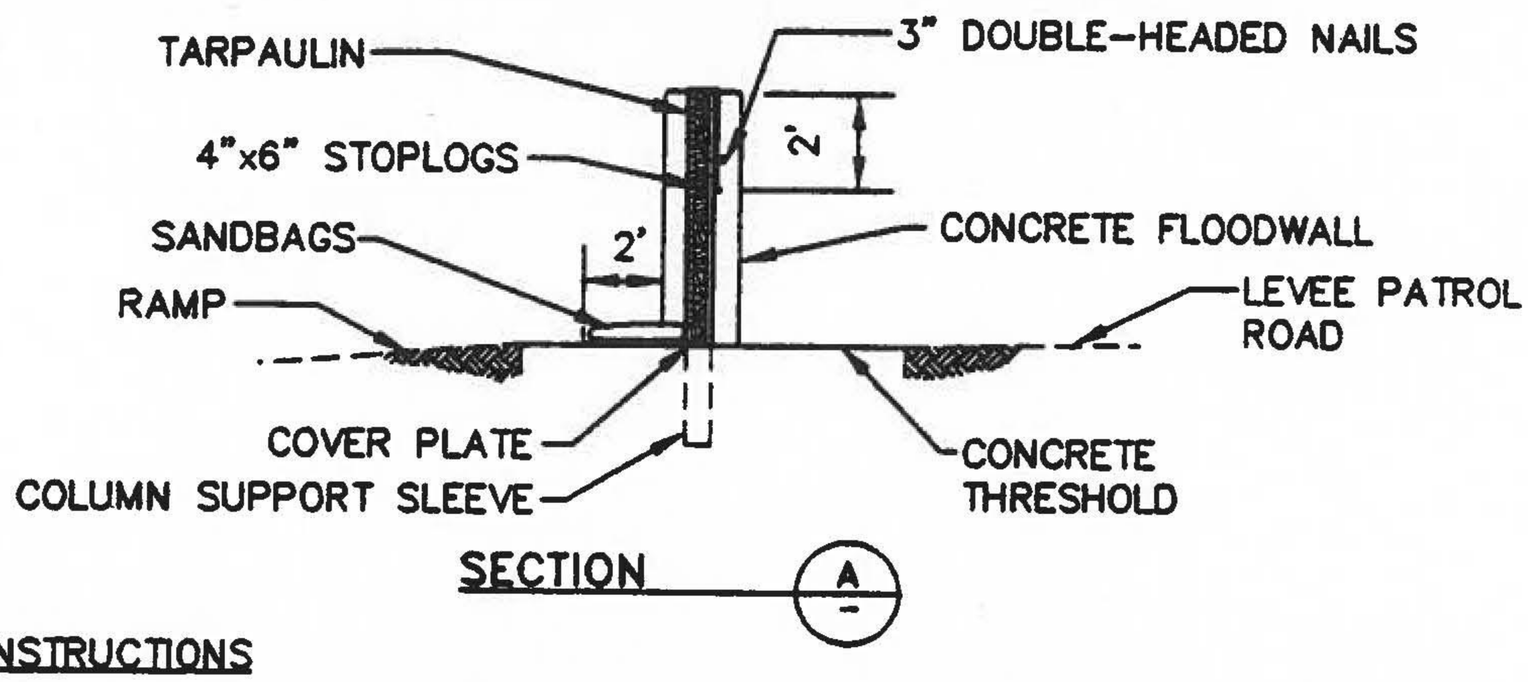
FloodSAFE CALIFORNIA



ELEVATION
(VIEWED FROM WATER SIDE)

WATER SIDE

LAND SIDE



SECTION A

INSTALLATION INSTRUCTIONS

1. Deliver removable items to the site from storage. Removable items for each stoplog structure should include the appropriate number of 4"x6" wood stoplogs, a W6x15 intermediate column (two columns for the railroad spur crossing), a 25'x9' tarpaulin, sandbags, and 3" double-headed nails.
2. Remove the cover plate from the column support sleeve and install the intermediate column with the flanges of the column oriented parallel to the floodwall. Make sure the column rests on the bottom of the column support sleeve. Store the cover plate and mounting hardware in a safe place.
3. Install the 4"x6" stoplogs in each bay between the intermediate column and the stoplog slot channels embedded in the concrete floodwall. The 6" side of the stoplogs should be in the vertical position. Install each bay of the stoplog structure simultaneously, rather than performing the installation one bay at a time. A sufficient number of stoplogs should be provided so that, once installed, the top elevation of the upper stoplog is equal to or greater than the top of the adjacent floodwall.
4. Drape the tarpaulin over the water side face of the installed stoplogs so that it extends two feet beyond the top, bottom, and sides of the stoplogs. Secure the land side edge of the tarpaulin by nailing 3" double-headed nails through the grommets and into the stoplogs. Secure the water side edge by placing sandbags on top of the tarpaulin across the entire bottom. The tarpaulin should be loose enough to allow ponded floodwater to seal it against the water side face of the stoplogs.
5. After the floodwaters have receded, remove the double-headed nails from the land side face of the stoplogs and return the stoplogs, intermediate column, tarpaulin, and sandbags to storage. Remove debris from around the stoplog structure or in the column support sleeve and reinstall the cover plate.

SRWTP
PERIMETER LEVEE IMPROVEMENTS
STOPLOG STRUCTURE INSTALLATION PROCEDURE

STANDARD OPERATING PROCEDURES FOR THE STOP LOG STRUCTURE ACROSS UPRR TRACKS AT MORRISON CREEK

The purpose of the following document is to define Standard Operating Procedures (SOP) and interagency communication during a flood event within Morrison Creek.

All elevations referenced in this section are in the NGVD 29 datum and measured in relation to the gage at the UPRR Bridge on Morrison Creek. The creek stage elevation measured at the UPRR Bridge will determine the timing of the stop log structure installation. During a flood emergency, the following 6 steps are to be taken by the project Superintendent:

STEP 1: Monitoring and Advisory (Creek Stage less than 14 feet)

- Use rainfall and creek stage data of Morrison Creek and the Morrison Creek UPRR bridge gage to determine potential flood conditions in the project area.
- Record the time, stage, and rainfall amount for Morrison Creek at the Mack Road Bridge and the UPRR Bridge on an hourly basis.
- Inquire with the Nation Weather Service (http://www.nws.noaa.gov/) about the potential for additional rain.
    - If the creek stage at the Morrison Creek UPRR bridge gage is less than 14 feet the only required action necessary is to continue monitoring the appropriate gages on Morrison Creek.
    - If the creek stage is forecast to be greater than 14 feet at the Morrison Creek UPRR Bridge gage, proceed to Step 2: Initiate Flood Warning.

STEP 2: Initiate Flood Warning (Creek stage 14 feet and rising)

Begin the notification process when the water surface is at 14 feet and rising, three feet below the threshold elevation. Inform UPRR, SAFCA, the City of Sacramento, and DWR about the water surface elevation and the rate in which water is rising.

Place the closure structure installation crew on stand-by. Inform the closure structure installation crew UPRR trains may be running at speeds greater than 70 mph.

Communicate the Flood Warning to all agencies listed in "**Telephone Contact List**".

- If the creek stage at the Morrison Creek UPRR bridge gage drops below14 feet, return to Step 1 and advise agencies listed in the telephone contact list: Monitoring and Advisory.
- If the creek stage becomes greater than 15 feet at the Morrison Creek UPRR Bridge gage initiate Step 3: Initiate Second Phase Flood Warning.

STEP 3: Initiate Second Phase Flood Warning (Creek Stage 15 feet and rising)

Begin the second phase of notifications when the water surface elevation is 15 feet, 2.0 feet below the 17 feet threshold elevation, and rising. The Superintendent will notify the City of Sacramento, UPRR, DWR, and SAFCA about the water surface elevation, the rate at which the water is rising, and the projected time the closure structure may be installed. Advise these agencies about the Second Phase Flood Warning.

- If the creek stage is forecast to be 15.5 feet or greater at the Morrison Creek UPRR bridge gage initiate Step 4: Flood Warning On-Site Meeting.

STEP 4: Flood Warning On-Site Meeting (Creek Stage 15.5 feet and rising)

Notify UPRR, SAFCA, CVFPB, and DWR when the water surface elevation is 15.5 feet at the UPRR. The Superintendent, SAFCA, DWR, and UPRR will meet on site to discuss the installation of the stop log structure at the UPRR Bridge at Morrison Creek.

  - Request UPRR to coordinate halting railroad traffic at location of the stop log structure.
  - Notify to maintenance crews to move stop log structure materials to the installation site at Morrison Creek and UPRR Bridge.

Continue monitoring, recording the time, stage, and rainfall amount for Morrison Creek at the Mack Road Bridge and the UPRR Bridge.

- If the creek stage is forecast to be 16 feet or greater at the Morrison Creek UPRR bridge gage initiate Step 5: Installation of Stop Log Structure.

STEP 5: Installation of Stop Log Structure (Creek Stage 16 feet and rising)

Install the stop log structure when the stage at the UPRR Bridge is 16 feet and rising. The threshold elevation is 17.0 feet at the top of the tie. At this stage, there should be time to allow for installation of the stop log structure before flood water reaches an elevation where water would be flowing through/over the grade beam at the barrier.

- As flood stage reaches 16.0 feet, all railroad traffic will cease. Confirm that trains have been stopped. There should be a UPRR representative on site.

STEP 6: Removal of Stop Log Structure (Creek Stage 16 feet and lowering)

Remove the stop log structure when the water surface elevation drops below 16 feet, 1.0 foot below the threshold elevation, and lowering. Prior to removal, verify that creek stages upstream are decreasing and forcast to continue to decrease.

- If creek stages are falling and the NWS has forecasted rain for the South Sacramento Streams Basin but it is not currently raining, the closure structure should be removed when the floodwater drops 1.0 foot below the threshold. However, should it start raining, the gages should be monitored closely for rainfall amounts and rising creek stages.
- The Superintendent will contact UPRR, CVFPB, DWR, and SAFCA to notify of the removal of the closure structure. Superintendent shall ensure full coordination with UPRR representative on site.

Telephone Contact List

CVFPB
(916) 574-0609
- 8:00 am to 5:00 pm - CVFPB staff is available

Union Pacific Railroad
UPRR Emergency Response
1-888-877-7267
This is the UPRR single point of contact for dispatch of UPRR emergency responders.

City of Sacramento
Department of Utilities
Drainage / Flood Superintendent Office
(916) 808-6223
During high water events, someone is available at the phone number 24-hours a day.

SAFCA
(916) 874-7606
An answering machine will pick up if no one available.

Department of Water Resources
State Flood Operations Center
(916) 574-2619
This is a 24-hour phone number.
- 8:00 am to 5:00 pm - DWR staff responds to calls.
- 5:00 pm to 8:00 am - An answering service relays valid messages to the assigned DWR Duty Monitor who then responds to calls.

Current Creek and Reservoir Information System
1-800-952-5530
Recording of current creek and reservoir conditions.

Sacramento Regional Wastewater Treatment Plan
Process Control Center (PCC)
(916) 875-9400

SOUTH SACRAMENTO COUNTY STREAMS
FLOOD CONTROL PROJECT
SACRAMENTO, CALIFORNIA
LOG OF STOP LOG (CLOSURE) STRUCTURE OPERATION

Railroad Closure Structure

User of gate opening Notified of impending closure	_____ Date	____ Hr.	____ Min.
Water reaches elevation 3 feet below top of rails	_____ Date	____ Hr.	____ Min.
Water level requires commencement of closure	_____ Date	____ Hr.	____ Min.
Closure of structure initiated	_____ Date	____ Hr.	____ Min.
Closure of structure completed	_____ Date	____ Hr.	____ Min.
Number of people employed to make closure	_____		
Number of man-hours required to erect closure	_____		
Maximum elevation of water surface _____	_____ Date	____ Hr.	____ Min.
Removal of closure initiated	_____ Date	____ Hr.	____ Min.
Gate opened for traffic	_____ Date	____ Hr.	____ Min.

Remarks:

_____
_____
_____
_____
_____
_____
_____
_____
_____

Signed _____ Title _____

_____

EXHIBIT H

North Beach Lake Levee Relief Well O&M Procedures

NORTH BEACH LEVEE
RELIEF WELL OPERATION AND MAINTENANCE

1. General. Fifty (50) relief wells were installed in the levee on the North side of Beach Lake during October 2005. The main access to the site is from Freeport Boulevard, then through a locked gate, (also used by maintenance personnel to access sump 89 located adjacent to relief well 30). The relief wells are identified as RW-1 through RW-50. The wells are located along the north (land) side of the levee between levee stations 90+00 and 149+00. The well numbers increase from east to west. The spacing between wells varies from a minimum of 75 feet to a maximum of 150 feet

The purpose of the relief wells is to relieve pressure in a shallow sand/silty sand layer beneath the levee thereby preventing future boils. As the water level in Morrison Creek rises during flood events, underseepage will collect in the relief wells. When the water level in the relief wells rises above the top of the well, the overtop flow will exit the well via a discharge pipe to sump 89. Pilot holes were drilled prior to relief well installation to determine the depth, slotted interval(s), filter pack gradation, and slot diameter of each individual well. Details of the individual wells are given in Table 1.

In 2005, the wells were initially pump tested after installation. The first 5 year rehabilitation and pump testing (servicing) was performed in the winter of 2010. Data and results from the 2005 and 2010 pump tests are provided in the USACE 2011 North Beach Levee Relief Well Pump Test Report (2011).

Whenever rehabilitation or pump testing work is performed on the relief wells, the water quality of the groundwater discharged from the relief wells to Sump 89 must comply with the City's Municipal Separate Storm Sewer System (MS4) permit. The City will in turn, comply with the Water Discharge Requirement for Dewatering and Other Low Threat Discharges to Surface Waters Order (Order No. R5-2008-0081).

2. Inspection and Reading of Relief Wells. The relief wells will only flow during flood events during the flood season, normally between November 1 and April 30. During the dry season, it is recommended that the relief wells be inspected once every 3 months. The following items are a guideline for what should be noted during relief well inspection, regardless of season:

a) Unusual settlement, sloughing, or material loss of grade of the ground or embankment in the area of the wells
b) Relief Well lid is clearly marked with the relief well number
c) Caving or erosion under or near the concrete pads due to rodents or surface runoff
d) Seepage, saturated or green areas in the vicinity
e) Rodent activity or debris in the relief well chamber and/or the discharge pipe
f) Bending or other damage to the discharge pipe or well casing

If any of the above items are noted, corrective action should be taken to prevent potential damage to and/or loss of efficiency of the wells. Settlement, sloughing, caving erosion, or saturated areas should be evaluated further to determine the cause.

The wells should be sounded for total depth and ground water level once per year, preferably right before flood season (i.e. October). The water level in Morrison Creek should also be recorded at the same time for comparison purposes. Comparison of depth readings over multiple years will indicate the amount and rate of siltation in the relief wells.

During the flood season, it is recommended that the relief wells be inspected and the water levels in the wells and Morrison Creek be recorded monthly. During flood events, it is recommended that the relief wells be inspected and the water levels in the wells and Morrison Creek be recorded daily until the Morrison Creek water elevation recedes below flood stage. When the relief wells are flowing, the flow rate should be recorded in lieu of the water level. The flow rate should be recorded in units of gallons per minute (gpm).

All water level and flow data for the relief wells and Morrison Creek should be recorded on a spreadsheet and/or plotted. Plotting the data facilitates observation of patterns in how the water level or flow rate in the relief wells compares with the water level in Morrison Creek and historical storm events. A major change in relief well water levels or flow rates in relation to Morrison Creek water levels should be investigated.

3. Operation and Maintenance of Relief Wells. Maintenance of relief wells is relatively simple and is required for long-term reliability. The following items are recommended:

(a) If evidence of rodent intrusion is discovered during inspection of the relief well chamber, it is recommended that the discharge pipe be flushed.

(b) Rodent burrows or erosion rills near or under relief well concrete pads should be filled with gravel or compacted clayey material to prevent further erosion and undermining of the pad.

(c) All debris and evidence of rodent activity should be removed from relief wells as soon as possible.

(d) If manhole cover locks are cut or vandalized then the manhole cover locks should be replaced immediately to prevent relief well vandalism in any way, and future well damage.

(e) No fluids, including water, should be introduced into a relief well unless recommended by a Geologist or licensed well driller to clear biofouling, mineral plugging, or to remove sediment/debris from an underperforming well.

(f) Excessive siltation may result in decreased well efficiency. The wells are constructed with a 3 to 5 foot long silt trap at the bottom, beneath the slotted interval. It is recommended that sediment be removed from the well if more than 1 foot has accumulated, based on yearly depth soundings. In no instance should sediment be allowed to accumulate such that it blocks any part of the screened interval.

(g) Corps of Engineers Engineering Regulation ER 1110-2-1942 states that relief wells should be pump tested (serviced) every 5 years. If a major change in relief well water levels or flow rates in relation to Morrison Creek water levels is noted, then it is recommended that a pump test be performed on the affected wells regardless of the time since the previous pump test.

4. Relief Well Servicing Procedure.

Relief well servicing includes rehabilitation (cleaning) and pump testing of all wells and video logging only the wells that do not perform as anticipated. The servicing is accomplished in two phases. The first phase is to rehabilitate (or clean) all 50 wells followed by pump testing all 50 wells in a second phase. Pump testing should be performed at least 24 hours after the rehabilitation phase is completed to allow the groundwater level to stabilize. The video inspection is contingent on the pump test results. Any relief well with a reduction in specific capacity of 20% or more compared to the baseline values in Table 3 below should be evaluated by the Sacramento District's Geotechnical Branch to determine the consequences of the reduction and what remedial measures should be employed.

When the relief wells are serviced, it is recommended that the discharge water from the rehabilitation phase be discharged to the ground surface. Laboratory testing of the discharge water from relief well rehabilitation proves that the muddy water generated contains more dissolved solids then that which is allowed under the Sacramento County's MS4 permit for sump 89. Once the rehab phase is completed, the discharge water should be well within the permit parameters and can be pumped directly into the piping system for Sump 89 during the pump test phase. The turbidity and sand content should continue to be monitored during the pump test phase.

The following is a summary of the procedure used for the 2010 relief well servicing. Construction details of the individual wells are given in Table 1. Pump test rates are shown in Table 2. The baseline specific capacities of relief wells are given in Table 3. Figures 1 through 5 show the various well construction diagrams. Figures 6 through 8 show the field forms used for recording the field data and observations during the 2010 rehabilitation and pump tests.

Recommended equipment:
The typical rehabilitation equipment includes but is not limited to;

- Electrical water level meter for measuring the depth of water,
- Six inch diameter brush for brushing the inside of well casing,
- Six inch diameter rubber swab for surging water through the screened interval of the well,
- Suitable air compressor and ejector pipe assembly to redevelop the well and clean sediments from the bottom by airlift pumping necessary to perform operations from a maximum depth of about 60 feet,
- Two (2) data logger transducers,
- Submersible pump,
- Flow meter for accurately measuring the discharge of water,
- Rossum sand sampler,
- Turbidity meter.

Rehabilitation procedure:
It is recommended that the wells be rehabilitated (cleaned) by surging, swabbing, and air lifting. Each relief well should be cleaned out to the bottom elevation of the 6-inch diameter casing. The total well depths are indicated in Table 1. No violent surging shall be allowed. The wells should be surged through short intervals throughout the screened interval for a period of 30 minutes, or until little or no additional material from the foundation or filter pack can be pulled through the screen. Next, the well is pumped with an air ejector positioned near the bottom of the well. A hose should be attached to the discharge pipe to convey the discharge water away from the work area a distance of 100 feet or more. The well should be pumped until little or no additional material from the foundation or filter pack can be pulled through the screen, typically 30 to 60 minutes. As the rehabilitation of each well is completed, sounding of the well will be required to measure the total depth after cleaning and determine the amount of sediment removed. The rehabilitation phase should be done at least 24 hours prior to the pump testing phase. This time is required for the groundwater to return to its static condition.

Pump test:
The Contractor should provide a pump / pumps large enough to attain the flow rates in Table 2 (10 to 45 gpm) with the pump intake set at the bottom of the screened interval and small enough to fit inside the 6-inch casing of the well. A calibrated impeller type meter should be used for accurately measuring the discharge rate in gallons per minute (±0.5 gpm) and the volume of water removed during the pumping tests. A Rossum Sand Sampler should be used to measure the rate of sand infiltration from the well during the pumping test. If the sand infiltration rate nears or exceeds 5 mg/L, the pumping test should be stopped and the well video inspected for signs of damage to the well screen. Using transducers, the water level should be measured in the test well and one adjacent well during pumping and rebound. Each well should be pumped for at least 30 minutes at the rate listed in table 2. If the water level in the well continues to decline after 30 minutes of pumping, then the test should continue for up to 1 hour. The water level should continue to be recorded for 30 minutes after the pump is turned off to record the water level as it rebounds.

