

**Meeting of the Central Valley Flood Protection Board  
June 23, 2023**

**Staff Report for the  
Project Partnership Agreement  
Agenda Item No. 10A**

**Sacramento River Bank Protection Project,  
Phase II Supplemental Authorization**

**1.0 – ITEM**

Adopt Resolution No. 2023-06 (Attachment A) to:

1. Approve the Project Partnership Agreement (PPA) (Attachment B) by and between the Central Valley Flood Protection Board (Board) and the U.S. Army Corps of Engineers (USACE) for the Sacramento River Bank Protection Project (SRBPP), supplemental authorization of an additional 80,000 linear feet (LF) of bank protection measures within Phase II (Project).
2. Delegate authority to the Board President to sign the PPA.
3. Delegate authority to Board staff to transfer the operation and maintenance responsibilities for completed work within the Project.

**2.0 – SPONSORS**

Federal: U.S. Army Corps of Engineers  
State: Central Valley Flood Protection Board

**3.0 – PROJECT LOCATION**

The Project study area spans the entirety of the Sacramento River Flood Control Project (SRFCP) system of levees, which in general, extends south to north along the Sacramento River (including its tributaries, sloughs, and bypass channels) from the unincorporated community of Collinsville in Solano County upstream through Chico in Butte County and into Tehama County. The location of sites within the study area that would receive bank protection improvements will be determined through the site selection and implementation process and varies as sites are identified and prioritized

for construction. The general location of 106 sites used as a representative sample for the supplemental authorization for Phase II is included as Attachment C.

#### **4.0 – PROJECT DESCRIPTION**

The SRBPP is a continuing federal construction project that provides for a long-term program of bank stabilization and erosion control to maintain the integrity of the existing levees and flood control facilities of the SRFCP. The SRBPP corrects levee erosion problems while ensuring the sustainable integration of environmental mitigation features. The program can address these problems through construction of erosion control works or setback levees. The program is led by the USACE and sponsored by the Board. The Board is responsible for sharing in the payment of costs, providing Lands, Easements, Rights-of-way, Relocations, and Disposal Areas, and transferring the operation and maintenance responsibility of the completed SRBPP repairs to the Local Maintaining Agencies (LMA). The California Department of Water Resources (DWR) currently manages the SRBPP on behalf of the Board and coordinates with Board staff in fulfilling its obligation as the non-federal sponsor.

The supplemental authorization of an additional 80,000 LF of bank protection measures for Phase II of the SRBPP provides an array of general improvements to levees to reduce the risk of flooding due to failure. These improvements would be made to sites identified during annual reconnaissance surveys and prioritized through the site selection and implementation process. The supplemental authority limits the amount of additional bank repair at these sites to 80,000 LF. The Project's Post-Authorization Change Report (PACR) contains information on the site selection process and engineering considerations.

The Project's Chief of Engineers Report from 1973 elaborates on the purpose and necessity of the bank protection improvements and the long-term nature of the Project.

*“Each year, streambanks and levees at additional unprotected locations throughout the Sacramento River Flood Control Project are subjected to erosion which carries away useful land, deposits sediment in downstream flood and navigation channels, damages valuable riparian vegetation and wildlife habitat, and ultimately threatens to destroy the integrity of the flood protection project and produce disastrous flooding.”<sup>1</sup>*

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<sup>1</sup> Sacramento River Bank Protection Project, Phase II – 80,000 Linear Feet, Appendix A, “Engineering,” Section 1.1. November 2019.

The supplemental authorization for Phase II continues the construction of bank protection measures to address the concerns identified above. General design concepts for the proposed bank protection measures were developed in the 2009 Alternatives Report using information from a representative sample of 106 erosion sites. As described in Chapter 4 of Appendix A, "Engineering," to the PACR, the USACE reevaluated the design concepts for compliance with federal vegetation management regulations in effect at the time the PACR was being developed.<sup>2</sup> Original designs for 39 sites were revised due to planned vegetation plantings in the vegetation-free zone. The remaining 67 sites retained the design concepts from the 2009 Alternatives Report. The array of design concepts developed for the SRBPP supplemental authorization are identified as Measures 1 through 5 in the PACR along with a No Action alternative. Once erosion sites are accepted by the USACE for construction, the designs will be prepared and completed in accordance with current industry design standards and practice, consistent with levee repair projects currently being implemented. The array of designs selected for the supplemental authorization to Phase II are presented in Attachment D. A list of the available design concepts ranked by the number of sites selected for each design is shown below.