Once the water level data is downloaded from the transducer to a computer, the specific capacity can be calculated and the water level data graphed in an excel spreadsheet for comparison to the baseline results in the North Beach Levee relief well pump test report (2011). Wells that have a reduction in specific capacity of 20% or more compared to baseline values are considered to have failed the test and should be rehabilitated a second time or video inspected for indications of damage to the well screen.

Video Inspect:
If any of the wells fail the pump testing, then a video inspection may be required to determine if the well is damaged. A down-the-hole **color** camera, such as RS Technical or equivalent should be used for the inspection. The recording should have an audio soundtrack associated with the visual track, a current date displayed on the video, and a digital readout of the depth of the camera at all times. The depth readout should be calibrated to show the depth of the camera below the top of well casing. The purpose of the video inspection is to determine the presence of obstructions, blockage, fracture or damage, and the thoroughness of cleaning within each well that fails the pump tests. If, after examining the video records, it is determined that sufficient cleaning has not been accomplished, the well should be re-cleaned and additional pump testing be performed.

Table 1. Relief Well Construction Details

Well Number	Station	As Built Well Depth (ft) bgs	Top of Screen (ft) bgs	Screen Length (ft)	Bottom of Screen (ft) bgs
RW-01	90+46.16	43.00	10	30	40
RW-02	91+17.57	44.60	10	30	40
RW-03	91+95.70	45.95	10	30	40
RW-04	92+73.51	44.80	10	30	40
RW-05	93+43.30	45.15	10	30	40
RW-06	94+10.52	43.89	10	30	40
RW-07	94+74	45.60	10	30	40
RW-08	95+47	44.80	10	30	40
RW-09	96+24	42.86	10	30	40
RW-10	97+00	44.95	10	30	40
RW-11	98+00	59.03	27	27	54
RW-12	99+00	59.95	27	27	54
RW-13	100+00.69	59.65	27	27	54
RW-14	100+99.16	59.22	27	27	54
RW-15	102+00	60.07	27	27	54
RW-16	103+00	59.39	27	27	54
RW-17	104+00	58.16	27	27	54
RW-18	105+00	58.52	27	27	54

Table 1. Relief Well Construction Details					
Well Number	Station	As Built Well Depth (ft) bgs	Top of Screen (ft) bgs	Screen Length (ft)	Bottom of Screen (ft) bgs
RW-19	106+00	58.94	27	27	54
RW-20	107+00	59.15	17	40	54
RW-21	108+50	58.10	17	40	57
RW-22	110+00	63.11	17	40	57
RW-23	111+50	61.22	17	40	57
RW-24	113+00	60.73	17	40	57
RW-25	114+50	60.50	17	40	57
RW-26	116+00	61.64	17	40	57
RW-27	117+50	62.18	17	40	57
RW-28	119+00	62.00	17	40	57
RW-29	120+50	58.26	17	40	57
RW-30	121+85.6	62.62	17	40	57
RW-31	124+11.66	33.04	15	15	30
RW-32	125+50	36.67	15	15	30
RW-33	127+00	36.56	15	15	30
RW-34	128+57.92	34.92	15	15	30
RW-35	130+04.67	35.72	15	15	30
RW-36	131+50	37.16	15	15	30
RW-37	133+00	36.18	15	15	30
RW-38	134+50	37.28	15	15	30
RW-39	135+96.12	36.66	15	15	30
RW-40	137+50	36.95	15	15	30
RW-41	139+00	35.58	10	20	30
RW-42	140+50	35.92	10	20	30
RW-43	142+00	36.76	10	20	30
RW-44	143+00	35.68	10	20	30
RW-45	144+00	36.79	10	20	30
RW-46	145+00	35.09	10	20	30
RW-47	146+00	35.33	10	20	30
RW-48	147+00	36.05	10	20	30
RW-49	148+00	35.58	10	20	30
RW-50	149+00	36.36	10	20	30

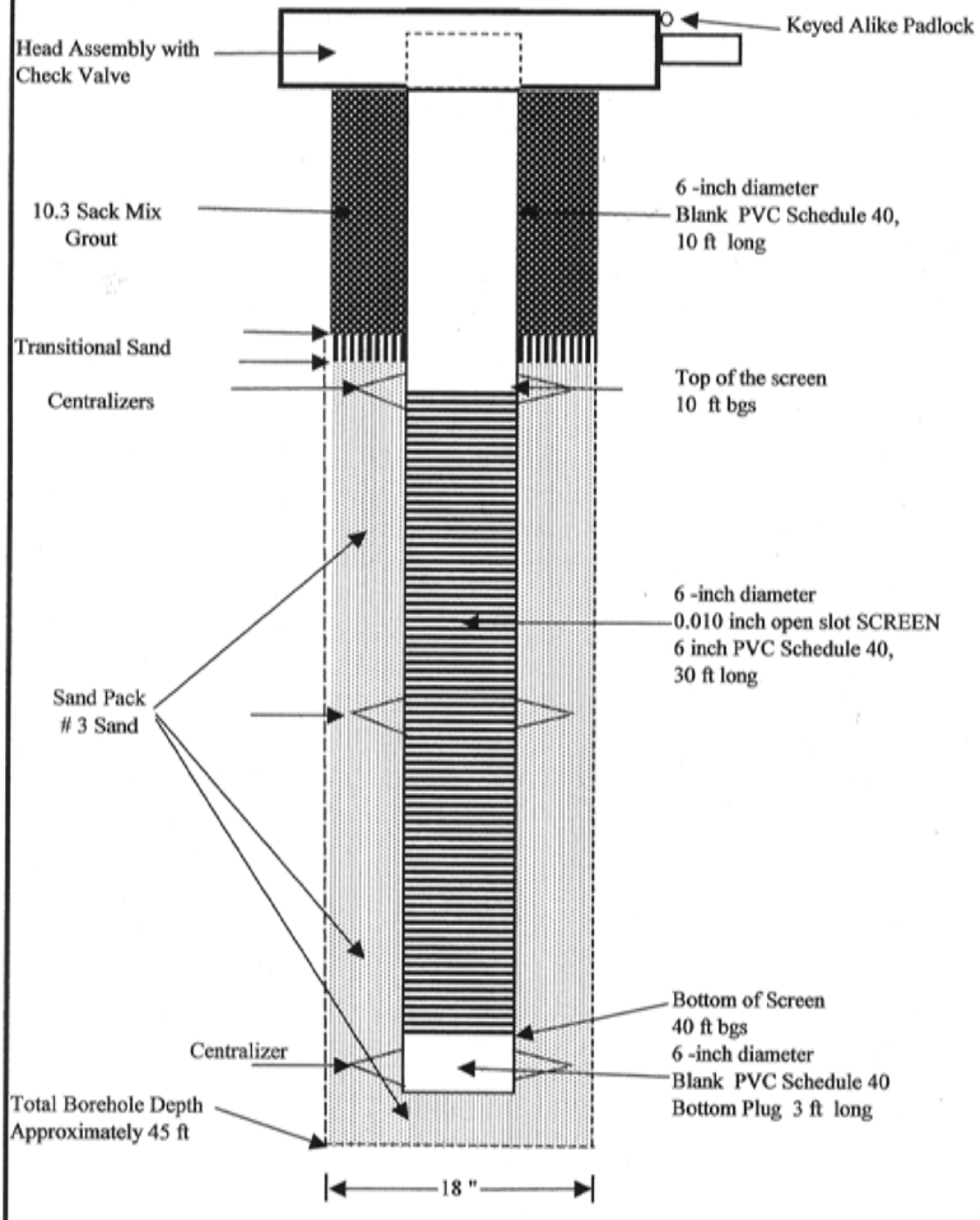
Table 2 - Pump Test Rates for 100% Design Capacity					
RW Name	Pump Rate in gpm	RW Name	Pump Rate in gpm	RW Name	Pump Rate in gpm
RW – 01	15	RW – 18	45	RW – 35	10
RW – 02	15	RW – 19	45	RW – 36	10
RW – 03	15	RW – 20	45	RW – 37	10
RW – 04	15	RW – 21	20	RW – 38	10
RW – 05	15	RW – 22	20	RW – 39	10
RW – 06	15	RW – 23	20	RW – 40	10
RW – 07	15	RW – 24	20	RW – 41	10
RW – 08	15	RW – 25	20	RW – 42	10
RW – 09	15	RW – 26	20	RW – 43	10
RW – 10	15	RW – 27	20	RW – 44	10
RW – 11	45	RW – 28	20	RW – 45	10
RW – 12	45	RW – 29	20	RW – 46	10
RW – 13	45	RW – 30	20	RW – 47	10
RW – 14	45	RW – 31	10	RW – 48	10
RW – 15	45	RW – 32	10	RW – 49	10
RW – 16	45	RW – 33	10	RW – 50	10
RW – 17	45	RW – 34	10		

Table 3. Baseline specific capacities at 100% design capacity pump test rates.					
Well number	Specific Capacity (gpm/ft)	Well Number	Specific Capacity (gpm/ft)	Well Number	Specific Capacity (gpm/ft)
RW-01	18.50	RW-18	40.58	RW-35	13.72
RW-02	29.18	RW-19	35.60	RW-36	35.71
RW-03	16.30	RW-20	52.63	RW-37	40.32
RW-04	28.30	RW-21	76.05	RW-38	51.55
RW-05	29.14	RW-22	86.58	RW-39	5.27
RW-06	25.42	RW-23	108.11	RW-40	12.29
RW-07	107.14	RW-24	99.50	RW-41	12.11
RW-08	33.48	RW-25	97.56	RW-42	40.49
RW-09	46.73	RW-26	103.09	RW-43	53.48
RW-10	78.13	RW-27	60.61	RW-44	46.95
RW-11	75.13	RW-28	48.31	RW-45	34.84
RW-12	60.48	RW-29	42.02	RW-46	41.32
RW-13	51.49	RW-30	43.76	RW-47	42.02
RW-14	50.45	RW-31	11.70	RW-48	39.53
RW-15	49.45	RW-32	10.96	RW-49	52.08
RW-16	65.69	RW-33	5.62	RW-50	43.67
RW-17	42.25	RW-34	7.37		
Note: The baseline capacities for these wells were determined in the USACE 2011 North Beach Levee Relief Well Pump Test Report due to missing data in the initial 2005 report.					

Figure 1 – Relief Well RW-01 Diagram
Figure 2 – Relief Well RW-11 Diagram
Figure 3 – Relief Well RW-20 Diagram
Figure 4 – Relief Well RW-31 Diagram
Figure 5 – Relief Well RW-41 Diagram
Figure 6 – Static Water Level Summary Form
Figure 7 – Well Rehab Data Form
Figure 8 – Well Pump Test Data Form

RELIEF WELL RW-01

Attachment E - Part 1, USACE Interim OMRR&R Manual



bgs = below ground surface

ft = Feet

Date Started: 9/28/2005
Date Completed: 10/26/2005

Station Location: 90 + 46.16

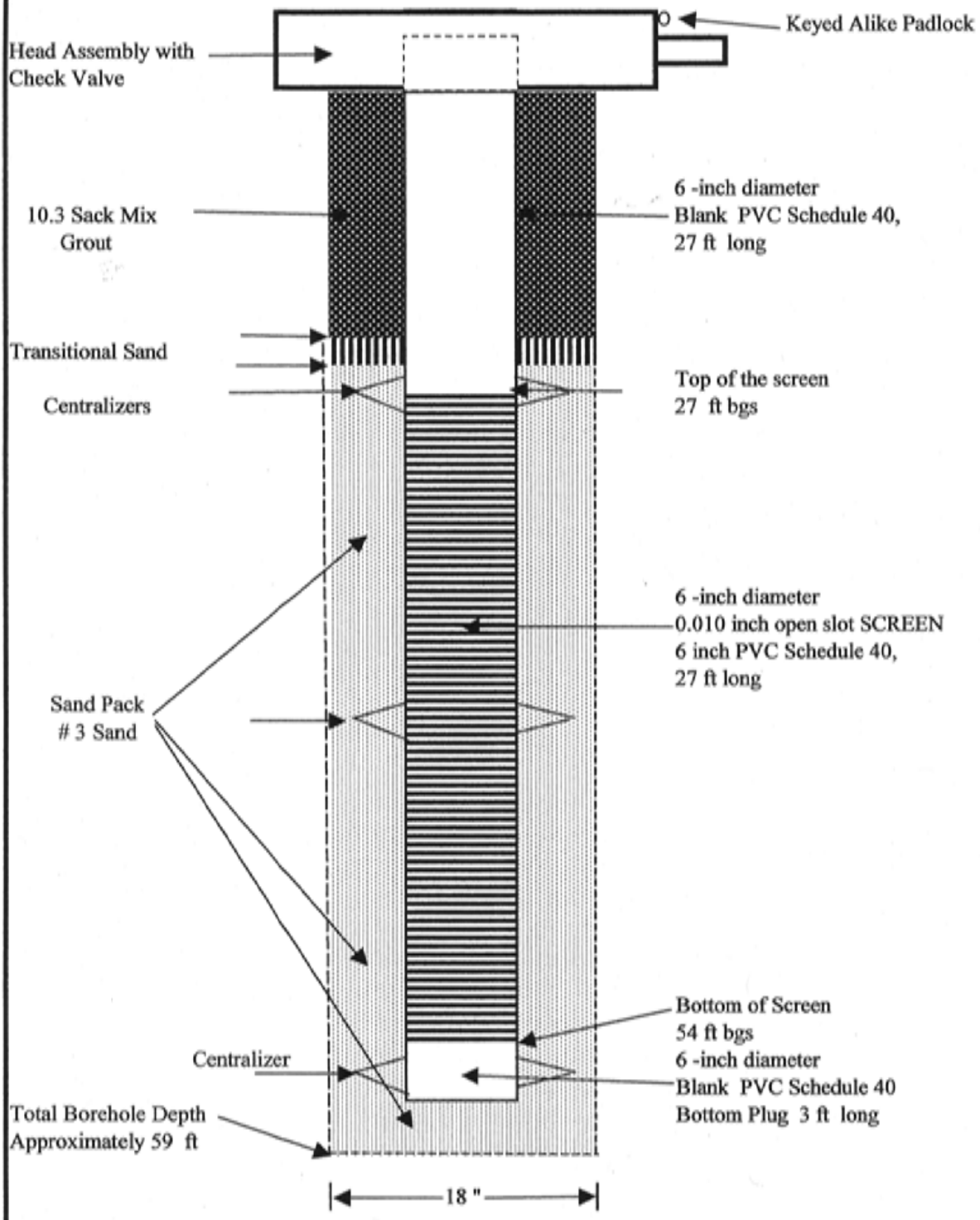
Not to Scale

RELIEF WELL RW-01

South Sacramento County Streams
Flood Protection Project

SC Environmental, Inc. /KEI
USACE Contract: W91238-05-C-0018

RELIEF WELL RW-11



bgs = below ground surface

ft = feet

Date Started: 9/21/2005

Date Completed: 10/26/2005

Station Location: 98 + 00

NotTo Scale

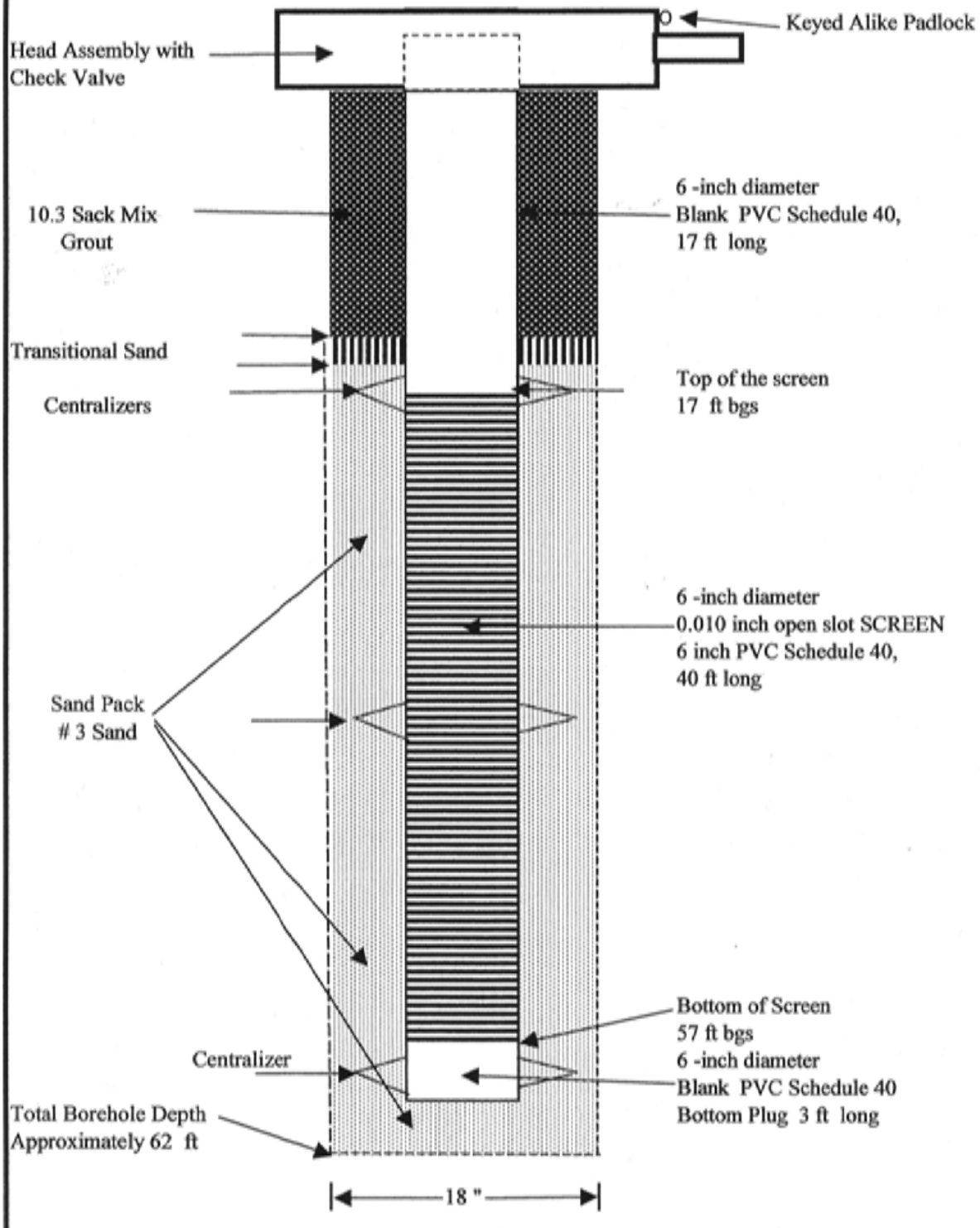
RELIEF WELL RW-11

South Sacramento County Streams Flood Protection Project

SC Environmental, Inc. /KEI

USACE Contract: W91238-05-C-0018

RELIEF WELL RW-20



bgs = below ground surface

ft = feet

Date Started: 9/28/2005

Date Completed: 10/28/2005

Station Location: 107 + 00

Not To Scale

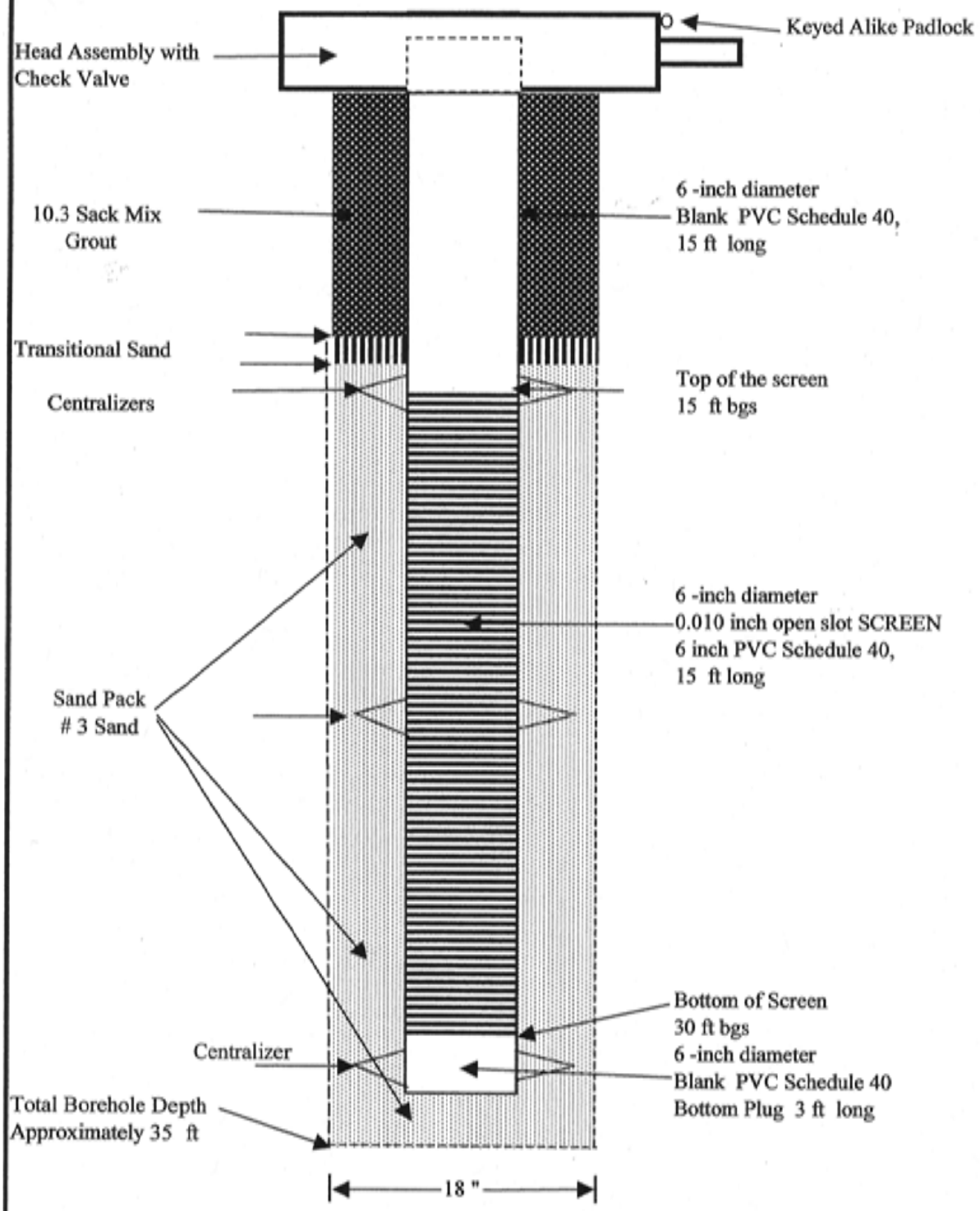
RELIEF WELL RW-20

South Sacramento County Streams Flood Protection Project

SC Environmental, Inc. /KEI

USACE Contract: W91238-05-C-0018

RELIEF WELL RW-31



bgs = below ground surface

ft = feet

Date Started: 9/30/2005

Date Completed: 10/31/2005

Station Location: 124 + 11.66

Not To Scale

RELIEF WELL RW-31

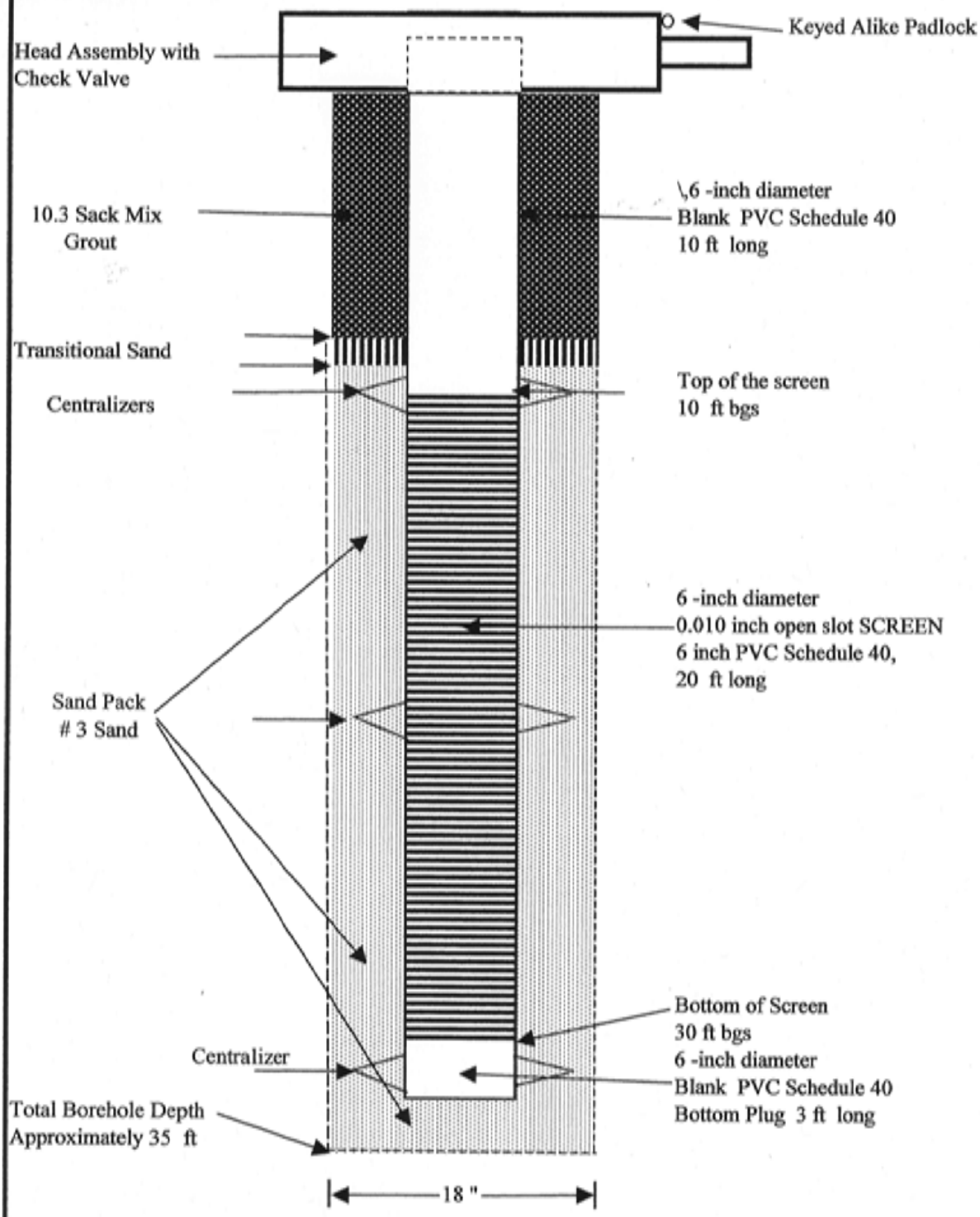
South Sacramento County Streams Flood Protection Project

SC Environmental, Inc. /KEI

USACE Contract: W91238-05-C-0018

Attachment E- Part 1 USACE Interim OMRR&R Manual

RELIEF WELL RW-41



bgs = below ground surface

ft = feet

Date Started: 10/5/2005

Date Completed: 10/31/2005

Station Location: 139 + 00

Not To Scale

RELIEF WELL RW-41

South Sacramento County Streams
Flood Protection Project

SC Environmental, Inc. /KEI
USACE Contract: W91238-05-C-0018

North Beach Levee Relief Well Water Levels

Date Recorded	Well ID	Water Level	Total Depth		Date Recorded	Well ID	Water Level	Total Depth
	RW-1					RW-26		
	RW-2					RW-27		
	RW-3					RW-28		
	RW-4					RW-29		
	RW-5					RW-30		
	RW-6					RW-31		
	RW-7					RW-32		
	RW-8					RW-33		
	RW-9					RW-34		
	RW-10					RW-35		
	RW-11					RW-36		
	RW-12					RW-37		
	RW-13					RW-38		
	RW-14					RW-39		
	RW-15					RW-40		
	RW-16					RW-41		
	RW-17					RW-42		
	RW-18					RW-43		
	RW-19					RW-44		
	RW-20					RW-45		
	RW-21					RW-46		
	RW-22					RW-47		
	RW-23					RW-48		
	RW-24					RW-49		
	RW-25					RW-50		

* All water levels and depths are to be measured from top of well casing

North Beach Levee
Relief Well Rehabilitation Data Sheet

Date: _____

DATA:

Well ID: _____ Static Water Level: _____ Pre–Rehabilitation Depth of well: _____

Depth of ejector: _____

OBSERVATIONS:

Start Time (24hr): _____ Stop Time (24hr): _____ Duration (min): _____

Initial Color of Discharge Water: _____ Odor of Discharge Water: _____

Note: The turbidity must be monitored at regular intervals and be below 50 ntu's before water can be discharged to sump 89.

Time	Turbidity

Brushing Phase Start: _____ Duration: _____

Swabbing Phase Start: _____ Duration: _____

Airlift Phase Start: _____ Duration: _____

Final Turbidity of Discharge Water: _____ Post – Rehabilitation Depth of Well: _____

Notes:_____

_____

_____

_____

_____

_____

_____

_____

North Beach Levee
Relief Well Pump Test Data Sheet

Date: _____

DATA:

Test Well

Well ID: _____ Static Water Level: _____ Well Depth (ft): _____

Depth of pump: _____ Transducer Depth: _____

Initial Flow Gauge Reading (total gal): _____

Observation Well

Well ID: _____ Static Water Level: _____ Well Depth (ft): _____

Transducer Depth: _____

OBSERVATIONS:

Pump Start Time (24hr): _____ Flow Rate (Q in gpm): _____

Color of Discharge Water: _____ Odor of Discharge Water: _____

Turbidity of Discharge Water (in NTUs): _____ Sand Test Volume (ml): _____
(Should not exceed 5. ppm @ 0.5 gpm)

Pump Stop Time (24hr): _____ Duration (t in min): _____

Final Flow Gauge Reading (total gal): _____ Total Gallons Pumped (gal): _____

Calculations:

Sand rate = Sand volume (ml) / duration of test (min) ppm = (Sand rate / 1892.7) X 1,000,000

1 gpm = 192.5 ft^3/day Specific Capacity (ft^2/day) = (flow rate in ft^3/day) / drawdown (h_o-h in ft)

Transmissivity from Specific Capacity = $33.6(Q / h_o\text{-}h)^{0.67}$ in units of (ft^2/day)

Sand Content (ppm): _____ Specific Capacity (ft^2/day): _____ Transmissivity (in ft^2/day): _____

Notes on factors affecting test data: _____

_____

_____

_____

_____

Note: The turbidity must be monitored at regular intervals. If the turbidity is above 50 ntu's the discharge water should be diverted from Sump 89 until the turbidity is below 50 ntus, then the water can be discharged to sump 89.

EXHIBIT I

Datum Conversion Procedures

USACE Sacramento District Datum Documentation Report

Project: South Sacramento Streams

NGVD 29To NAVD 88 Datum Conversion Factor: add 2.54ft.

Datum Conversion Procedure: The USACE Mapping Unit performed field measurements with known historical elevations. All documentation and raw data is filed with the USACE Sacramento District Mapping Unit. All survey and gage control is in US survey feet and is tied to NGS monument JS9301. For questions or comments contact the Sacramento District Datum Coordinator. The results of this survey produced an averaged difference between NGVD 29 and NAVD 88 of 2.54 feet for the USACE South Sacramento Streams civil work project.

Station ID	COE-NGVD29 record	NAVD 88	Difference
Fruitridge (DH6504)	22.33	24.93	2.60
J1414 (JS3901)	36.08	38.69	2.61
Elliot AZ (JS1048)	17.10	19.69	2.59
Keller (AE9873)	29.79	32.21	2.42
SA1-241	19.59	22.05	2.48
			2.54
Averaged Delta = 2.54ft conversion factor for South Sac Streams			

Accuracy Statement: The NAVD88 datum conversion accuracy is: =/- 0.25 feet to real work NAVD 88 elevations per EC- 1110-2-6065 Comprehensive Evaluation of Project Datums. The stated conversion factor is for planning, operations, water management and legacy conversion only. All future design work and survey work shall adhere to the NAVD 88 datum and follow EM 1110-1-1005 Control and Topographic Surveying. Contact the USACE Sacramento District's survey unit or the district's datum coordinator for current survey control.

STATE OF CALIFORNIA
STANDARD AGREEMENT
STD 213 (Rev 06/03)

Attachment F - LPCA between Board and SAFCA

AGREEMENT NUMBER
4600002778/264040
REGISTRATION NUMBER
3860050577729

1. This Agreement is entered into between the State Agency and the Contractor named below:

STATE AGENCY'S NAME
Department of Water Resources/The Reclamation Board

CONTRACTOR'S NAME
Sacramento Area Flood Control Agency

2. The term of this Agreement is: February 15, 2005 through Notice of completion
This Agreement shall not become effective until approved by the Department of General Services.

3. The maximum amount of this Agreement is: $ 46,846,000.00
Forty six million eight hundred forty six thousand dollars and no cents.

4. The parties agree to comply with the terms and conditions of the following exhibits which are by this reference made a part of the Agreement.

See Local Project Cooperation Agreement Between the State of California The Reclamation Board and the Sacramento Area Flood Control Agency for the South Sacramento County Streams Project, which is attached and made a part of this Agreement by this reference.

Signatures appear on page 22 of the Agreement.

IN WITNESS WHEREOF, this Agreement has been executed by the parties hereto.

CONTRACTOR		California Department of General Services Use Only
CONTRACTOR'S NAME *(if other than an individual, state whether a corporation, partnership, etc.)*		APPROVED MAY 19 2005 DEPT OF GENERAL SERVICES
BY *(Authorized Signature)*	DATE SIGNED *(Do not type)*	
PRINTED NAME AND TITLE OF PERSON SIGNING		
ADDRESS		
STATE OF CALIFORNIA		
AGENCY NAME		
BY *(Authorized Signature)*	DATE SIGNED *(Do not type)*	
PRINTED NAME AND TITLE OF PERSON SIGNING		
ADDRESS		

LOCAL PROJECT COOPERATION AGREEMENT

BETWEEN THE STATE OF CALIFORNIA
THE RECLAMATION BOARD
AND
SACRAMENTO AREA FLOOD CONTROL AGENCY
FOR THE
SOUTH SACRAMENTO COUNTY STREAMS PROJECT

This Agreement is entered into by and between The Reclamation Board of the State of California, hereinafter referred to as the "Board," and the Sacramento Area Flood Control Agency, hereinafter referred to as "Local Sponsor," on the _____ day of_____, in view of the following circumstances:

WHEREAS, construction of the San Joaquin River Basin, South Sacramento County Streams Project in Sacramento County, California, hereinafter referred to as the "Project", was authorized by Title I, Section 101(a)(8) of Public Law 106-53 (Water Resources Development Act of 1999); and

WHEREAS, Water Code Sections 8617, 12657 and 12670.14 authorize the State of California, hereinafter referred to as the "State," to cooperate on the South Sacramento County Streams Project, and authorize the Board to give satisfactory assurances to the United States Department of the Army, hereinafter referred to as "the Government," that the required local cooperation will be furnished by the State in connection with the Project; and

WHEREAS, the Board has authority to enter into a Project Cooperation Agreement with the Government and serve as the nonfederal sponsor of the Project on the condition that the Local Sponsor provides the Board with the assurances specified in this Agreement that it will contribute its share of the nonfederal costs of the Project; will be responsible for operation, maintenance, repair, replacement, and rehabilitation of the Project upon its completion; and will, hold and save the Government, the State, and the Board free from all claims and damages arising from the construction, operation, maintenance, repair, replacement, and rehabilitation of the Project. A draft of the PCA to be executed for this project is attached as Exhibit A on page 23 and incorporated by this reference; and

WHEREAS, the Board and the Local Sponsor have the power and authority to do all things required of the nonfederal participants for the Project; and

WHEREAS, the Board may request the Government to accomplish betterments as defined in Article I.J of the PCA and in accordance with Article II.B of the PCA; and

WHEREAS, the Board recognizes that the Local Sponsor has received approval to complete certain portions of the Project pursuant to Section 104 of the Water Resources Development Act of 1986 (PL 99-662), and that the Local Sponsor has provided cash contributions and creditable services to the Government for pre-construction engineering and design of Project features. The Government is conducting an audit to determine the extent to which these contributions are allowable and creditable to the Project.

NOW, THEREFORE, IT IS HEREBY AGREED:

SECTION I: Definitions

The terms defined in Article I of the PCA for the Project shall have the equivalent meaning in this Agreement.

SECTION II: Obligations of the Board and the Local Sponsor

A. The Board will act as nonfederal sponsor of the Project and will provide the assurances of nonfederal cooperation required by the Government for the Project. The Board's obligations as nonfederal sponsor of the Project are set forth in the PCA to be executed for the Project between the Board and the Government. A draft of the PCA is attached on page 23 as Exhibit A and incorporated by this reference.

B. Sites where Project work will be performed are shown on the Site Map, Exhibit A, Attachment 1, which is attached hereto and incorporated by this reference. By agreement of the parties, sites may be modified or added during the course of performance of this Agreement without amendment of this Agreement.

C. As authorized by Water Code Section 12585.5, the Board shall pay 70 percent of the following Project costs in accordance with the terms and conditions set forth in the PCA: the nonfederal capital costs required by Section 103(a) of Public Law 99-662; and the nonfederal design costs required by Section 105(c) of PL 99-662; and the nonfederal capital costs of fish and wildlife mitigation.

D. The Board shall furnish to the Government, according to the terms and conditions of Article III of the PCA, those lands, easements, rights of way, and relocations determined by the Government to be necessary for the construction, operation, maintenance, repair, replacement, and rehabilitation of the Project.

E. The Local Sponsor may request the Board to request the Government to accomplish betterments in accordance with Article II.B of the PCA and Sections II.J.5, IV.J, and IV.K of this Agreement.

F. The Board shall give the Local Sponsor the opportunity to review and comment on all contracts to be carried out in its respective reach, including relevant plans and specifications, prior to the issuance of invitations for bid. To the extent possible, the Board shall give the Local Sponsor the opportunity to review and comment on any modifications in connection with such contracts. The time allotted for plan reviews shall be within the control of the Government. The Board may consider the Local Sponsor's comments, but pursuant to the provisions of Article II.A.1 of the PCA, all work on the Project (whether performed under contract or by Government personnel) shall be exclusively within the control of the Government.

G. The terms of this agreement shall apply to all of the components of this Project including separate construction and mitigation contracts that may be awarded by the Government.

H. The Local Sponsor agrees to assure that construction, operation, maintenance, repair, replacement, and rehabilitation of any nonfederally constructed flood features do not diminish the flood protection afforded by or jeopardize the structural integrity of the Project.

I. The Board and the Local Sponsor agree to work with the affected stakeholders and participate in the CALFED, or successor, multi-agency process to develop and implement a regional flood control solution that extends to the San Joaquin River. This process includes development of an improved regional flood control model of the North Delta area to better assess and quantify the hydraulic impacts upstream of the confluence.

J. The Local Sponsor shall:

1. Pay 30 percent of the following Project costs: the nonfederal capital costs required by Section 103(a), the nonfederal design costs required by Section 105(c) of PL 99-662; and the nonfederal capital costs of fish and wildlife mitigation. If the total nonfederal contribution exceeds fifty percent of total Project costs and the Board receives a refund from the Government in accordance with Article VI.D.2 of the PCA, a proportional share of this refund shall be returned by the Board to the Local Sponsor.

2. Operate, maintain, repair, replace, and rehabilitate the facilities and related features constructed as part of the Project, including any environmental mitigation and monitoring features described in Section V of this Agreement, in accordance with the regulations or directions prescribed by the Secretary of the Army;

3. Hold and save the Government free from all claims and damages arising from the construction, operation, maintenance, repair, replacement, or rehabilitation of the Project, except for claims and damages due to the fault or negligence of the Government or its contractors;

4. Hold, defend, indemnify and save the State and the Board, their officers, agents, and employees, and successors or assigns, to the extent required by State law, free and harmless from any and all claims or damages due to the construction, operation, or maintenance of the Project, including any responsibility for claims or damages arising out of work performed by the Government for which the State or the Board may be held liable under

the terms of the PCA. The Local Sponsor agrees that it will levy and collect assessments or user charges as may be necessary and permissible under State law to satisfy its obligations to the State and the Board as required by this agreement; and

5. Pay the entire cost of betterments requested by the Local Sponsor. Plans and specifications for betterments may be prepared by the Local Sponsor and approved by the Board. Upon such approval, the Board may request the Government to accomplish betterments in accordance with Article II.B of the PCA. The Local Sponsor shall provide all lands, easements, rights of way, and suitable borrow and dredged or excavated material disposal areas and perform relocations associated with such betterments in accordance with Section II of this Agreement. The Local Sponsor will establish a cost accounting system that will separately identify and document all costs attributable to betterments and will provide the Board with the full amount of funds required to pay for betterments in accordance with Section IV of this Agreement and Article VI.C of the PCA.

6. Participate in and comply with applicable federal floodplain management and flood insurance programs.

7. Inform affected interests of the extent of protection afforded by the Project, not less than once each year.

8. Publicize floodplain information in the area concerned and provide this information to zoning and other regulatory agencies for their use in preventing unwise future development in the flood plain and in adopting such regulations as may be necessary to prevent unwise future development and to ensure compatibility with protection levels provided by the Project.

9. Comply with Section 402 of the Water Resources Development Act of 1986, as amended (33 U.S.C. §701b-12), which requires the nonfederal sponsor to have prepared, within one year after the date of signing the PCA, a floodplain management plan. The plan shall be designed to reduce the impacts of future flood events in the project area, including but

not limited to addressing those measures to be undertaken by the Local Sponsor to preserve the level of flood protection provided by this Project. The Local Sponsor shall implement such plan not later than one year after completion of construction of the Project. The Local Sponsor shall provide an information copy of the plan to the Government and the State upon its preparation.