- Measure 2 – Bank Fill Stone Protection with or without On-Site Vegetation (includes Measure 5) (29 sites)
- Measure 4a – Riparian Bank with Re-vegetation and IWM above Summer/Fall Waterline (18 sites)
- Measure 4b – Riparian Bench with Re-vegetation and IWM above and below Summer/Fall Waterline (15 sites)
- Measure 3 – Adjacent Levee (15 sites)
- Measure 1 – Setback Levee (12 sites)
- No Action (10 sites)
- Measure 4c – Riparian and Wetland Benches with Revegetation (7 sites)

The actual constructed bank protection improvement will differ from that described in the design reports due to changes in the extent of erosion, environmental conditions, real estate costs, and specific site features. The proposed PPA allows for the Board and DWR to review and comment on the final design documents prior to construction through participation in the Project delivery team. The Project team will collaborate on

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<sup>2</sup> ETL 1110-2-583, "Guidelines for Landscape Planting and Vegetation Management at Levees, Floodwalls, Embankment Dams, and Appurtenant Structure", April 30, 2014.

the site selection and implementation process to prepare adequate designs, revise the federal operation and maintenance manuals, and comply with the requirements of the California Environmental Quality Act (CEQA).

An Interagency Working Group (IWG) was formed within the SRBPP as a term and condition of the draft jeopardy and final Section 7 consultation under the Endangered Species Act (ESA) biological opinions issued in 2001 by the U.S. Fish and Wildlife Service and the National Marine Fisheries Service. The goal of the IWG is to identify, evaluate, design, and endorse conservation measures, consistent with the biological opinions and the USACE mandate to provide flood protection, that will provide full compensation for actions that will be undertaken for future repairs. The group's purpose has evolved to include other USACE Civil Works project development concepts for planning, to determine project impacts on listed species under the ESA, and to coordinate related issues with State and federal natural resource agencies. The conclusions of the IWG may also serve as a model for achieving agreement on full compensation for future SRBPP bank protection projects.

The actual sites where construction is to occur also will differ based on the results of annual erosion inventory field work. A survey during 2017 identified 192 erosion sites totaling 355,992 LF of which 29 erosion sites totaling 56,315 LF were identified as critical erosion sites. Of those, four sites totaling 3,999 LF are within economically justified basins and not expected to be repaired by other projects. Work on these four sites would be prioritized and would begin with site investigations to obtain environmental, real estate and constructability information. Other non-critical erosion sites in economically justified basins could be added to the list for construction as funding and site-specific conditions allow. If new critical erosion sites located in economically justified basins are identified during the planning process, then they will be added to the list to be considered for construction. A summary of the four critical erosion sites from the 2017 survey is included as Attachment E.

Board and DWR staff, in collaboration with the USACE, will continue to participate in the site selection and implementation process including reviewing decisions to identify sites as critically in need of repair, commenting on the ranking of sites for prioritization, providing support for economic reevaluation of the study area basins, identifying opportunities to assess sites for effective and efficient construction, and developing alternative bank protection measures based on site-specific criteria, as necessary, to guide the preparation of design document reports and environmental compliance documents.

## **5.0 – PROJECT BACKGROUND**

The Flood Control Act of 1960 (PL 86-645, Section 203) granted the original SRBPP authority for providing protection to the existing levees and flood control facilities of the SRFCP. The initial phase (Phase I) provided 430,000 LF of remedial bank protection work and setback levees along the SRFCP and was completed in 1975. Continued erosion to the SRFCP was addressed by the River Basin Monetary Authorization Act of 1974 (PL 93-251, Section 202) by providing SRBPP the authority of a second phase (Phase II) to implement 405,000 LF. The USACE is current closing out SRBPP Phase II by finalizing the last design deviation packages and turning over the remaining repair packages to the Board for its acceptance.

The Water Resources Development Act (WRDA) of 2007 (PL 110-114, Section 3031) added 80,000 LF of bank protection to the 1974 SRBPP authorization for Phase II. A PACR was prepared as a decision document that confirms the federal interest in the SRBPP, as modified by WRDA 2007, and to support future funding of erosion repairs under that authority. The Board's Executive Officer provided a letter of support for the PACR to the USACE Sacramento District Engineer in April 2019.