10. Create and administer a $2,000,000 hydraulic mitigation fund for structures in the Beach Lake and Stone Lake drainage basins in Sacramento County. The fund principal may be used as determined by the Local Sponsor either as part of a program of flood-proofing individual structures or as part of a regional program of flood control improvements in the South Sacramento/North Delta area.

K. In order to facilitate nonfederal participation in the Project, the Board and the Local Sponsor agree that the following actions and/or decisions shall be made only upon mutual consent of both the Board and the Local Sponsor:

1. The issuance of a letter to the Government indicating that the nonfederal sponsor is willing to proceed with the Project (PCA Article II.A.1);

2. The decision as to the maximum cumulative financial obligation for construction of the Project (PCA Article II.A.3);

3. The decision to request betterments (PCA Article II.B), provided that the party requesting the betterments will be solely responsible for any additional cost associated with such betterments; and

4. The appointment of representatives to the Project Coordination Team (PCA Article V.A).

L. Subject to the Board's authority in Water Code Section 8710, the Local Sponsor shall prescribe and enforce, to the extent of its powers, regulations preventing obstruction of or encroachment on Project works that would reduce the level of protection afforded or hinder operation, maintenance, repair, replacement, and rehabilitation.

SECTION III: Acquisition of Project Rights of Way

A. On behalf of the Board, the Local Sponsor or its contractors may, upon written approval of the Board, on behalf of the Board, acquire the lands, easements, rights of way (including those required for relocations, borrow material, and/or excavated material disposal) and perform relocations that are necessary for the Project, as determined by the Government, within its area of jurisdiction within the Project's geographic limits. If the Local Sponsor or its contractor provides Project rights of way, it will furnish the personnel, services, and materials necessary to accomplish the following tasks:

1. Final surveying and preparation of legal descriptions of the parcels that are to be acquired for Project rights of way, hereinafter referred to as "all parcels."

2. Preparation of deeds and contracts for all parcels.

3. Appraisal of all parcels.

4. Examination of title to all parcels, including the obtaining of litigation guarantees and/or preliminary reports on title and policies of title insurance.

5. Acquisition of all parcels by deed and contract and/or condemnation by a date, which shall be specified by the Board. For parcels being acquired by condemnation, an Order of Possession shall be deemed "acquisition" for purposes of meeting the above date.

6. Relocation of public utilities, private utilities, and other facilities, as required by the Project, which will not be included in the Government's Project construction contract.

7. Providing relocation assistance for qualified occupants of acquired property, as required by State and federal statutes, rules, and regulations.

B. Board staff shall provide the Local Sponsor with appraisal guidelines, appraisal format, and sample copies of right of way contracts and model easements to be used for acquisition activities.

C. Local Sponsor shall assign and record all easements to all parcels obtained for the project in the name of the Sacramento and San Joaquin Drainage District. The Board shall ensure that the Local Sponsor is able to maintain the Project by, as needed, either granting an easement for operation and maintenance to the Local Sponsor or entering into a joint-use agreement with the Local Sponsor. Any such agreement shall be executed no later than six months after all real estate for the Project has been acquired.

D. If the Local Sponsor uses a contractor to acquire Project rights of way, the acquiring agency shall enter into a written agreement with the contractor for that purpose. The agreement shall be subject to the prior review and approval of the Board and the Department of General Services Office of Real Estate and Design Services. No Project rights of way acquired by a contractor shall be eligible for credit or payment to the acquiring agency unless the contract between acquiring agency and the contractor has been so approved. The contract shall provide for termination of the contractor by acquiring agency upon 30 days written notice.

E. Neither the Local Sponsor nor its contractor shall take steps toward acquiring Project rights of way until notified in writing by the Board to do so.

F. The Local Sponsor acknowledges that pursuant to Article III of the PCA, the Board is obligated to certify to the Government that Project rights of way have been acquired. The date by which the Board's certification will be required will be set by the Government after the PCA and this Agreement have been executed. The Local Sponsor agrees to provide, by no later than 30 days before the date on which certification to the Government is required, a certification to the Board specifying that: (a) the Local Sponsor holds sufficient legal rights to allow Project construction to proceed in the form of fully executed deeds or Superior Court orders for immediate possession; and (b) that the Board, the Government and their contractor's agents are permitted to utilize those legal rights for the purpose of constructing the Project.

G. The actual reasonable costs of Project rights of way incurred by the acquiring agency and its contractors, and their reasonable costs of performance, as defined in this paragraph, shall be eligible for credit toward the Local Sponsor's portion of the nonfederal share of total Project costs. The method of calculating that credit is set forth in Section IV of this Agreement. For purposes of this Agreement, the term "costs of performance" shall include fees and expenses payable to the acquiring agency's contractors pursuant to their contracts; reasonable court costs and attorneys fees incurred in pursuing the acquisition of Project rights of way; title insurance company escrow fees and premiums for title insurance preliminary reports, policies, and litigation guarantees; and engineering fees and other incidental expenses and costs properly attributable to the acquisition of Project rights of way.

H. The acquiring agency shall (1) keep Board staff apprised of its right of way acquisition activities and the activities of its contractors; (2) consult with Board staff on matters concerning compliance with State and federal acquisition rules and regulations; and (3) provide complete access as requested to its records relating to such right of way acquisition. The acquiring agency shall provide to Board staff a copy of all litigation guarantees, preliminary title reports and policies of title insurance reasonably promptly following receipt thereof.

I. If the Local Sponsor is using a contractor to acquire Project rights of way, the contractor's performance shall be subject to review by the Board. If in the opinion of the Board the contractor's performance is not sufficient to allow the Local Sponsor to comply with the terms of this Agreement, then after the Board has consulted with the Local Sponsor regarding its opinion, the Board may request the Local Sponsor to terminate the contractor pursuant to the terms of the Local Sponsor's contract with the contractor.

J. Before the Local Sponsor or its contractor makes a written offer to an owner, the acquiring agency shall provide to Board staff for review and approval the appraisal, proposed right of way contract, and deed for each parcel. The Board's review shall be accomplished and the results reported to the acquiring agency reasonably promptly following receipt of those documents, and in no event later than 30 days following receipt. Before the close of escrow for any parcel, the acquiring agency shall provide to Board staff the memorandum of settlement and

either a litigation guarantee or a preliminary title report. The Department of General Services will review and approve each individual acquisition before the close of escrow, except as provided in Department of General Services Exemption No. 34.3, dated October 1, 1991, and any revisions thereto.

K. The Local Sponsor may elect to purchase lands, easements, and rights of way prior to precise definition of those required for the Project. In accordance with Article IV.A, of the PCA, the Board will provide the Local Sponsor with credits toward the share of total Project costs for the fair market value of Project rights of way. The Local Sponsor will be credited only for the State's share of Project rights of way determined to be eligible for credit under the terms of the PCA. For these reasons, payment to the Local Sponsor for any lands, easements, or rights of way purchased, and relocations made prior to execution of the PCA, and/or prior to final determination by the Government of the extent of land interests necessary for the Project, is subject to adjustment during the final accounting of nonfederal costs shared between the Board and the Local Sponsor. No credit shall be given for lands, easements, and rights of way, which, as determined by the Government, were previously obtained for purposes of a prior project, built in cooperation with the Government. For lands, easements, and rights of way, which were acquired not more than five years prior to the date on which the PCA will be signed, the credit provided hereunder shall include the incidental costs of acquiring the lands, easements, and rights of way.

L. Pursuant to Government Code Section 895.4, the Local Sponsor shall defend, indemnify, and hold the Board harmless from any liability imposed for injury (as defined by Government Code Section 810.8) occurring by reason of anything done or omitted to be done by the Local Sponsor, its officers, agents, and employees under or in connection with any work, authority, or jurisdiction delegated to the Local Sponsor under this Section.

M. In the event any lands, easements, or rights of way acquired by the Local Sponsor are not determined to be eligible for credit under the terms of the PCA and are not used for the Project, such lands, easements or rights of way shall be deemed a remnant and may be sold. Upon the sale of remnant property, the State shall receive 70 percent of the proceeds. Alternatively, the Local Sponsor may elect to retain ownership by paying the State 70 percent of the appraised

value. The Board shall have a right of first refusal on any remnants offered for sale by Local Sponsor. The Board's right of refusal shall remain open for 60 days after Local Sponsor gives written notice.

N. After the Government accepts Project rights of way as mitigation lands for the Project, the State shall receive 70 percent and the Local Sponsor shall receive 30 percent of all net profits from any activity on Project rights of way not required as part of OMRR&R.

SECTION IV: Method of Payment

A. The following table is appended hereto as Exhibit B, Attachment 1 and made a part of this Agreement by this reference: Estimated Costs for South Sacramento County Streams Investigation, California.

B. The Board and the Local Sponsor will establish a cost accounting system that will separately identify and document all nonfederal costs attributable to the Project.

C. The amounts contained in Exhibit B, Attachment 1, are estimates and may change as the design of the Project, the acquisition of rights of way, and construction proceed. The parties agree to make payments during the course of this Project, not to exceed the nonfederal share of the flood control portion of the project's Section 902 cost limit under Article XIX of the PCA. After all contracts awarded by the Government have been completed or terminated and claims settled, a final allocation of the total Project costs will be performed based on the actual costs of the Project.

D. The Parties agree to pay their respective share of Project costs in accordance with Article VI, "Method of Payment" of the PCA, and in accordance with Exhibit B, Budget Detail and Payment Provision, attached hereto and incorporated by this reference. No federal funds may be used to meet the nonfederal share of costs under this Agreement unless the expenditure of such funds is expressly authorized by statute as verified in writing by the federal granting agency.

E. As the Project proceeds, the Board will attempt to maintain, subject to a final accounting, the 70 percent/30 percent cost-sharing ratio of expenditures that is required by Sections II.C and II.J 1 of this Agreement, in the following manner:

1. Cash Payments to the Corps of Engineers - The Board will forward to the Corps of Engineers the cash payments for the nonfederal share of costs of construction contracts as required by Article VI "Method of Payment" of the PCA, and in accordance with Exhibit B. Upon written request by the Board, the Local Sponsor will pay to the Board the Local Sponsor's share of nonfederal costs. The Local Sponsor's share will be 30 percent of the total nonfederal cash payment required for the project, adjusted for other estimated creditable expenditures by the Board and the Local Sponsor so as to maintain an overall 70 percent/30 percent cost sharing.

2. Project Costs incurred by the Local Sponsor – For payment, the Local Sponsor may submit itemized invoices bearing the Agreement Number 4600002778, in triplicate, no more frequently than monthly in arrears, for its Project costs to The Reclamation Board addressed as follows:

   General Manager
   The Reclamation Board
   P.O. Box 942836
   Sacramento, CA 94236-0001

   If the Local Sponsor becomes an acquiring agency for Project rights of way, then the Board will pay or credit the acquiring agency for 70 percent of the expenditures for lands, easements, rights of way, and relocations as determined to be eligible for credit under Project requirements in accordance with the provisions of Article IV of the PCA.

   The Local Sponsor will provide to the Board a summary of actual costs it has incurred for the Project on a quarterly basis each July, October, January, and April, until Project completion. The summary shall separate costs as follows: (1) cash payments, (2) relocation payments included in Corps construction contracts, (3) land costs, and (4) relocations performed by the Local Sponsor.

3. Project Costs incurred by the Board - Upon written request, the Local Sponsor will pay to the Board an amount equal to 30 percent of the Board's expenditures for lands, easements, rights of way, and relocations for its reach of the Project as determined to be eligible for credit under Project requirements in accordance with the provisions of Article IV of the PCA.

F. As set forth in Article I.K and Article II.D.5 of the PCA if the Government credits the State for the federal share or nonfederal share for the cost of the work performed by the Local Sponsor pursuant to Section 104, or for any cash contribution or creditable service provided by the Local Sponsor for this Project, the Board shall credit an equal amount to the Local Sponsor. At its option, the Local Sponsor may use any of these credits in lieu of providing cash payments required in Paragraphs E.1 or E.3 of this Section.

G. The Board and the Local Sponsor share a common goal of maximizing the flexibility with which payments may be made pursuant to this Agreement. The parties intend to cooperate in Project funding based on appropriations available to them. In order that the Project is not delayed due to one party's funding constraints, any party may fund all or any percentage of the Board's financial obligations under the PCA during the course of the Project. The parties agree that payments made in excess of either party's obligation hereunder, including unused credits granted to the Local Sponsor under Section IV. F, shall be subject to reimbursement. Any reimbursement by the State shall be made only upon specific appropriation by the Legislature.

H. The estimated nonfederal cash contribution by federal fiscal year is shown on the appended table. In the event that the Local Sponsor's cash contribution exceeds the State's reimbursement authority in any given year, the Local Sponsor may make payments directly to the Government to meet the required cash contribution in accordance with Article VI of the PCA.

I. If the Government, the State, or the Local Sponsor fail to make timely payments as required in the PCA, this Agreement will be subject to Termination or Suspension under the provisions of Article XIV.A and XIV.B of the PCA.

J. The Local Sponsor will provide the Board with the full amount of funds required to pay for betterments requested by the Local Sponsor in advance of the Government or the Board incurring any financial obligations associated with the requested betterments.

K. If the Local Sponsor fails to provide the Board with its share of the nonfederal obligation either through cash payments or credits, or those funds associated with the betterments requested by the Local Sponsor, this Agreement may be terminated by the Board.

SECTION V: Obligations to Operate, Maintain, Repair, Replace and Rehabilitate

A. Upon completion of the Project or any functional portion thereof as determined by the Government, the Board shall turn the completed Project, including all required lands and rights of way acquired by or on behalf of the Board, over to the Local Sponsor for operation and maintenance as required by Water Code Section 12642 and Section I.J of this Agreement. The turnover will be accompanied by a copy of the Government's Interim Manual for the Operation, Maintenance, Repair, Replacement and Rehabilitation of the Project, as provided by Article VIII of the PCA.

B. If the Local Sponsor has failed or refused to perform the obligations set forth in this Section and that failure or refusal constitutes, in the opinion of the Government or the Board, a threat to the continued ability of that unit of the Project to meet design specifications or the requirements of the Manual, then the Board or Government may perform the necessary work either with their own forces or by contract. The Local Sponsor will reimburse the Board or the Government for the reasonable costs of performing that work.

C. Operation and Maintenance and Monitoring of the Environmental Mitigation Site Compensation for all significant adverse environmental impacts resulting from Project construction may be performed by establishing an environmental mitigation site. In the event a mitigation site is required, it will be considered to be a functional unit of the Project. The Government's contractor shall construct the mitigation site as directed by the Government to meet the mitigation requirements approved for the Project by the Board and the Government. The

Government's contractor shall perform maintenance, which includes irrigation, weed control, and plant replacement, for the three-year plant establishment period prior to acceptance of the work by the Government. When the three-year period has elapsed, the Government shall turn the mitigation site over to the Board for maintenance.

In the event that a mitigation site is required, on or before the date of turnover of the mitigation site, the Board will offer to lease the mitigation site to the California Department of Fish and Game pursuant to Water Code Section 8610. However, if mitigation for the Project is provided by credits purchased from a legally recognized mitigation site or bank, the Board shall not offer such a site or bank to DFG unless otherwise required by law. If DFG agrees to lease the mitigation site, the costs of operation, maintenance, repair, replacement, and rehabilitation of the site may be shared by DFG and the Local Sponsor. If DFG does not agree to lease the site, the Local Sponsor will perform the operation, maintenance, repair, replacement, and rehabilitation of the site and will bear the entire cost of these obligations. The specific work necessary to operate, maintain, repair, replace, and rehabilitate the mitigation will be specified by the Board in accordance with the Manual.

SECTION VI: Disputes

Before either party to this Agreement may bring suit in any court concerning an issue relating to this Agreement, that party must first seek in good faith to resolve the issue through negotiation or other forms of nonbinding alternative dispute resolution mutually acceptable to the parties. Any costs of dispute resolution shall be shared evenly by the parties. The existence of a dispute shall not excuse the parties from performance pursuant to the Agreement.

SECTION VII: Maintenance of Records; Audit

Within 60 days of the date of this Agreement, the Board and the Local Sponsor shall develop procedures for keeping books, records, documents and other evidence pertaining to costs and expenses incurred pursuant to this Agreement to the extent and in such detail as will properly reflect total Project costs. The Board and the Local Sponsor shall maintain such books, records, documents, and other evidence in accordance with these procedures and for a minimum of three years after completion of Project construction and resolution of all relevant claims arising therefrom, and shall make available at their offices at reasonable times, such books, records, documents, and other evidence for inspection and audit by authorized representatives of the parties to this Agreement. Pursuant to California Government Code Section 8546.7, the parties shall be subject to the examination and audit by the State Auditor for the State of California for a period of three years after final payment under this Agreement.

SECTION VIII: Final Accounting

The Board and the Local Sponsor, upon completion or termination of the Project, shall each prepare an accounting of all costs incurred and credits claimed hereunder. This accounting shall be tabulated by the Board and used in reaching a final accounting with the Government and with the Local Sponsor for creditable Project costs.

SECTION IX: Compliance with State and Federal Law

In carrying out the provisions of this Agreement, the Local Sponsor agrees to comply with all applicable federal and State laws and regulations, including: Section 601 of Title VI of the Civil Rights Act of 1964, Public Law 88-352, and Department of Defense Directive 55000.11 issued pursuant thereto and published in Part 300 of Title 32, Code of Federal Regulations; and Army Regulations 600-7, entitled "Non-Discrimination on the Basis of Handicapped in Programs and Activities Assisted or Conducted by the Department of the Army." In acquiring Project rights of way, the Local Sponsor shall comply with the applicable provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, Public Law 91-646, as amended by Title IV of the Surface Transportation and Uniform Relocation Assistance Act of 1987 (Public Law 100-17), and the Uniform Regulations contained in Title 49, Part 24 of the Code of

Federal Regulations, and shall inform all affected persons of applicable benefits, policies, and procedures in connection with said Acts.

SECTION X: Obligation of Future Appropriations

A. Nothing in this Agreement shall constitute, or be deemed to constitute, an obligation of future appropriations by the Legislature of the State of California.

B. The Local Sponsor intends to satisfy its obligations under this Agreement. The Local Sponsor shall include in its budget requests or otherwise propose, for each year, and will use all reasonable and lawful means to secure the appropriations for that year sufficient to make the payments necessary to fulfill its obligations hereunder. The Local Sponsor reasonably believes that funds in amounts sufficient to discharge these obligations can and will lawfully be appropriated and made available for this purpose. In the event the budget or other means of appropriations does not provide funds in sufficient amounts to discharge these obligations, the Local Sponsor shall use its best efforts to satisfy any requirements for payments under this Agreement from any other source of funds legally available for this purpose. Further, if the Local Sponsor is unable to satisfy its obligations hereunder, the State may exercise any legal rights it has to protect the State's interests related to this Agreement.

C. In the event that the State is unable to secure the appropriations for any year sufficient to make the payments necessary to fulfill the State's obligations hereunder, the Local Sponsor shall use its best efforts to satisfy any requirements for payments that are the obligation of the State under this Agreement from any source of funds legally available for this purpose until such time as State funding is appropriated.

SECTION XI: Hazardous Substances

Pursuant to Article XV of the PCA, the Board may incur certain obligations with respect to hazardous substances regulated under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 USC Sections 9601-9675, on lands necessary for Project construction. The Local Sponsor agrees that:

A. In the event that the Government directs the Board to perform or cause to be performed an environmental investigation to identify the existence and extent of any hazardous substances regulated under CERCLA on lands required for Project construction the Board may, after consultation with the Local Sponsor, direct the Local Sponsor to perform or cause to be performed such an environmental investigation. In that event, the Local Sponsor shall consult with the Board concerning the selection of the person or entity to conduct the investigation, the amount of money spent for such investigation, the scope of work, and any other aspect of the investigation.

B. In the event that the Local Sponsor discovers through an environmental investigation or other means that any lands, easements, rights of way, or disposal areas that are to be or that have been acquired or provided for the Project contain hazardous substances regulated under CERCLA, the Local Sponsor shall promptly notify the Board of that discovery and, if not already acquired, shall not proceed or continue with acquisition of those lands, easements, rights of way, or disposal areas until directed to do so by the Board.

During the course of consultation contemplated by PCA Article XV.C, the Board shall consult with the Local Sponsor concerning the initiation of or continuation with Project construction at such site(s).

C. In the event that the Government determines that it will initiate or continue with construction of the Project at any site necessary for Project construction, operation, or maintenance at which hazardous substances regulated under CERCLA have been found, then, at the direction of the Board and after consultation with the Local Sponsor, the Local Sponsor shall initiate and complete any and all necessary response and cleanup activity required under CERCLA, which shall include any studies and investigations necessary to determine the appropriate response to the contamination. Payment for the costs of such necessary response and cleanup activity as required under CERCLA shall be made by the Local Sponsor. In the event that the Local Sponsor fails to provide the funds necessary for response and cleanup activity required under CERCLA or to otherwise discharge the Local Sponsor's responsibilities under this paragraph C, but the Government determines that it will proceed with work at

the site, then the Board may perform the necessary response and cleanup activity, and the Local Sponsor will reimburse the Board for its costs. If the Board performs the necessary response and cleanup activity required under CERCLA, the Board shall consult with the Local Sponsor concerning the selection of the person(s) or entity to perform the work, the amount of money to be spent on the work, the scope of the work, and any other aspect of response and cleanup activity.

D. The Local Sponsor shall consult with the Board, and the Board shall consult with the Government in accordance with Article V of the PCA in order to ensure that responsible persons under CERCLA ultimately bear all necessary response and cleanup costs as defined in CERCLA.

E. The Local Sponsor shall operate, maintain, repair, replace, and rehabilitate the Project in a manner that will control the intentional or negligent release or threatened release of hazardous substances regulated under CERCLA on lands necessary for Project construction.

F. In the event that the Government or the Board are found to be liable under CERCLA for the release or threatened release of hazardous substances arising out of the construction of the Project, then the Local Sponsor shall indemnify the Government or the Board for any response or cleanup costs for which the Government or the Board is found liable under CERCLA, except for such response or cleanup costs which result from negligence of the Government or its contractors during construction.

G. No decision made or action taken pursuant to any provision of this Section of this Agreement shall relieve any responsible person from any liability that may arise under CERCLA, nor shall such decision or action be considered a waiver by the Board or the Local Sponsor of any right to seek from any responsible person as defined by CERCLA the recovery or contribution of or indemnification from costs incurred by the Board or the Local Sponsor for response or cleanup activity required under CERCLA, nor shall such decision or action be considered a waiver by the Board or the Local Sponsor of any other right or remedy provided by law.

H. As between the Board and the Local Sponsor, the Local Sponsor shall be considered the operator of its reach of the Project for purposes of CERCLA liability, except during the periods when the Bureau operates, maintains, repairs, replaces or rehabilitates the Project. To the maximum extent practicable, the Local Sponsor shall operate, maintain, repair, replace, and rehabilitate the Project in a manner that will not cause liability to arise under CERCLA.

SECTION XII: Term of Agreement; Amendment

The term of this Agreement shall be coextensive with that of the PCA, but the Agreement shall not become effective until approved by the California Department of General Services. This Agreement may be amended only upon consent of all parties and the approval of the Department of General Services. If the final PCA executed between the Government and the Board materially differs from the draft PCA that is attached as Exhibit B hereto, the Board and the Local Sponsor agree to renegotiate those provisions of this Agreement that are affected by any changes in the final PCA.

SECTION XIII: Notices

All notices, requests, demands, and other communications required or permitted to be given under this Agreement shall be deemed to have been duly given if in writing and delivered personally or mailed by first-class (postage pre-paid), registered, or certified mail, as follows:

If to The Reclamation Board:

General Manager
The Reclamation Board
P.O. Box 942836
Sacramento, CA 94236-0001

If to SAFCA:

Executive Director
SAFCA
1007 7th Street, 7th Floor
Sacramento, CA 95814-3407

A party may change the address to which such communications are to be directed by giving written notice to the other party in the manner provided in this section.

Any notice, request, demand, or other communication made pursuant to this Section shall be deemed to have been received by the addressee at such time as it is personally delivered or seven calendar days after it is mailed, as the case may be.

SECTION XIV: Standard Clauses

The General Terms and Conditions, GTC 304 attached hereto as Exhibit C, are incorporated by this reference.

The Standard Clauses attached hereto as Exhibit D, Special Terms and Conditions for Department of Water Resources (Local Public Entities Receivables), are incorporated by this reference.

Officials of local agencies determined to be consultants under the Political Reform Act are required to file a Statement of Economic Interests with the Fair Political Practices Commission. The Standard Contract Provisions Regarding Political Reform Act Compliance, attached hereto as Exhibit E, are incorporated by this reference.

SECTION XV: Severability

If any provision of this Agreement is held invalid or unenforceable by any court of final jurisdiction, it is the intent of the parties that all other provisions of this Agreement be construed to remain fully valid, enforceable, and binding on the parties.

IN WITNESS WHEREOF, the Parties hereto have executed this Agreement as of the day and year first above written.

THE RECLAMATION BOARD OF THE STATE OF CALIFORNIA

By Betsy A. Marchand
Betsy A. Marchand, President

Date 4/5/05

APPROVED AS TO LEGAL FORM AND SUFFICIENCY:

By Scott R. Morgan
Scott R. Morgan, Counsel

Date March 29, 2005

SACRAMENTO FLOOD CONTROL AGENCY

By Stein M. Buer
Stein Buer, Executive Director

Date 3/29/05

APPROVED AS TO LEGAL FORM AND SUFFICIENCY:

By Tim Washburn
Tim Washburn, Counsel

Date March 29, 2005

Approved as to legal form and sufficiency:
Asst Chief Counsel, DWR

DRAFT

PROJECT COOPERATION AGREEMENT
BETWEEN
THE DEPARTMENT OF THE ARMY
AND
THE STATE OF CALIFORNIA, THE RECLAMATION BOARD
FOR CONSTRUCTION OF THE
SOUTH SACRAMENTO COUNTY STREAMS, CA,
SAN JOAQUIN RIVER BASIN, FLOOD CONTROL PROJECT

THIS AGREEMENT is entered into this _____ day of _____, 2005, by and between the DEPARTMENT OF THE ARMY (hereinafter the "Government"), represented by the U.S. Army Engineer for Sacramento District, and the STATE OF CALIFORNIA, represented by the President of THE RECLAMATION BOARD (hereinafter the "Non-Federal Sponsor").

WITNESSETH, THAT:

WHEREAS, construction of the San Joaquin River Basin, South Sacramento County Streams project in Sacramento County, California was authorized by Section 101(a)(8) of the Water Resources Development Act of 1999 (Public Law 106-53).

WHEREAS, the Government and the Non-Federal Sponsor desire to enter into a Project Cooperation Agreement for construction of the flood control portion only of the San Joaquin River Basin, South Sacramento County Streams project (hereinafter the "Project", as defined in Article I.A. of this Agreement);

WHEREAS, Section 103 of the Water Resources Development Act of 1986, Public Law 99-662, as amended, specifies the cost-sharing requirements applicable to the Project;

WHEREAS, Section 221 of the Flood Control Act of 1970, Public Law 91-611, as amended, and Section 103 of the Water Resources Development Act of 1986, Public Law 99-662, as amended, provide that the Secretary of the Army shall not commence construction of any water resources project, or separable element thereof, until the Non-Federal Sponsor has entered into a written agreement to furnish its required cooperation for the project or separable element;

WHEREAS, Section 104 of the Water Resources Development Act of 1986, Public Law 99-662 authorizes the Assistant Secretary of the Army (Civil Works) to afford a credit for work accomplished by the Non-Federal Sponsor;

WHEREAS, the Non-Federal Sponsor does not qualify for a reduction of the maximum non-Federal cost share pursuant to the guidelines that implement Section 103(m) of the Water Resources Development Act of 1986, Public Law 99-662, as amended;

WHEREAS, Section 902 of Public Law 99-662 establishes the maximum amount of costs for the South Sacramento County Streams project for flood control, environmental restoration and recreation, and sets forth procedures for adjusting such maximum amount; and

WHEREAS, the Government and Non-Federal Sponsor have the full authority and capability to perform as hereinafter set forth and intend to cooperate in cost-sharing and financing of the construction of the Project in accordance with the terms of this Agreement.

NOW, THEREFORE, the Government and the Non-Federal Sponsor agree as follows:

ARTICLE I - DEFINITIONS AND GENERAL PROVISIONS

For purposes of this Agreement:

A. The term "Project" shall mean providing flood damage reduction to the Morrison Creek stream group and Beach-Stone lakes drainage basins in Sacramento County, CA. The project includes raising and extending the ring levee around the Sacramento Regional Wastewater Treatment Plant; raising the North Beach Lake levee; strengthening and raising levees or floodwalls on Morrison Creek and its major tributaries, Elder, Florin, and Unionhouse Creeks; modifying channels to increase capacity; retrofitting 17 bridges and removing one bridge; and associated environmental mitigation as generally described in the San Joaquin River Basin, South Sacramento County Streams Final Feasibility Report with Appendices,

dated March 1998, and Addendum to Final Feasibility Report dated September 1998, and approved by Chief of Engineers on 6 October, 1998 and the Limited Reevaluation Report approved by the Division Commander on 10 February 2005. The Project includes the Section 104 work described in Article I.K. of this Agreement.

B. The term "total project costs" shall mean all costs incurred by the Non-Federal Sponsor and the Government in accordance with the terms of this Agreement directly related to construction of the Project. Subject to the provisions of this Agreement, the term shall include, but is not necessarily limited to: continuing planning and engineering costs incurred after October 1, 1985; advanced engineering and design costs; preconstruction engineering and design costs; engineering and design costs during construction; the costs of investigations to identify the existence and extent of hazardous substances in accordance with Article XV.A. of this Agreement; costs of historic preservation activities in accordance with Article XVIII.A. of this Agreement; actual construction costs, including the costs of alteration, lowering, raising, or replacement and attendant removal of existing railroad bridges and approaches thereto; the credit amount for the Section 104 work performed by the Non-Federal Sponsor afforded in accordance with Article II.D.5. of this Agreement, supervision and administration costs; costs of participation in the Project Coordination Team in accordance with Article V of this Agreement; costs of contract dispute settlements or awards; the value of lands, easements, rights-of-way, relocations, and suitable borrow and dredged or excavated material disposal areas for which the Government affords credit in accordance with Article IV of this Agreement; and costs of audit in accordance with Article X of this Agreement. The term does not include any costs for operation, maintenance, repair, replacement, or rehabilitation; any costs due to betterments; or any costs of dispute resolution under Article VII of this Agreement.

C. The term "financial obligation for construction" shall mean a financial obligation of the Government, a financial obligation of the Non-Federal Sponsor for Section 104 work, and work other than an obligation pertaining

to the provision of lands, easements, rights-of-way, relocations, and borrow and dredged or excavated material disposal areas, that results or would result in a cost that is or would be included in total project costs.

D. The term "non-Federal proportionate share" shall mean the ratio of the Non-Federal Sponsor's total cash contribution required in accordance with Articles II.D.1. and II.D.3. of this Agreement to total financial obligations for construction, as projected by the Government.

E. The term "period of construction" shall mean the time from the date the Government first notifies the Non-Federal Sponsor in writing, in accordance with Article VI.B. of this Agreement, of the scheduled date for issuance of the solicitation for the first construction contract to the date that the U.S. Army Engineer for the Sacramento District (hereinafter the "District Engineer") notifies the Non-Federal Sponsor in writing of the Government's determination that construction of the Project is complete.

F. The term "highway" shall mean any public highway, roadway, street, or way, including any bridge thereof.

G. The term "relocation" shall mean providing a functionally equivalent facility to the owner of an existing utility, cemetery, highway or other public facility, or railroad (excluding existing railroad bridges and approaches thereto) when such action is authorized in accordance with applicable legal principles of just compensation or as otherwise provided in the authorizing legislation for the Project or any report referenced therein. Providing a functionally equivalent facility may take the form of alteration, lowering, raising, or replacement and attendant removal of the affected facility or part thereof.

H. The term "fiscal year" shall mean one fiscal year of the Government. The Government fiscal year begins on October 1 and ends on September 30.

I. The term "functional portion of the Project" shall mean a portion of the Project that is suitable for tender to the Non-Federal Sponsor to operate and maintain in advance of completion of the entire Project. For a portion

of the Project to be suitable for tender, the District Engineer must notify the Non-Federal Sponsor in writing of the Government's determination that the portion of the Project is complete and can function independently and for a useful purpose, although the balance of the Project is not complete.

J. The term "betterment" shall mean a change in the design and construction of an element of the Project resulting from the application of standards that the Government determines exceed those that the Government would otherwise apply for accomplishing the design and construction of that element.

K. The term "Section 104 work" shall mean the planning, engineering design and construction of the Sacramento Regional Waste Water Treatment Plant ring levee and planning and engineering design of improvements to the North Beach Lake levee and Morrison Creek west levee to Mack Road approved by the Assistant Secretary of the Army (Civil Works) on September 12, 1996, and as described in Chapter 10 of the San Joaquin River Basin, South Sacramento County Streams Final Feasibility Report with Appendices, dated March 1998, and Addendum to Final Feasibility Report dated September 1998 and the Limited Reevaluation Report dated December 2004. The Section 104 work includes construction of the authorized improvements as well as planning, engineering, design, supervision and administration, and other activities associated with construction, but does not include the construction of betterments or the provision of lands, easements, rights-of-way, relocations, or suitable borrow and dredged or excavated material disposal areas associated with the Section 104 work.

ARTICLE II - OBLIGATIONS OF THE GOVERNMENT AND THE NON-FEDERAL SPONSOR

A. The Government, subject to receiving funds appropriated by the Congress of the United States (hereinafter, the "Congress") and using those funds and funds provided by the Non-Federal Sponsor, shall expeditiously construct the Project (including alteration, lowering, raising, or replacement and attendant removal of existing railroad bridges and approaches thereto),

applying those procedures usually applied to Federal projects, pursuant to Federal laws, regulations, and policies.

1. The Government shall afford the Non-Federal Sponsor the opportunity to review and comment on the solicitations for all contracts, including relevant plans and specifications, prior to the Government's issuance of such solicitations. The Government shall not issue the solicitation for the first construction contract until the Non-Federal Sponsor has confirmed in writing their willingness to proceed with the Project. To the extent possible, the Government shall afford the Non-Federal Sponsor the opportunity to review and comment on all contract modifications, including change orders, prior to the issuance to the contractor of a Notice to Proceed. In any instance where providing the Non-Federal Sponsor with notification of a contract modification or change order is not possible prior to issuance of the Notice to Proceed, the Government shall provide such notification in writing at the earliest date possible. To the extent possible, the Government also shall afford the Non-Federal Sponsor the opportunity to review and comment on all contract claims prior to resolution thereof. The Government shall consider in good faith the comments of the Non-Federal Sponsor, but the contents of solicitations, award of contracts, execution of contract modifications, issuance of change orders, resolution of contract claims, and performance of all work on the Project (whether the work is performed under contract or by Government personnel), shall be exclusively within the control of the Government.

2. Throughout the period of construction, the District Engineer shall furnish the Non-Federal Sponsor with a copy of the Government's Written Notice of Acceptance of Completed Work for each contract for the Project.

3. Notwithstanding paragraph A.1. of this Article, if, upon the award of any contract for construction of the Project, cumulative financial obligations for construction would exceed $86,390,000 the Government and the Non-Federal Sponsor agree to defer award of that contract and all

subsequent contracts for construction of the Project until such time as the Government and the Non-Federal Sponsor agree to proceed with further contract awards for the Project, but in no event shall the award of contracts be deferred for more than three years. Notwithstanding this general provision for deferral of contract awards, the Government, after consultation with the Non-Federal Sponsor, may award a contract or contracts after the Assistant Secretary of the Army (Civil Works) makes a written determination that the award of such contract or contracts must proceed in order to comply with law or to protect life or property from imminent and substantial harm.

B. The Non-Federal Sponsor may request the Government to accomplish betterments. Such requests shall be in writing and shall describe the betterments requested to be accomplished. If the Government in its sole discretion elects to accomplish the requested betterments or any portion thereof, it shall so notify the Non-Federal Sponsor in a writing that sets forth any applicable terms and conditions, which must be consistent with this Agreement. In the event of conflict between such a writing and this Agreement, this Agreement shall control. The Non-Federal Sponsor shall be solely responsible for all costs due to the requested betterments and shall pay all such costs in accordance with Article VI.C. of this Agreement.

C. When the District Engineer determines that the entire Project is complete or that a portion of the Project has become a functional portion of the Project, the District Engineer shall so notify the Non-Federal Sponsor in writing and furnish the Non-Federal Sponsor with an Operation, Maintenance, Repair, Replacement, and Rehabilitation Manual (hereinafter the "OMRR&R Manual") and with copies of all of the Government's Written Notices of Acceptance of Completed Work for all contracts for the Project or the functional portion of the Project that have not been provided previously. Upon such notification, the Non-Federal Sponsor shall operate, maintain, repair, replace, and rehabilitate the entire Project or the functional portion of the Project in accordance with Article VIII of this Agreement.

D. The Non-Federal Sponsor shall contribute a minimum of 35 percent, but not to exceed 50 percent, of total project costs in accordance with the provisions of this paragraph.

1. The Non-Federal Sponsor shall provide a cash contribution equal to five percent of total project costs in accordance with Article VI.B. of this Agreement.

2. In accordance with Article III of this Agreement, the Non-Federal Sponsor shall provide all lands, easements, rights-of-way, and suitable borrow and dredged or excavated material disposal areas that the Government determines the Non-Federal Sponsor must provide for the construction, operation, and maintenance of the Project, and shall perform or ensure performance of all relocations that the Government determines to be necessary for the construction, operation, and maintenance of the Project.

3. If the Government projects that the value of the Non-Federal Sponsor's contributions under paragraphs D.1. and D.2. of this Article and Articles V, X, and XV.A. of this Agreement will be less than 35 percent of total project costs, the Non-Federal Sponsor shall provide an additional cash contribution, in accordance with Article VI.B. of this Agreement, in the amount necessary to make the Non-Federal Sponsor's total contribution equal to 35 percent of total project costs.

4. If the Government determines that the value of the Non-Federal Sponsor's contributions provided under paragraphs D.2. and D.3. of this Article and Articles V, X, and XV.A. of this Agreement has exceeded 45 percent of total project costs, the Government, subject to the availability of funds, shall reimburse the Non-Federal Sponsor for any such value in excess of 45 percent of total project costs. After such a determination, the Government, in its sole discretion, may provide any remaining Project lands, easements, rights-of-way, and suitable borrow and dredged or excavated material disposal

areas and perform any remaining Project relocations on behalf of the Non-Federal Sponsor.

5. The Congress, in authorizing the Project, included authority for the Assistant Secretary of the Army (Civil Works) to afford credit for Section 104 work in the estimated amount of $ 5,910,000. The affording of such credit shall be subject to an on-site inspection by the Government to verify that the work was accomplished in a satisfactory manner and is suitable for inclusion in the Project. The actual amount of credit shall be subject to an audit in accordance with Article X.C. of this Agreement to determine reasonableness, allocability, and allowability of costs. To afford such credit, the Government shall apply the credit amount toward any additional cash contribution required under paragraph D.3. of this Article. If the credit amount exceeds the amount of such additional cash contribution, the Government, subject to the availability of funds, shall, on behalf of the Non-Federal Sponsor, provide Project lands, easements, rights-of-way, and suitable borrow and dredged or excavated material disposal areas, or perform Project relocations, equal in value to such excess credit amount. As an alternative, and in its sole discretion, the Government may make a payment to the Non-Federal Sponsor in an amount equal to such excess credit amount, up to the value of contributions under paragraph D.2. of this Article and Articles V, X, and XV.A. of this Agreement. In no event shall the credit amount afforded exceed the lesser of 45 percent of total project costs or the value of the Non-Federal Sponsor's contributions required under paragraphs D.2. and D.3. of this Article and Articles V, X, and XV.A. of this Agreement.

E. The Non-Federal Sponsor may request the Government to provide lands, easements, rights-of-way, and suitable borrow and dredged or excavated material disposal areas or perform relocations on behalf of the Non-Federal Sponsor. Such requests shall be in writing and shall describe the services requested to be performed. If in its sole discretion the Government elects

to perform the requested services or any portion thereof, it shall so notify the Non-Federal Sponsor in a writing that sets forth any applicable terms and conditions, which must be consistent with this Agreement. In the event of conflict between such a writing and this Agreement, this Agreement shall control. The Non-Federal Sponsor shall be solely responsible for all costs of the requested services and shall pay all such costs in accordance with Article VI.C. of this Agreement. Notwithstanding the provision of lands, easements, rights-of-way, and suitable borrow and dredged or excavated material disposal areas or performance of relocations by the Government, the Non-Federal Sponsor shall be responsible, as between the Government and the Non-Federal Sponsor, for the costs of cleanup and response in accordance with Article XV.C. of this Agreement.

F. The Government shall perform a final accounting in accordance with Article VI.D. of this Agreement to determine the contributions provided by the Non-Federal Sponsor in accordance with paragraphs B., D., and E. of this Article and Articles V, X, and XV.A. of this Agreement and to determine whether the Non-Federal Sponsor has met its obligations under paragraphs B., D., and E. of this Article.

G. The Non-Federal Sponsor shall not use Federal funds to meet the Non-Federal Sponsor's share of total project costs under this Agreement unless the Federal granting agency verifies in writing that the expenditure of such funds is expressly authorized by statute.