A supporting joint Environmental Impact Statement/Environmental Impact Report (EIS/EIR) was prepared to comply with the National Environmental Policy Act (NEPA) and CEQA. Board counsel reviewed the final EIS/EIR and expressed concurrence in the PACR's recommended plan in March 2020. Final public reviews of the PACR and EIS/EIR were completed in May 2020. A federal Record of Decision (ROD) was signed on June 30, 2020 by Kimberly Colloton, Brigadier General, USACE South Pacific Division Commander, which approved the PACR, EIS/EIR, and completed the NEPA process. On July 24, 2020, under Resolution 2020-04, the Board certified the EIS/EIR for the Phase II Supplemental Authorization, adopted the Mitigation Monitoring and Reporting Program, the CEQA Statement of Findings, and the CEQA Statement of Overriding Considerations, and approved the PACR. The Board filed a Notice of Determination with the State Clearinghouse on August 26, 2020 to complete the CEQA compliance for the PACR (State Clearinghouse Number 2009012081).

## **6.0 – AUTHORITIES**

Federal:

- Section 203 of the Flood Control Act of 1960 (PL 86-645, 74 Statue 498 – First Phase)

- Section 202 of the River Basin Monetary Authorization Act of 1974 (PL 93-251, 88 Statute 49 – Second Phase)
- Section 140 of the Further Continuing Appropriations Act of 1983 (PL 97-377, 96 Statute 1916)
- Section 3031 of the Water Resources Development Act (WRDA) of 2007 (PL 110-114, 121 Statutes 1041, 1113 – Second Phase amendment for an additional 80,000 LF)

State:

- California Water Codes Sections 8617, 8617.1, 12648.1, and 12649.1

## **7.0 – FUNDING STATUS**

USACE must obtain funding each year through the Federal Appropriations Requests process. The amount of funding and therefore the number of repairs that can be implemented at any time is affected by this annual process. The close out of SRBPP Phase II and the approval of the PPA will allow the USACE to submit requests for funding for consideration in the Presidential budget for future federal fiscal years (FY) beginning FY 2025 and in the federal FY24 work plan.

## **8.0 – PROJECT PARTNERSHIP AGREEMENT**

SRBPP, Phase II is currently being implemented under a Local Cooperation Agreement (LCA) between the USACE and the Board, signed on April 20, 1984. The agreement for Separable Element 41 was signed August 15, 1988, for over 39,000 LF of bank protection along the Sacramento River from River Mile (RM) 0 to RM 80. On December 7, 1988, an agreement for Separable Element 38B, 40, and 42 was signed, authorizing over 102,000 LF of bank protection from RM 0 to RM 145. On June 5, 1990, an LCA for mitigation of first phase construction impacts was signed to provide reimbursement to the U.S. Fish and Wildlife Service for planting and establishment of riparian vegetation. Amendment No. 1 to the 1984 LCA was signed on March 26, 2006, clarifying that the authorized lineal footage for the second phase is 405,000 LF, as authorized by the River Basin Monetary Authorization Act of 1974. Amendment No. 2 was signed on May 8, 2006, enabling the Board to accelerate its provision of funds to the USACE in an amount not to exceed the current estimate of the Board's required cash contribution for the SRBPP. Amendment No. 3 was signed on June 16, 2006, to enable the Board to seek financial credit for its construction of setback levees located at Levee Miles 0.8L, 1.1L, and 2.4L of Cache Creek, under Section 215 of the Flood Control Act of 1958 (PL90-483), as amended.

With the approval of the PACR, a new PPA to implement the supplemental authorization of Phase II for an additional 80,000 LF has been prepared for the Board's consideration. The PPA is a legally binding document between the federal government and the State for construction of water resources projects and describes the Project and the responsibilities of the parties in cost sharing and executing the work. USACE, in coordination with DWR and Board staff, prepared the PPA. A Project Management Plan (PMP) will be developed by the USACE after completion of the PPA.

Total Project costs are estimated to be \$815 million with \$350 million allocated to the federal government and \$285 million allocated to the Board. Section 902 of WRDA 1986 establishes a maximum cost for most projects when one is included in the statutory authority for a project. WRDA 2007 did not establish an authorized cost and prior authorizations pre-date WRDA 1986, so a maximum cost limit does not apply. The Project is limited mainly by the 80,000 feet of bank protection to be constructed and the availability of federal funds. If real estate costs exceed those projected, the Board may be required to fund up to 45% of total Project costs plus the 5% cash contribution. The cost of long-term annual operation and maintenance is estimated to be \$120,000 per site and is not part of the cost estimate of the Project. The LMA is required to assume the responsibilities for operation and maintenance where repairs are implemented. Work is funded through assessments on affected property owners.