H. The Non-Federal Sponsor agrees to participate in and comply with applicable Federal floodplain management and flood insurance programs.

I. Not less than once each year the Non-Federal Sponsor shall inform affected interests of the extent of protection afforded by the Project.

J. The Non-Federal Sponsor shall publicize flood plain information in the area concerned and shall provide this information to zoning and other regulatory agencies for their use in preventing unwise future development in the flood plain and in adopting such regulations as may be necessary to prevent

unwise future development and to ensure compatibility with protection levels provided by the Project.

K. The Non-Federal Sponsor shall comply with Section 402 of the Water Resources Development Act of 1986, as amended (33 U.S.C. 701b-12), which requires a Non-Federal interest to have prepared within one year after the date of signing this Agreement, a floodplain management plan. The plan shall be designed to reduce the impacts of future flood events in the project area, including but not limited to, addressing those measures to be undertaken by Non-Federal interests to preserve the level of flood protection provided by this Project. As required by Section 402, as amended, the Non-Federal interest shall implement such plan not later than one year after completion of construction of the Project. The Non-Federal Sponsor shall provide an information copy of the plan to the Government upon its preparation.

ARTICLE III - LANDS, RELOCATIONS, DISPOSAL AREAS, AND PUBLIC LAW 91-646 COMPLIANCE

A. The Government, after consultation with the Non-Federal Sponsor, shall determine the lands, easements, and rights-of-way required for the construction, operation, and maintenance of the Project, including those required for relocations, borrow materials, and dredged or excavated material disposal. The Government in a timely manner shall provide the Non-Federal Sponsor with general written descriptions, including maps as appropriate, of the lands, easements, and rights-of-way that the Government determines the Non-Federal Sponsor must provide, in detail sufficient to enable the Non-Federal Sponsor to fulfill their obligations under this paragraph, and shall provide the Non-Federal Sponsor with a written notice to proceed with acquisition of such lands, easements, and rights-of-way. Prior to the end of the period of construction, the Non-Federal Sponsor shall acquire all lands, easements, and rights-of-way set forth in such descriptions. Furthermore, prior to issuance of the solicitation for each construction contract, the Non-Federal Sponsor shall provide the Government with authorization for entry to all lands, easements, and rights-of-way the Government determines the Non-Federal Sponsor must provide

for that contract. For so long as the Project remains authorized, the Non-Federal Sponsor shall ensure that lands, easements, and rights-of-way that the Government determines to be required for the operation and maintenance of the Project and that were provided by the Non-Federal Sponsor are retained in public ownership for uses compatible with the authorized purposes of the Project.

B. The Government, after consultation with the Non-Federal Sponsor, shall determine the improvements required on lands, easements, and rights-of-way to enable the proper disposal of dredged or excavated material associated with the construction, operation, and maintenance of the Project. Such improvements may include, but are not necessarily limited to, retaining dikes, wasteweirs, bulkheads, embankments, monitoring features, stilling basins, and de-watering pumps and pipes. The Government in a timely manner shall provide the Non-Federal Sponsor with general written descriptions of such improvements in detail sufficient to enable the Non-Federal Sponsor to fulfill its obligations under this paragraph, and shall provide the Non-Federal Sponsor with a written notice to proceed with construction of such improvements. Prior to the end of the period of construction, the Non-Federal Sponsor shall provide all improvements set forth in such descriptions. Furthermore, prior to issuance of the solicitation for each Government construction contract, the Non-Federal Sponsor shall prepare plans and specifications for all improvements the Government determines to be required for the proper disposal of dredged or excavated material under that contract, submit such plans and specifications to the Government for approval, and provide such improvements in accordance with the approved plans and specifications.

C. The Government, after consultation with the Non-Federal Sponsor, shall determine the relocations necessary for the construction, operation, and maintenance of the Project, including those necessary to enable the removal of borrow materials and the proper disposal of dredged or excavated material. The Government in a timely manner shall provide the Non-Federal Sponsor with general written descriptions, including maps as appropriate, of such relocations in detail sufficient to enable the Non-Federal Sponsor to fulfill its obligations under this paragraph, and shall

provide the Non-Federal Sponsor with a written notice to proceed with such relocations. Prior to the end of the period of construction, the Non-Federal Sponsor shall perform or ensure the performance of all relocations as set forth in such descriptions. Furthermore, prior to issuance of the solicitation for each Government construction contract, the Non-Federal Sponsor shall prepare or ensure the preparation of plans and specifications for, and perform or ensure the performance of, all relocations the Government determines to be necessary for that contract.

D. The Non-Federal Sponsor in a timely manner shall provide the Government with such documents as are sufficient to enable the Government to determine the value of any contribution provided pursuant to paragraphs A., B., or C. of this Article. Upon receipt of such documents the Government, in accordance with Article IV of this Agreement and in a timely manner, shall determine the value of such contribution, include such value in total project costs, and afford credit for such value toward the Non-Federal Sponsor's share of total project costs.

E. The Non-Federal Sponsor shall comply with the applicable provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, Public Law 91-646, as amended by Title IV of the Surface Transportation and Uniform Relocation Assistance Act of 1987 (Public Law 100-17), and the Uniform Regulations contained in 49 C.F.R. Part 24, in acquiring lands, easements, and rights-of-way required for the construction, operation, and maintenance of the Project, including those necessary for relocations, borrow materials, and dredged or excavated material disposal, and shall inform all affected persons of applicable benefits, policies, and procedures in connection with said Act.

ARTICLE IV - CREDIT FOR VALUE OF LANDS, RELOCATIONS, AND DISPOSAL AREAS

A. The Non-Federal Sponsor shall receive credit toward its share of total project costs for the value of the lands, easements, rights-of-way, and

suitable borrow and dredged or excavated material disposal areas that the Non-Federal Sponsor must provide pursuant to Article III of this Agreement, and for the value of the relocations that the Non-Federal Sponsor must perform or for which it must ensure performance pursuant to Article III of this Agreement. However, the Non-Federal Sponsor shall not receive credit for the value of any lands, easements, rights-of-way, relocations, or borrow and dredged or excavated material disposal areas that have been provided previously as an item of cooperation for another Federal project. The Non-Federal Sponsor also shall not receive credit for the value of lands, easements, rights-of-way, relocations, or borrow and dredged or excavated material disposal areas to the extent that such items are provided using Federal funds unless the Federal granting agency verifies in writing that such credit is expressly authorized by statute.

B. For the sole purpose of affording credit in accordance with this Agreement, the value of lands, easements, and rights-of-way, including those necessary for relocations, borrow materials, and dredged or excavated material disposal, shall be the fair market value of the real property interests, plus certain incidental costs of acquiring those interests, as determined in accordance with the provisions of this paragraph.

1. Date of Valuation. The fair market value of lands, easements, or rights-of-way owned by the Non-Federal Sponsor on the effective date of this Agreement shall be the fair market value of such real property interests as of the date the Non-Federal Sponsor provides the Government with authorization for entry thereto. However, for lands, easements, or rights-of-way owned by the Non-Federal Sponsor on the effective date of this Agreement that are required for the construction of the Section 104 work, fair market value shall be the value of such real property interests as of the date the Non-Federal Sponsor awards the first construction contract for the Section 104 work, or, if the Non-Federal Sponsor performs the construction with their own labor, the date that the Non-Federal Sponsor begins construction of the Section 104 work. The fair market value of lands, easements, or rights-of-way acquired by the

Non-Federal Sponsor after the effective date of this Agreement shall be the fair market value of such real property interests at the time the interests are acquired.

2. General Valuation Procedure. Except as provided in paragraph B.3. of this Article, the fair market value of lands, easements, or rights-of-way shall be determined in accordance with paragraph B.2.a. of this Article, unless thereafter a different amount is determined to represent fair market value in accordance with paragraph B.2.b. of this Article.

   a. The Non-Federal Sponsor shall obtain, for each real property interest, an appraisal that is prepared by a qualified appraiser who is acceptable to the Non-Federal Sponsor and the Government. The appraisal must be prepared in accordance with the applicable rules of just compensation, as specified by the Government. The fair market value shall be the amount set forth in the Non-Federal Sponsor's appraisal, if such appraisal is approved by the Government. In the event the Government does not approve the Non-Federal Sponsor's appraisal, the Non-Federal Sponsor may obtain a second appraisal, and the fair market value shall be the amount set forth in the Non-Federal Sponsor's second appraisal, if such appraisal is approved by the Government. In the event the Government does not approve the Non-Federal Sponsor's second appraisal, or the Non-Federal Sponsor chooses not to obtain a second appraisal, the Government shall obtain an appraisal, and the fair market value shall be the amount set forth in the Government's appraisal, if such appraisal is approved by the Non-Federal Sponsor. In the event the Non-Federal Sponsor does not approve the Government's appraisal, the Government, after consultation with the Non-Federal Sponsor, shall consider the Government's and the Non-Federal Sponsor's appraisals and determine an amount based thereon, which shall be deemed to be the fair market value.

b. Where the amount paid or proposed to be paid by the Non-Federal Sponsor for the real property interest exceeds the amount determined pursuant to paragraph B.2.a. of this Article, the Government, at the request of the Non-Federal Sponsor, shall consider all factors relevant to determining fair market value and, in its sole discretion, after consultation with the Non-Federal Sponsor, may approve in writing an amount greater than the amount determined pursuant to paragraph B.2.a. of this Article, but not to exceed the amount actually paid or proposed to be paid. If the Government approves such an amount, the fair market value shall be the lesser of the approved amount or the amount paid by the Non-Federal Sponsor, but no less than the amount determined pursuant to paragraph B.2.a. of this Article.

3. Eminent Domain Valuation Procedure. For lands, easements, or rights-of-way acquired by eminent domain proceedings instituted after the effective date of this Agreement, the Non-Federal Sponsor shall, prior to instituting such proceedings, submit to the Government notification in writing of its intent to institute such proceedings and an appraisal of the specific real property interests to be acquired in such proceedings. The Government shall have 60 days after receipt of such a notice and appraisal within which to review the appraisal, if not previously approved by the Government in writing.

a. If the Government previously has approved the appraisal in writing, or if the Government provides written approval of, or takes no action on, the appraisal within such 60-day period, the Non-Federal Sponsor shall use the amount set forth in such appraisal as the estimate of just compensation for the purpose of instituting the eminent domain proceeding.

b. If the Government provides written disapproval of the appraisal, including the reasons for disapproval, within such 60-day period, the Government and the Non-Federal Sponsor shall consult in good faith to promptly resolve the issues or

areas of disagreement that are identified in the Government's written disapproval. If, after such good faith consultation, the Government and the Non-Federal Sponsor agree as to an appropriate amount, then the Non-Federal Sponsor shall use that amount as the estimate of just compensation for the purpose of instituting the eminent domain proceeding. If, after such good faith consultation, the Government and the Non-Federal Sponsor cannot agree as to an appropriate amount, then the Non-Federal Sponsor may use the amount set forth in its appraisal as the estimate of just compensation for the purpose of instituting the eminent domain proceeding.

c. For lands, easements, or rights-of-way acquired by eminent domain proceedings instituted in accordance with sub-paragraph B.3. of this Article, fair market value shall be either the amount of the court award for the real property interests taken, to the extent the Government determined such interests are required for the construction, operation, and maintenance of the Project, or the amount of any stipulated settlement or portion thereof that the Government approves in writing.

4. Incidental Costs. For lands, easements, or rights-of-way acquired by the Non-Federal Sponsor within a five-year period preceding the effective date of this Agreement, or at any time after the effective date of this Agreement, the value of the interest shall include the documented incidental costs of acquiring the interest, as determined by the Government, subject to an audit in accordance with Article X.C. of this Agreement to determine reasonableness, allocability, and allowability of costs. Such incidental costs shall include, but not necessarily be limited to, closing and title costs, appraisal costs, survey costs, attorney's fees, plat maps, and mapping costs, as well as the actual amounts expended for payment of any Public Law 91-646 relocation assistance benefits provided in accordance with Article III.E. of this Agreement.

C. After consultation with the Non-Federal Sponsor, the Government shall determine the value of relocations in accordance with the provisions of this paragraph.

1. For a relocation other than a highway, the value shall be only that portion of relocation costs that the Government determines is necessary to provide a functionally equivalent facility, reduced by depreciation, as applicable, and by the salvage value of any removed items.

2. For a relocation of a highway, the value shall be only that portion of relocation costs that would be necessary to accomplish the relocation in accordance with the design standard that the State of California would apply under similar conditions of geography and traffic load, reduced by the salvage value of any removed items.

3. Relocation costs shall include, but not necessarily be limited to, actual costs of performing the relocation; planning, engineering and design costs; supervision and administration costs; and documented incidental costs associated with performance of the relocation, but shall not include any costs due to betterments, as determined by the Government, nor any additional cost of using new material when suitable used material is available. Relocation costs shall be subject to an audit in accordance with Article X.C. of this Agreement to determine reasonableness, allocability, and allowability of costs.

4. Any credit afforded for the value of relocations performed within the Project boundaries is subject to satisfactory compliance with applicable Federal labor laws covering non-Federal construction, including, but not limited to, 40 U.S.C. 3141-3148 and 40 U.S.C. 3701-3708 (revising, codifying and enacting without substantive change the provisions of the Davis-Bacon Act (formerly 40 U.S.C. 276a et seq.), the Contract Work Hours and Safety Standards Act (formerly 40 U.S.C. 327 et seq.) and the Copeland Anti-Kickback

Act (formerly 40 U.S.C. 276c)). Crediting may be withheld, in whole or in part, as a result of the Non-Federal Sponsor's failure to comply with its obligations under these laws.

D. The value of the improvements made to lands, easements, and rights-of-way for the proper disposal of dredged or excavated material shall be the costs of the improvements, as determined by the Government, subject to an audit in accordance with Article X.C. of this Agreement to determine reasonableness, allocability, and allowability of costs. Such costs shall include, but not necessarily be limited to, actual costs of providing the improvements; planning, engineering and design costs; supervision and administration costs; and documented incidental costs associated with providing the improvements, but shall not include any costs due to betterments, as determined by the Government.

ARTICLE V - PROJECT COORDINATION TEAM

A. To provide for consistent and effective communication, the Non-Federal Sponsor and the Government, not later than 30 days after the effective date of this Agreement, shall appoint named senior representatives to a Project Coordination Team. Thereafter, the Project Coordination Team shall meet regularly until the end of the period of construction. The Government's Project Manager and a counterpart named by the Non-Federal Sponsor shall co-chair the Project Coordination Team.

B. The Government's Project Manager and the Non-Federal Sponsor's counterpart shall keep the Project Coordination Team informed of the progress of construction and of significant pending issues and actions, and shall seek the views of the Project Coordination Team on matters that the Project Coordination Team generally oversees.

C. Until the end of the period of construction, the Project Coordination Team shall generally oversee the Project, including issues related to design; plans and specifications; scheduling; real property and relocation requirements; real property acquisition; contract awards and modifications; contract costs;

the application of and compliance with 40 U.S.C. 3141-3148 and 40 U.S.C. 3701-3708 (revising, codifying and enacting without substantive change the provisions of the Davis-Bacon Act (formerly 40 U.S.C. 276a et seq.), the Contract Work Hours and Safety Standards Act (formerly 40 U.S.C. 327 et seq.) and the Copeland Anti-Kickback Act (formerly 40 U.S.C. 276c)) for relocations; the Government's cost projections; final inspection of the entire Project or functional portions of the Project; preparation of the proposed OMRR&R Manual; anticipated requirements and needed capabilities for performance of operation, maintenance, repair, replacement, and rehabilitation of the Project; and other related matters. This oversight shall be consistent with a project management plan developed by the Government after consultation with the Non-Federal Sponsor.

D. The Project Coordination Team may make recommendations that it deems warranted to the District Engineer on matters that the Project Coordination Team generally oversees, including suggestions to avoid potential sources of dispute. The Government in good faith shall consider the recommendations of the Project Coordination Team. The Government, having the legal authority and responsibility for construction of the Project, has the discretion to accept, reject, or modify the Project Coordination Team's recommendations.

E. The costs of participation in the Project Coordination Team shall be included in total project costs and cost shared in accordance with the provisions of this Agreement.

ARTICLE VI - METHOD OF PAYMENT

A. The Government shall maintain current records of contributions provided by the parties and current projections of total project costs and costs due to betterments. By **April 1st** of each year and at least quarterly thereafter, the Government shall provide the Non-Federal Sponsor with a report setting forth all contributions provided to date and the current projections of total project costs, of total costs due to betterments, of the maximum amount of total project costs determined in accordance with Article XIX of this

Agreement, of the components of total project costs, of each party's share of total project costs, of the Non-Federal Sponsor's total cash contributions required in accordance with Articles II.B., II.D., and II.E. of this Agreement, of the non-Federal proportionate share, and of the funds the Government projects to be required from the Non-Federal Sponsor for the upcoming fiscal year. On the effective date of this Agreement, total project costs are projected to be $86,390,000 and the Non-Federal Sponsor's cash contribution required under Article II.D. of this Agreement is projected to be $21,747,000. Such amounts are estimates subject to adjustment by the Government and are not to be construed as the total financial responsibilities of the Government and the Non-Federal Sponsor.

B. The Non-Federal Sponsor shall provide the cash contribution required under Articles II.D.1. and II.D.3. of this Agreement in accordance with the provisions of this paragraph.

1. Not less than 30 calendar days prior to the scheduled date for issuance of the solicitation for the first construction contract, the Government shall notify the Non-Federal Sponsor in writing of such scheduled date and the funds the Government, after consideration of any credit afforded pursuant to Article II.D.5. of this Agreement, determines to be required from the Non-Federal Sponsor to meet the non-Federal proportionate share of projected financial obligations for construction on a quarterly basis, including the non-Federal proportionate share of financial obligations for construction incurred prior to the commencement of the period of construction. Not later than such scheduled date, the Non-Federal Sponsor shall provide the Government with the full amount of the required funds by delivering a check payable to "FAO, USAED, Sacramento" to the District Engineer or verifying to the satisfaction of the Government that the Non-Federal Sponsor has deposited the required funds in an escrow or other account acceptable to the Government, with interest accruing to the Non-Federal Sponsor or presenting the Government with an irrevocable letter of credit acceptable to the Government for the required funds or providing an Electronic Funds Transfer in accordance with procedures established by the Government.

2. For the second and subsequent quarters of construction, the Government shall notify the Non-Federal Sponsor in writing, no later than 60 calendar days prior to the beginning of that quarter, of the funds the Government, after consideration of any credit afforded pursuant to Article II.D.5. of this Agreement, determines to be required from the Non-Federal Sponsor to meet the non-Federal proportionate share of projected financial obligations for construction for that quarter. No later than 30 calendar days prior to the beginning of the quarter, the Non-Federal Sponsor shall make the full amount of the required funds for that quarter available to the Government through any of the payment mechanisms specified in Article VI.B.1. of this Agreement.

3. The Government shall draw from the funds provided by the Non-Federal Sponsor such sums as the Government, after consideration of any credit afforded pursuant to Article II.D.5.and of this Agreement, deems necessary to cover: (a) the non-Federal proportionate share of financial obligations for construction incurred prior to the commencement of the period of construction; and (b) the non-Federal proportionate share of financial obligations for construction as they are incurred during the period of construction.

4. If at any time during the period of construction the Government determines that additional funds will be needed from the Non-Federal Sponsor to cover the non-Federal proportionate share of projected financial obligations for construction for the current quarter, the Government shall notify the Non-Federal Sponsor in writing of the additional funds required, and provide an explanation of why additional funds are required, and the Non-Federal Sponsor, no later than **60** calendar days from receipt of such notice, shall make the additional required funds for that quarter available through any of the payment mechanisms specified in Article VI.B.1. of this Agreement.

C. In advance of the Government incurring any financial obligation associated with additional work under Article II.B. or II.E. of this Agreement, the Non-

Federal Sponsor shall provide the Government with the full amount of the funds required to pay for such additional work on a quarterly basis by delivering a check payable to "FAO, USAED, Sacramento" to the District Engineer. The Government shall draw from the funds provided by the Non-Federal Sponsor such sums as the Government deems necessary to cover the Government's financial obligations for such additional work as they are incurred. In the event the Government determines that the Non-Federal Sponsor must provide additional funds to meet its cash contribution, the Government shall notify the Non-Federal Sponsor in writing of the additional funds required. Within 30 calendar days thereafter, the Non-Federal Sponsor shall provide the Government with a check for the full amount for that quarter of the additional required funds.

D. Upon completion of the Project or termination of this Agreement, and upon resolution of all relevant claims and appeals, the Government shall conduct a final accounting and furnish the Non-Federal Sponsor with the results of the final accounting. The final accounting shall determine total project costs, each party's contribution provided thereto, and each party's required share thereof. The final accounting also shall determine costs due to betterments and the Non-Federal Sponsor's cash contribution provided pursuant to Article II.B. of this Agreement.

1. In the event the final accounting shows that the total contribution provided by the Non-Federal Sponsor is less than its required share of total project costs plus costs due to any betterments provided in accordance with Article II.B. of this Agreement, the Non-Federal Sponsor shall, no later than 90 calendar days after receipt of written notice, make a cash payment to the Government of whatever sum is required to meet the Non-Federal Sponsor's required share of total project costs plus costs due to any betterments provided in accordance with Article II.B. of this Agreement.

2. In the event the final accounting shows that the total contribution provided by the Non-Federal Sponsor exceeds its required share of total project costs plus costs due to any betterments provided in

accordance with Article II.B. of this Agreement, the Government shall, subject to the availability of funds, refund the excess to the Non-Federal Sponsor no later than 90 calendar days after the final accounting is complete; however, the Non-Federal Sponsor shall not be entitled to any refund of the 5 percent cash contribution required pursuant to Article II.D.1. of this Agreement. In the event existing funds are not available to refund the excess to the Non-Federal Sponsor, the Government shall seek such appropriations as are necessary to make the refund.

ARTICLE VII - DISPUTE RESOLUTION

As a condition precedent to a party bringing any suit for breach of this Agreement, that party must first notify the other party in writing of the nature of the purported breach and seek in good faith to resolve the dispute through negotiation. If the parties cannot resolve the dispute through negotiation, they may agree to a mutually acceptable method of non-binding alternative dispute resolution with a qualified third party acceptable to both parties. The parties shall each pay 50 percent of any costs for the services provided by such a third party as such costs are incurred. The existence of a dispute shall not excuse the parties from performance pursuant to this Agreement.

ARTICLE VIII - OPERATION, MAINTENANCE, REPAIR, REPLACEMENT, AND REHABILITATION (OMRR&R)

A. Upon notification in accordance with Article II.C. of this Agreement and for so long as the Project remains authorized, the Non-Federal Sponsor shall operate, maintain, repair, replace, and rehabilitate the entire Project or the functional portion of the Project, at no cost to the Government, in a manner compatible with the Project's authorized purposes and in accordance with applicable Federal and State laws as provided in Article XI of this Agreement and specific directions prescribed by the Government in the OMRR&R Manual and any subsequent amendments thereto.

B. The Non-Federal Sponsor hereby gives the Government a right to enter, at reasonable times and in a reasonable manner, upon property that the Non-Federal Sponsor owns or controls for access to the Project for the purpose

of inspection and, if necessary, for the purpose of completing, operating, maintaining, repairing, replacing, or rehabilitating the Project. If an inspection shows that the Non-Federal Sponsor for any reason is failing to perform its obligations under this Agreement, the Government shall send a written notice describing the non-performance to the Non-Federal Sponsor. If, after 30 calendar days from receipt of notice, the Non-Federal Sponsor continues to fail to perform, then the Government shall have the right to enter, at reasonable times and in a reasonable manner, upon property that the Non-Federal Sponsor owns or controls for access to the Project for the purpose of completing, operating, maintaining, repairing, replacing, or rehabilitating the Project. No completion, operation, maintenance, repair, replacement, or rehabilitation by the Government shall operate to relieve the Non-Federal Sponsor of responsibility to meet the Non-Federal Sponsor's obligations as set forth in this Agreement, or to preclude the Government from pursuing any other remedy at law or equity to ensure faithful performance pursuant to this Agreement.

ARTICLE IX - INDEMNIFICATION

The Non-Federal Sponsor shall hold and save the Government free from all damages arising from the construction, operation, maintenance, repair, replacement, and rehabilitation of the Project and any Project related betterments, except for damages due to the fault or negligence of the Government or its contractors.

ARTICLE X - MAINTENANCE OF RECORDS AND AUDIT

A. Not later than 60 calendar days after the effective date of this Agreement, the Government and the Non-Federal Sponsor shall develop procedures for keeping books, records, documents, and other evidence pertaining to costs and expenses incurred pursuant to this Agreement. These procedures shall incorporate, and apply as appropriate, the standards for financial management systems set forth in the Uniform Administrative Requirements for Grants and Cooperative Agreements to State and Local Governments at 32 C.F.R. Section 33.20. The Government and the Non-Federal Sponsor shall maintain such books, records, documents, and other evidence in accordance with these procedures and for a minimum of three years after

the period of construction and resolution of all relevant claims arising therefrom. To the extent permitted under applicable Federal laws and regulations, the Government and the Non-Federal Sponsor shall allow mutual examination and audit of books, documents, records, and other evidence for a period of three years after final payment of this agreement.

B. Pursuant to 32 C.F.R. Section 33.26, the Non-Federal Sponsor is responsible for complying with the Single Audit Act of 1984, 31 U.S.C. Sections 7501-7507, as implemented by Office of Management and Budget (OMB) Circular No. A-133 and Department of Defense Directive 7600.10. Upon request of the Non-Federal Sponsor and to the extent permitted under applicable Federal laws and regulations, the Government shall provide to the Non-Federal Sponsor and independent auditors any information necessary to enable an audit of the Non-Federal Sponsor's activities under this Agreement. The costs of any non-Federal audits performed in accordance with this paragraph shall be allocated in accordance with the provisions of OMB Circulars A-87 and A-133, and such costs as are allocated to the Project shall be included in total project costs and cost shared in accordance with the provisions of this Agreement.

C. In accordance with 31 U.S.C. Section 7503, the Government may conduct audits in addition to any audit that the Non-Federal Sponsor is required to conduct under the Single Audit Act. Any such Government audits shall be conducted in accordance with Government Auditing Standards and the cost principles in OMB Circular No. A-87 and other applicable cost principles and regulations. The costs of Government audits performed in accordance with this paragraph shall be included in total project costs and cost shared in accordance with the provisions of this Agreement.

ARTICLE XI - FEDERAL AND STATE LAWS

In the exercise of their respective rights and obligations under this Agreement, the Non-Federal Sponsor and the Government agree to comply with all applicable Federal and State laws and regulations, including, but not limited to: Section 601 of the Civil Rights Act of 1964, Public Law 88-352 (42 U.S.C. 2000d) and Department of Defense Directive 5500.11 issued pursuant thereto; Army Regulation 600-7, entitled

"Nondiscrimination on the Basis of Handicap in Programs and Activities Assisted or Conducted by the Department of the Army"; and all applicable Federal labor standards requirements including, but not limited to, 40 U.S.C. 3141-3148 and 40 U.S.C. 3701-3708 (revising, codifying and enacting without substantive change the provisions of the Davis-Bacon Act (formerly 40 U.S.C. 276a et seq.), the Contract Work Hours and Safety Standards Act (formerly 40 U.S.C. 327 et seq.) and the Copeland Anti-Kickback Act (formerly 40 U.S.C. 276c)).

ARTICLE XII - RELATIONSHIP OF PARTIES

A. In the exercise of their respective rights and obligations under this Agreement, the Government and the Non-Federal Sponsor each act in an independent capacity, and neither is to be considered the officer, agent, or employee of the other.

B. In the exercise of its rights and obligations under this Agreement, neither party shall provide, without the consent of the other party, any contractor with a release that waives or purports to waive any rights such other party may have to seek relief or redress against such contractor either pursuant to any cause of action that such other party may have or for violation of any law.

ARTICLE XIII - OFFICIALS NOT TO BENEFIT

No member of or delegate to the Congress, nor any resident commissioner, shall be admitted to any share or part of this Agreement, or to any benefit that may arise therefrom.

ARTICLE XIV - TERMINATION OR SUSPENSION

A. If at any time the Non-Federal Sponsor fails to fulfill its obligations under Article II.B., II.D., II.E., VI, or XVIII.C. of this Agreement, the Assistant Secretary of the Army (Civil Works) shall terminate this Agreement or suspend future performance under this Agreement unless he determines that continuation of work on the Project is in the interest of the United States or is necessary in order to satisfy agreements with any other non-Federal interests in connection with the Project.

B. If the Government fails to receive annual appropriations in amounts sufficient to meet Project expenditures for the then-current or upcoming fiscal year, the Government shall so notify the Non-Federal Sponsor in writing, and 60 calendar days thereafter either party may elect without penalty to terminate this Agreement or to suspend future performance under this Agreement. In the event that either party elects to suspend future performance under this Agreement pursuant to this paragraph, such suspension shall remain in effect until such time as the Government receives sufficient appropriations or until either the Government or the Non-Federal Sponsor elects to terminate this Agreement.

C. In the event that either party elects to terminate this Agreement pursuant to this Article or Article XV of this Agreement, both parties shall conclude their activities relating to the Project and proceed to a final accounting in accordance with Article VI.D. of this Agreement.

D. Any termination of this Agreement or suspension of future performance under this Agreement in accordance with this Article or Article XV of this Agreement shall not relieve the parties of liability for any obligation previously incurred. Any delinquent payment shall be charged interest at a rate, to be determined by the Secretary of the Treasury, equal to 150 per centum of the average bond equivalent rate of the 13-week Treasury bills auctioned immediately prior to the date on which such payment became delinquent, or auctioned immediately prior to the beginning of each additional 3-month period if the period of delinquency exceeds 3 months.

ARTICLE XV - HAZARDOUS SUBSTANCES

A. After execution of this Agreement and upon direction by the District Engineer, the Non-Federal Sponsor shall perform, or cause to be performed, any investigations for hazardous substances that the Government or the Non-Federal Sponsor determines to be necessary to identify the existence and extent of any hazardous substances regulated under the Comprehensive Environmental Response, Compensation, and Liability Act (hereinafter "CERCLA"), 42 U.S.C. Sections 9601-9675, that may exist in, on, or under lands, easements, and rights-of-way that the

Government determines, pursuant to Article III of this Agreement, to be required for the construction, operation, and maintenance of the Project. However, for lands that the Government determines to be subject to the navigation servitude, only the Government shall perform such investigations unless the District Engineer provides the Non-Federal Sponsor with prior specific written direction, in which case the Non-Federal Sponsor shall perform such investigations in accordance with such written direction. All actual costs incurred by the Non-Federal Sponsor for such investigations for hazardous substances shall be included in total project costs and cost shared in accordance with the provisions of this Agreement, subject to an audit in accordance with Article X.C. of this Agreement to determine reasonableness, allocability, and allowability of costs.

B. In the event it is discovered through any investigation for hazardous substances or other means that hazardous substances regulated under CERCLA exist in, on, or under any lands, easements, or rights-of-way that the Government determines, pursuant to Article III of this Agreement, to be required for the construction, operation, and maintenance of the Project, the Non-Federal Sponsor and the Government shall provide prompt written notice to each other, and the Non-Federal Sponsor shall not proceed with the acquisition of the real property interests until both parties agree that the Non-Federal Sponsor should proceed.

C. The Government and the Non-Federal Sponsor shall determine whether to initiate construction of the Project, or, if already in construction, whether to continue with work on the Project, suspend future performance under this Agreement, or terminate this Agreement for the convenience of the Government, in any case where hazardous substances regulated under CERCLA are found to exist in, on, or under any lands, easements, or rights-of-way that the Government determines, pursuant to Article III of this Agreement, to be required for the construction, operation, and maintenance of the Project. Should the Government and the Non-Federal Sponsor determine to initiate or continue with construction after considering any liability that may arise under CERCLA, the Non-Federal Sponsor shall be responsible, as between the Government and the Non-Federal Sponsor, for the costs of clean-up and response, to include the costs of any studies and

investigations necessary to determine an appropriate response to the contamination. Such costs shall not be considered a part of total project costs. In the event the Non-Federal Sponsor fails to provide any funds necessary to pay for clean up and response costs or to otherwise discharge the Non-Federal Sponsor's responsibilities under this paragraph upon direction by the Government, the Government may, in its sole discretion, either terminate this Agreement for the convenience of the Government, suspend future performance under this Agreement, or continue work on the Project.

D. The Non-Federal Sponsor and the Government shall consult with each other in accordance with Article V of this Agreement in an effort to ensure that responsible parties bear any necessary clean up and response costs as defined in CERCLA. Any decision made pursuant to paragraph C. of this Article shall not relieve any third party from any liability that may arise under CERCLA.

E. As between the Government and the Non-Federal Sponsor, the Non-Federal Sponsor shall be considered the operator of the Project for purposes of CERCLA liability. To the maximum extent practicable, the Non-Federal Sponsor shall operate, maintain, repair, replace, and rehabilitate the Project in a manner that will not cause liability to arise under CERCLA.

ARTICLE XVI - NOTICES

A. Any notice, request, demand, or other communication required or permitted to be given under this Agreement shall be deemed to have been duly given if in writing and either delivered personally or by telegram or mailed by first-class, registered, or certified mail, as follows:

If to the Non-Federal Sponsor: The State of California
The Reclamation Board
P.O. Box 942836
Sacramento, CA 94236-0001

If to the Government: USAED, Sacramento
1325 J Street
Sacramento, CA 95814-2922

B. A party may change the address to which such communications are to be directed by giving written notice to the other party in the manner provided in this Article.

C. Any notice, request, demand, or other communication made pursuant to this Article shall be deemed to have been received by the addressee at the earlier of such time as it is actually received or seven calendar days after it is mailed.

ARTICLE XVII - CONFIDENTIALITY

To the extent permitted by the laws governing each party, the parties agree to maintain the confidentiality of exchanged information when requested to do so by the providing party.

ARTICLE XVIII - HISTORIC PRESERVATION

A. The costs of identification, survey and evaluation of historic properties shall be included in total project costs and cost shared in accordance with the provisions of this Agreement.

B. As specified in Section 7(a) of Public Law 93-291 (16 U.S.C. Section 469c(a)), the costs of mitigation and data recovery activities associated with historic preservation shall be borne entirely by the Government and shall not be included in total project costs, up to the statutory limit of one percent of the total amount authorized to be appropriated for the Project.

C. The Government shall not incur costs for mitigation and data recovery that exceed the statutory one percent limit specified in paragraph B. of this Article unless and until the Assistant Secretary of the Army (Civil Works) has waived that limit in accordance with Section 208(3) of Public Law 96-515 (16 U.S.C. Section 469c-2(3)). Any costs of mitigation and data recovery that exceed the one percent limit shall not be included in total

project costs but shall be cost shared between the Non-Federal Sponsor and the Government consistent with the minimum non-Federal cost sharing requirements for the underlying flood control purpose, as follows: 35 percent borne by the Non-Federal Sponsor, and 65 percent borne by the Government.

ARTICLE XIX - SECTION 902 PROJECT COST LIMITS

The Non-Federal Sponsor has reviewed the provisions set forth in Section 902 of Public Law 99-662, as amended, and understands that Section 902 establishes the maximum amount of total project costs for South Sacramento County Streams, California. The Section 902 limitation is a common value for the entire South Sacramento County Streams project authorization and applies to all project elements in aggregate regardless of separate Project Cooperation Agreements. Notwithstanding any other provision of this Agreement, the Government shall not make a new Project financial obligation, make a Project expenditure, or afford credit toward total project costs for the value of any contribution provided by the Non-Federal Sponsor, if such obligation, expenditure, or credit would result in total project costs exceeding this maximum amount, unless otherwise authorized by law. On the effective date of this Agreement, this maximum amount is estimated to be $93,692,000 as calculated in accordance with ER 1105-2-100 using October 1, 2004 price levels and allowances for projected future inflation. The Government shall adjust this maximum amount in accordance with Section 902.

ARTICLE XX -OBLIGATIONS OF FUTURE APPROPRIATIONS

A. Nothing herein shall constitute, nor be deemed to constitute, an obligation of future appropriations by the Legislature of the State of California, where creating such an obligation would be inconsistent with Article XVI, Section 1 of the Constitution.

B. The Non-Federal Sponsor intends to satisfy its obligations under this Agreement. The Non-Federal Sponsor shall include in its budget request or otherwise propose, for each fiscal period, appropriations sufficient to cover the Non-Federal Sponsor's obligations under this Agreement for each year, and will use all reasonable and lawful means to secure the appropriations for that year sufficient to make the payments necessary to

fulfill its obligations hereunder. The Non-Federal Sponsor reasonably believes that funds in amounts sufficient to discharge these obligations can and will lawfully be appropriated and made available for this purpose. In the event the budget or other means of appropriations does not provide funds in sufficient amounts to discharge these obligations, the Non-Federal Sponsor shall use its best efforts to satisfy any requirements for payments under this Agreement from any other source of funds legally available for this purpose. Further, if the Non-Federal Sponsor is unable to satisfy its obligations hereunder, the Government may exercise any legal rights it has to protect the Government's interests related to this Agreement.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement, which shall become effective upon the date it is signed by the District Engineer.

THE DEPARTMENT OF THE ARMY

BY: _____
Ronald N. Light
Colonel, Corps of Engineers
District Engineer

DATE: _____

THE STATE OF CALIFORNIA,
THE RECLAMATION BOARD

BY: _____
Betsy Marchand
President
The Reclamation Board

DATE: _____

CERTIFICATE OF AUTHORITY

I, Scott Morgan, do hereby certify that I am the principal legal officer of the State of California, The Reclamation Board, that The Reclamation Board is a legally constituted public body with full authority and legal capability to perform the terms of the Agreement between the Department of the Army and the State of California, The Reclamation Board and the Sacramento Area Flood Control Agency in connection with the South Sacramento County Stream, CA, and to pay damages in accordance with the terms of this Agreement, if necessary, in the event of the failure to perform, as required by Section 221 of Public Law 91-611 (42 U.S.C. Section 1962d-5b), and that the persons who have executed this Agreement on behalf of the State of California, The Reclamation Board have acted within their statutory authority.

IN WITNESS WHEREOF, I have made and executed this certification this _____ day of _____ 20___.

Scott Morgan
Counsel
The Reclamation Board

CERTIFICATION REGARDING LOBBYING

The undersigned certifies, to the best of his or her knowledge and belief that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

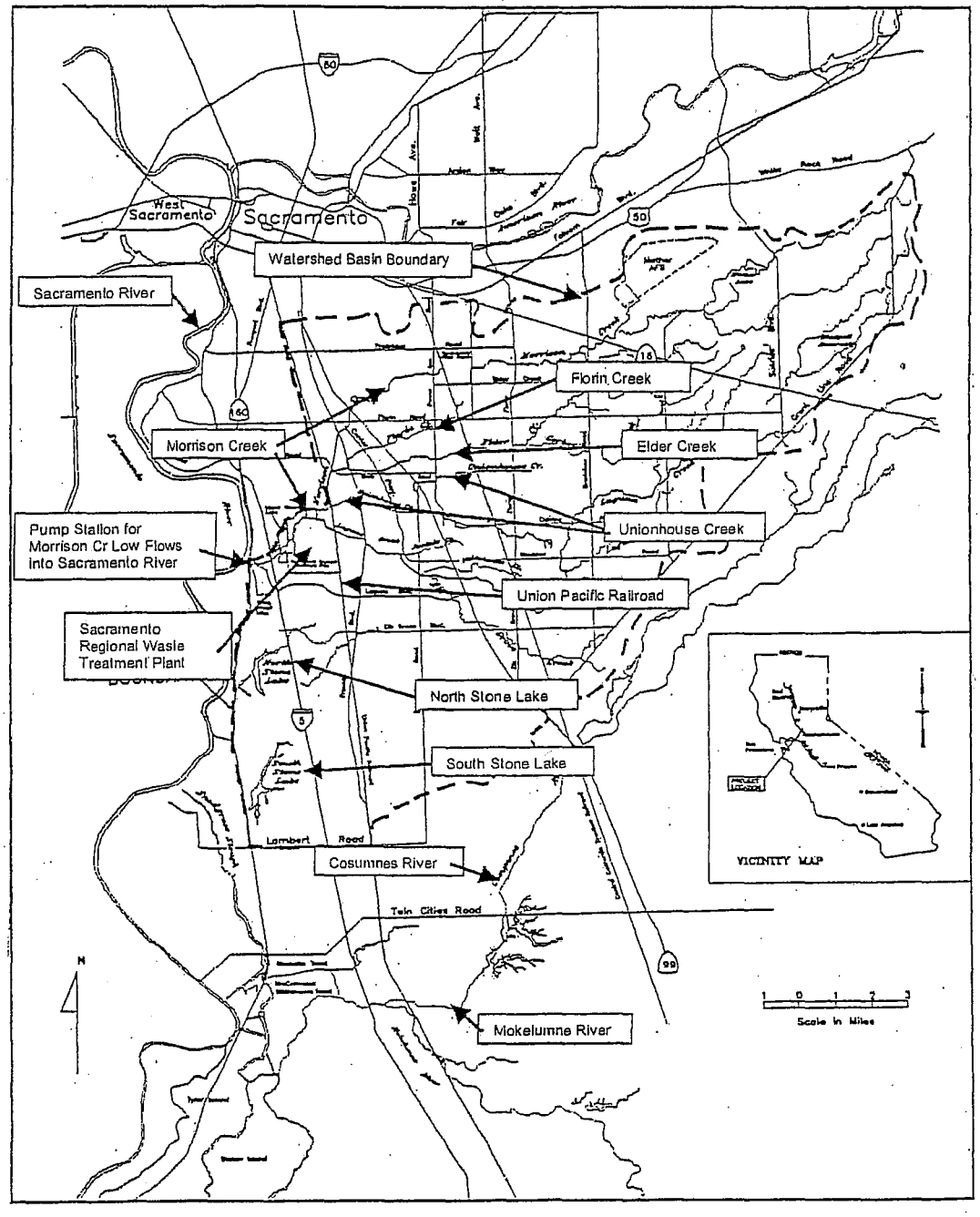
(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

BY: _____ DATE: _____

Peter Rabbon, General Manager
State of California, The Reclamation Board


West Sacramento
Sacramento
Watershed Basin Boundary
Sacramento River
Florin Creek
Morrison Creek
Elder Creek
Unionhouse Creek
Pump Station for Morrison Cr Low Flows into Sacramento River
Union Pacific Railroad
Sacramento Regional Waste Treatment Plant
North Stone Lake
South Stone Lake
Cosumnes River
Mokelumne River
Lambert Road
Twin Cities Road
VICINITY MAP
Scale in Miles

State of California

BUDGET DETAIL AND PAYMENT PROVISIONS

I. INVOICING AND PAYMENT: Method of payment shall be in accordance with provisions stated in Article VI on page 13 of this Agreement.

II. BUDGET CONTINGENCY CLAUSE: It is mutually agreed that if the Budget Act of the current year and/or any subsequent years covered under this Agreement does not appropriate sufficient funds for the program, this Agreement shall be of no further force and effect. In this event, the State shall have no liability to pay any funds whatsoever to Contractor or to furnish any other considerations under this Agreement and Contractor shall not be obligated to perform any provisions of this Agreement.

If funding for any fiscal year is reduced or deleted by the Budget Act for purposes of this program, the State shall have the option to either: cancel this Agreement with no liability occurring to the State, or offer an Agreement Amendment to Contractor to reflect the reduced amount.

Local Project Cooperation Agreement

Estimated Costs for South Sacramento County Streams Project
at Sacramento, California

ESTIMATED FEDERAL AND NONFEDERAL SHARE OF COSTS
(Fully Funded and Rounded $)

Total Project Costs	$86,390,000
Federal Share (65%)	$56,154,000
Nonfederal share (35%)	$30,236,000

ESTIMATED STATE AND LOCAL SHARE OF NONFEDERAL COSTS
(Fully Funded and Rounded $)

Total Nonfederal Share	$30,236,000
State Share (70%)	$21,165,000
Local share (30%)	$ 9,071,000

GTC 304

EXHIBIT C

GENERAL TERMS AND CONDITIONS

1. APPROVAL: This Agreement is of no force or effect until signed by both parties and approved by the Department of General Services, if required. Contractor may not commence performance until such approval has been obtained.

2. AMENDMENT: No amendment or variation of the terms of this Agreement shall be valid unless made in writing, signed by the parties and approved as required. No oral understanding or Agreement not incorporated in the Agreement is binding on any of the parties.

3. ASSIGNMENT: This Agreement is not assignable by the Contractor, either in whole or in part, without the consent of the State in the form of a formal written amendment.

4. AUDIT: Contractor agrees that the awarding department, the Department of General Services, the Bureau of State Audits, or their designated representative shall have the right to review and to copy any records and supporting documentation pertaining to the performance of this Agreement. Contractor agrees to maintain such records for possible audit for a minimum of three (3) years after final payment, unless a longer period of records retention is stipulated. Contractor agrees to allow the auditor(s) access to such records during normal business hours and to allow interviews of any employees who might reasonably have information related to such records. Further, Contractor agrees to include a similar right of the State to audit records and interview staff in any subcontract related to performance of this Agreement. (GC 8546.7, PCC 10115 et seq., CCR Title 2, Section 1896).

5. INDEMNIFICATION: Contractor agrees to indemnify, defend and save harmless the State, its officers, agents and employees from any and all claims and losses accruing or resulting to any and all contractors, subcontractors, suppliers, laborers, and any other person, firm or corporation furnishing or supplying work services, materials, or supplies in connection with the performance of this Agreement, and from any and all claims and losses accruing or resulting to any person, firm or corporation who may be injured or damaged by Contractor in the performance of this Agreement.

6. DISPUTES: Contractor shall continue with the responsibilities under this Agreement during any dispute.

7. TERMINATION FOR CAUSE: The State may terminate this Agreement and be relieved of any payments should the Contractor fail to perform the requirements of this Agreement at the time and in the manner herein provided. In the event of such termination the State may proceed with the work in any manner deemed proper by the State. All costs to the State shall be deducted

from any sum due the Contractor under this Agreement and the balance, if any, shall be paid to the Contractor upon demand.

8. INDEPENDENT CONTRACTOR: Contractor, and the agents and employees of Contractor, in the performance of this Agreement, shall act in an independent capacity and not as officers or employees or agents of the State.

9. RECYCLING CERTIFICATION: The Contractor shall certify in writing under penalty of perjury, the minimum, if not exact, percentage of recycled content, both post consumer waste and secondary waste as defined in the Public Contract Code, Sections 12161 and 12200, in materials, goods, or supplies offered or products used in the performance of this Agreement, regardless of whether the product meets the required recycled product percentage as defined in the Public Contract Code, Sections 12161 and 12200. Contractor may certify that the product contains zero recycled content. (PCC 10233, 10308.5, 10354)

10. NON-DISCRIMINATION CLAUSE: During the performance of this Agreement, Contractor and its subcontractors shall not unlawfully discriminate, harass, or allow harassment against any employee or applicant for employment because of sex, race, color, ancestry, religious creed, national origin, physical disability (including HIV and AIDS), mental disability, medical condition (cancer), age (over 40), marital status, and denial of family care leave. Contractor and subcontractors shall insure that the evaluation and treatment of their employees and applicants for employment are free from such discrimination and harassment. Contractor and subcontractors shall comply with the provisions of the Fair Employment and Housing Act (Government Code Section 12990 (a-f) et seq.) and the applicable regulations promulgated thereunder (California Code of Regulations, Title 2, Section 7285 et seq.). The applicable regulations of the Fair Employment and Housing Commission implementing Government Code Section 12990 (a-f), set forth in Chapter 5 of Division 4 of Title 2 of the California Code of Regulations, are incorporated into this Agreement by reference and made a part hereof as if set forth in full. Contractor and its subcontractors shall give written notice of their obligations under this clause to labor organizations with which they have a collective bargaining or other Agreement.

Contractor shall include the nondiscrimination and compliance provisions of this clause in all subcontracts to perform work under the Agreement.

11. CERTIFICATION CLAUSES: The CONTRACTOR CERTIFICATION CLAUSES contained in the document CCC 304 are hereby incorporated by reference and made a part of this Agreement by this reference as if attached hereto.

12. TIMELINESS: Time is of the essence in this Agreement.

13. COMPENSATION: The consideration to be paid Contractor, as provided herein, shall be in compensation for all of Contractor's expenses incurred in the performance hereof, including travel, per diem, and taxes, unless otherwise expressly so provided.

14. GOVERNING LAW: This contract is governed by and shall be interpreted in accordance with the laws of the State of California.

15. ANTITRUST CLAIMS: The Contractor by signing this agreement hereby certifies that if these services or goods are obtained by means of a competitive bid, the Contractor shall comply with the requirements of the Government Codes Sections set out below.
a. The Government Code Chapter on Antitrust claims contains the following definitions:
1). "Public purchase" means a purchase by means of competitive bids of goods, services, or materials by the State or any of its political subdivisions or public agencies on whose behalf the Attorney General may bring an action pursuant to subdivision (c) of Section 16750 of the Business and Professions Code.
2). "Public purchasing body" means the State or the subdivision or agency making a public purchase. Government Code Section 4550.

b. In submitting a bid to a public purchasing body, the bidder offers and agrees that if the bid is accepted, it will assign to the purchasing body all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Sec. 15) or under the Cartwright Act (Chapter 2 (commencing with Section 16700) of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, materials, or services by the bidder for sale to the purchasing body pursuant to the bid. Such assignment shall be made and become effective at the time the purchasing body tenders final payment to the bidder. Government Code Section 4552.

c. If an awarding body or public purchasing body receives, either through judgment or settlement, a monetary recovery for a cause of action assigned under this chapter, the assignor shall be entitled to receive reimbursement for actual legal costs incurred and may, upon demand, recover from the public body any portion of the recovery, including treble damages, attributable to overcharges that were paid by the assignor but were not paid by the public body as part of the bid price, less the expenses incurred in obtaining that portion of the recovery. Government Code Section 4553.

d. Upon demand in writing by the assignor, the assignee shall, within one year from such demand, reassign the cause of action assigned under this part if the assignor has been or may have been injured by the violation of law for which the cause of action arose and (a) the assignee has not been injured thereby, or (b) the assignee declines to file a court action for the cause of action. See Government Code Section 4554.

16. CHILD SUPPORT COMPLIANCE ACT: "For any Agreement in excess of $100,000, the contractor acknowledges in accordance with Public Contract Code 7110, that:

a). The contractor recognizes the importance of child and family support obligations and shall fully comply with all applicable state and federal laws relating to child and family support

enforcement, including, but not limited to, disclosure of information and compliance with earnings assignment orders, as provided in Chapter 8 (commencing with section 5200) of Part 5 of Division 9 of the Family Code; and

b) The contractor, to the best of its knowledge is fully complying with the earnings assignment orders of all employees and is providing the names of all new employees to the New Hire Registry maintained by the California Employment Development Department."

17. UNENFORCEABLE PROVISION: In the event that any provision of this Agreement is unenforceable or held to be unenforceable, then the parties agree that all other provisions of this Agreement have force and effect and shall not be affected thereby.

18. UNION ACTIVITIES For all contracts, except fixed price contracts of $50,000 or less, the Contractor acknowledges that:

By signing this agreement Contractor hereby acknowledges the applicability of Government Code Section 16645 through Section 16649 to this agreement and agrees to the following:
a) Contractor will not assist, promote or deter union organizing by employees performing work on a state service contract, including a public works contract.
b) No state funds received under this agreement will be used to assist, promote or deter union organizing.
c) Contractor will not, for any business conducted under this agreement, use any state property to hold meetings with employees or supervisors, if the purpose of such meetings is to assist, promote or deter union organizing, unless the state property is equally available to the general public for holding meetings.
d) If Contractor incurs costs, or makes expenditures to assist, promote or deter union organizing, Contractor will maintain records sufficient to show that no reimbursement from state funds has been sought for these costs, and that Contractor shall provide those records to the Attorney General upon request.

EXHIBIT D–Special Terms and Conditions for Department of Water Resources (Local Project Cooperation Agreement (LPCA) - Receivable)

1. RESOLUTION OF DISPUTES: In the event of a dispute, Contractor shall file a "Notice of Dispute" with the Director or the Director's Designee within ten (10) days of discovery of the problem. The State and Contractor shall then attempt to negotiate a resolution of such claim and, if appropriate, process an amendment to implement the terms of any such resolution. If the State and Contractor are unable to resolve the dispute, the decision of the Director or the Director's Designee shall be final, unless appealed to a court of competent jurisdiction.

   In the event of a dispute, the language contained within this agreement shall prevail over any other language including that of the bid proposal.

2. AVAILABILITY OF FUNDS: Work to be performed under this contract is subject to availability of funds through the State's normal budget process.

3. AGENCY LIABILITY:. The Contractor warrants by execution of this Agreement, that no person or selling agency has been employed or retained to solicit or secure this Agreement upon agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by the Contractor for the purpose of securing business. For breach or violation of this warranty, the State shall, in addition to other remedies provided by law, have the right to annul this Agreement without liability, paying only for the value of the work actually performed, or otherwise recover the full amount of such commission, percentage, brokerage, or contingent fee.

4. POTENTIAL SUBCONTRACTORS: Nothing contained in this Agreement or otherwise shall create any contractual relation between the State and any subcontractors, and no subcontract shall relieve the Contractor of its responsibilities and obligations hereunder. The Contractor agrees to be as fully responsible to the State for the acts and omissions of its subcontractors and of persons either directly or indirectly employed by any of them as it is for the acts and omissions of persons directly employed by the Contractor. The Contractor's obligation to pay its subcontractors is an independent obligation from the State's obligation to make payments to the Contractor. As a result, the State shall have no obligation to pay or enforce the payment of any moneys to any subcontractor.

5. COMPUTER SOFTWARE: For contracts in which software usage is an essential element of performance under this Agreement, the Contractor certifies that it has appropriate systems and controls in place to ensure that state funds will not be used in the performance of this contract for the acquisition, operation or maintenance of computer software in violation of copyright laws.

6. REIMBURSEMENT CLAUSE: If applicable, travel and per diem expenses to be reimbursed under this contract shall be at the same rates the State provides for unrepresented employees in accordance with the provisions of Title 2, Chapter 3, of the California Code of Regulations. Contractor's designated headquarters for the purpose of computing such expenses shall be:

7. CONFLICT OF INTEREST:

   a. Current and Former State Employees: Contractor should be aware of the following provisions regarding current or former state employees. If Contractor has any questions on the status of any person rendering services or involved with the Agreement, the awarding agency must be contacted immediately for clarification.

      (1) Current State Employees: (PCC §10410)

         (a) No officer or employee shall engage in any employment, activity or enterprise from which the officer or employee receives compensation or has a financial interest and which is sponsored or funded by any state agency, unless the employment, activity or enterprise is required as a condition of regular state employment.

         (b) No officer or employee shall contract on his or her own behalf as an independent contractor with any state agency to provide goods or services.

      (2) Former State Employees: (PCC §10411)

         (a) For the two-year period from the date he or she left state employment, no former state officer or employee may enter into a contract in which he or she engaged in any of the negotiations, transactions, planning, arrangements or any part of the decision-making process relevant to the contract while employed in any capacity by any state agency.

         (b) For the twelve-month period from the date he or she left state employment, no former state officer or employee may enter into a contract with any state agency if he or she was employed by that state agency in a policy-making position in the same general subject area as the proposed contract within the 12-month period prior to his or her leaving state service.

b. Penalty for Violation:

(a) If the Contractor violates any provisions of above paragraphs, such action by Contractor shall render this Agreement void. (PCC §10420)

c. Members of Boards and Commissions:

(a) Members of boards and commissions are exempt from this section if they do not receive payment other than payment of each meeting of the board or commission, payment for preparatory time and payment for per diem. (PCC §10430 (e)

d. Representational Conflicts of Interest:

The Contractor must disclose to the DWR Program Manager any activities by contractor or subcontractor personnel involving representation of parties, or provision of consultation services to parties, who are adversarial to DWR. DWR may immediately terminate this contract if the contractor fails to disclose the information required by this section. DWR may immediately terminate this contract if any conflicts of interest cannot be reconciled with the performance of services under this contract.

e. Financial Interest in Contracts:

Contractor should also be aware of the following provisions of Government Code §1090:

"Members of the Legislature, state, county district, judicial district, and city officers or employees shall not be financially interested in any contract made by them in their official capacity, or by any body or board of which they are members. Nor shall state, county, district, judicial district, and city officers or employees be purchasers at any sale or vendors at any purchase made by them in their official capacity."

f. Prohibition for Consulting Services Contracts:

For consulting services contracts (see PCC §10335.5), the Contractor and any subcontractors (except for subcontractors who provide services amounting to 10 percent or less of the contract price) may not submit a bid/SOQ, or be awarded a contract, for the provision of services, procurement of goods or supplies or any other related action which is required, suggested, or otherwise deemed appropriate in the end product of such a consulting services contract (see PCC §10365.5).

California Department of Water Resources

Standard Contract Provisions Regarding Political Reform Act Compliance

1. POLITICAL REFORM ACT REQUIREMENTS:

   a. Form 700 Disclosure: The Department considers the Contractor and subcontractor and their key staff to be a "consultant," i.e., a public official, within the meaning of the Political Reform Act, specifically Government Code §82048 and Title 2, California Code of Regulations §18701. Accordingly, the Contractor, the Contractor's key staff, subcontractors and their key staff shall complete and submit to the DWR Personnel Officer a Form 700, Statement of Economic Interest, within 30 days of the effective date of the contract, updated both annually and when changes in key staff or duties occur. The financial interests disclosed shall be for: **Category 1**. Bidders/Applicants may access the Form 700 on the Fair Political Practices Commission website at www.fppc.ca.gov. Any questions regarding completion of the Form 700 should be addressed to the FPPC at its website or at (866) 275-3772 (866/ASK-FPPC). All consultants will also be required to submit a leaving office statement upon completion of all contract assignments.

   b. Financial Conflict of Interest Prohibition: Contractor must review the Form 700's filed by its key staff and subcontractors and determine whether, in the light of the interests disclosed, performance under the contract could violate Government Code §87100. Government Code §87100 provides:

      > "No public official at any level of state or local government shall make, participate in making or in any way attempt to use his official position to influence a governmental decision in which he knows or has reason to know he has a financial interest."

   c. Consequences of Failure to Comply with Political Reform Act Requirements: Any one of the following shall constitute a breach of this Contract and shall be grounds for immediate termination of this Contract:

      (1) Failure to complete and submit all required Form 700(s) within the 30 day period as required in paragraph A above, or respond to any request from the DWR Personnel Officer for additional information regarding the Contractor's Statement of Economic Interests;

(2) Failure to notify DWR of a potentially disqualifying conflict of interest;

(3) The determination by DWR or the Contractor that any individual, who is a contractor or subcontractor key staff member, has a financial interest which could result in a violation of Government Code §87100; however, DWR may opt to waive such breach if Contractor replaces any such individual within two working days after a determination of such financial interest.

Attachment G - Draft Letter to SAFCA

STATE OF CALIFORNIA – CALIFORNIA NATURAL RESOURCES AGENCY **EDMUND G. BROWN JR.,** GOVERNOR

CENTRAL VALLEY FLOOD PROTECTION BOARD
3310 El Camino Ave., Ste. 170
SACRAMENTO, CA 95821
(916) 574-0609 FAX: (916) 574-0682

October 28, 2016

Mr. Pete Ghelfi, P.E.
Director of Engineering
Sacramento Area Flood Control Agency
1007 7th Street, 7th Floor
Sacramento, California 95814

Subject: Transfer of Interim Operation, Maintenance, Repair, Replacement, and Rehabilitation Responsibilities for the South Sacramento County Streams, California, San Joaquin River Basin, Flood Control Project

Dear Mr. Ghelfi:

This letter transfers interim operation, maintenance, repair, replacement, and rehabilitation responsibilities for the South Sacramento County Streams, California, San Joaquin River Basin, Flood Control Project (Project) from the Central Valley Flood Protection Board (Board) to the Sacramento Area Flood Control Agency (SAFCA).

The transferred completed elements of the project are:

North Beach Lake Levee and Floodwall Improvements, West of Union Pacific Railroad (UPRR) to Sacramento River (Contract 1A, completed January 27, 2006);
Morrison Creek Levee and Floodwall Improvements, East of UPRR to Franklin Boulevard (Contract 1B1, completed November 13, 2008);
Unionhouse, Florin, and Elder Creeks Levee Improvements, upstream to Franklin Boulevard (Contract 1B2, completed November 26, 2008); and
Morrison Creek left bank (east) floodwall along UPRR (Contract 2A, completed November 1, 2013).

In accordance with Section II.J.2 and Section V.A of the Local Project Cooperation Agreement (LPCA) between the Board and SAFCA, dated May 19, 2005, SAFCA agreed to operate, maintain, repair, replace, and rehabilitate the facilities and related features constructed as part of the Project, including any environmental mitigation and monitoring features described in Section V of LPCA, in accordance with the regulations or directions prescribed by the Secretary of the Army.

Board Resolution 2016-17 includes the Board's acceptance of operation, maintenance, repair, replacement, and rehabilitation responsibilities from the USACE, and transfers those same responsibilities to SAFCA. This transmittal includes the "Interim Operation, Maintenance, Repair, Replacement, & Rehabilitation Manual for the South Sacramento County Streams, San Joaquin River Basin Flood Control Project" and as-built drawings for the above-completed contracts.

If you have any questions, please contact the Board's Project Manager, Deb Biswas by phone at (916) 574-2383, or by email at Debabrata.Biswas@ cvflood.ca.gov.

Sincerely,

Leslie M. Gallagher
Executive Officer

cc: (via electronic distribution)

Department of Water Resources
Mr. Selvaratnam Selvamohan, DWR Project Manager, Flood Project Office
Mr. Don Rasmussen, Flood Project Integrity & Inspection Branch

U.S. Army Corps of Engineers, Sacramento District
Mr. Juan M. Gonzalez, Flood Navigation Section
Ms. Jill Russi, Project Manager

Sacramento Regional County Sanitation District
Mr. Ruben Robles, Director

City of Sacramento, City Utilities
Mr. Bill Busath

Enclosures:

Interim Operation, Maintenance, Repair, Replacement, & Rehabilitation Manual, South Sacramento County Streams, California, San Joaquin River Basin Flood Control Project, June 2015.

As-built Drawings for USACE Contracts 1A, 1B1, 1B2, and 2A