Article II, Section E of the PPA requires the Board to operate and maintain the completed work within the Project upon notice and receipt of a revised operation and maintenance manual along with as-built drawings. By approving the PPA, the Board is delegating authority to staff to transfer the operation and maintenance responsibilities required of the completed project to the LMA. Staff will review the as-built drawings and revised operation and maintenance manual along with the assurances provided by local interests prior to issuing a letter transferring operation and maintenance responsibilities for the completed work to the LMA.

The PPA includes a Certificate of Authority, to be signed by Board counsel, a Certification Regarding Lobbying, to be signed by the Board President, and a Self-Certification of Financial Capability, to be signed by the Board's Executive Officer. Upon approval of the PPA in substantially the form provided in Attachment B, the Board is requested to sign only these documents and provide them to the USACE to continue the process of completing the PPA. Once the parties have agreed to a final form of the PPA, the USACE and the Board will sign the PPA jointly at a signing ceremony currently scheduled for September 8, 2023.

**9.0 – CALIFORNIA ENVIRONMENTAL QUALITY ACT ANALYSIS AND FINDINGS**

SRBPP, Phase II Supplemental Authorization of the PACR, EIS/EIR (State Clearinghouse Number 2009012081, March 2020) was jointly prepared by USACE as the NEPA lead agency and the Board as the CEQA lead agency. The Board made appropriate CEQA findings for significant and unavoidable impacts, adopted all required CEQA Findings, Mitigation Monitoring and Reporting Program, Statement of Overriding Considerations, and certified the Phase II Supplemental Authorization EIS/EIR as further described in its previously adopted Resolution 2020-04 on July 24, 2020. Subsequently, the Board filed a Notice of Determination with the State Clearinghouse on August 26, 2020. The analysis contained in the EIS/EIR together with the CEQA Findings are adequate for the Board's use as a decision-making body and as the lead agency to approve the PPA for its consideration of discretionary actions necessary to implement SRBPP repairs within its jurisdiction. The Board's approval and execution of the PPA is a discretionary action necessary to coordinate and carry out the joint obligations of the project partners to construct SRBPP repairs and falls within the scope of the Board's prior CEQA findings.

Along with approving the PPA, the proposed administrative action consists of the Board delegating authority to staff to transfer the operation and maintenance responsibilities for future levee improvements completed within the supplemental authority to Phase II to the respective LMA in accordance with the federal operation and maintenance manual. The proposed action does not have the potential to result in either a direct physical change in the environment or a reasonably foreseeable indirect physical change in the environment, and thus, is not a "project" for purposes of CEQA (CEQA Public Resources Code Section 21065; CEQA California Code of Regulations, Title 14, Section 15378(a)).

**10.0 – STAFF RECOMMENDATION**

Staff recommends the Board to adopt Resolution No. 2023-06, in substantially the form provided in Attachment A, which:

**Finds**

- The approval and execution of the PPA is a discretionary action that falls within the scope of the Board's prior CEQA findings under Resolution 2020-04 (CEQA California Code of Regulations, Title 14, Section 15162 and 15168).
- The transfer of operation and maintenance responsibilities is a continuing administrative activity and is thus not a "project" (CEQA Public Resources Code



Section 21065 and CEQA California Code of Regulations, Title 14, Section 15378(a).

**Approves**

- The Project Partnership Agreement in substantially the form provided in Attachment B.

**Delegates**

- Authority to the Board President to sign the PPA.
- Authority to Board staff to transfer the operation and maintenance responsibilities for completed work within the Project.

**11.0 – ATTACHMENTS**

- A. Resolution No. 2023-06
- B. Project Partnership Agreement
- C. General Study Area Map
- D. Project Conceptual Designs
- E. Selected Critical Sites from the 2017 Erosion Inventory

**8.0 – REVIEWERS**

Prepared by: Mike Zelazo, Senior Engineer  
Jennifer Calles, Senior Environmental Scientist

Staff Review: Greg Harvey, Flood System Improvements Branch Chief  
Andrea Buckley, Environmental Services and Land Management  
Division Chief  
Michael C. Wright, Chief Engineer

Legal Review: Jit Dua, Board Counsel

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

**RESOLUTION NO. 2023-06**

**EXECUTION OF A PROJECT PARTNERSHIP AGREEMENT  
FOR  
THE SACRAMENTO RIVER BANK PROTECTION PROJECT  
PHASE II SUPPLEMENTAL AUTHORIZATION**

- A. WHEREAS**, the Sacramento River Flood Control Project (SRFCP) was authorized by Congress and approved on March 1, 1917, then amended on May 15, 1928, August 26, 1937, August 18, 1941, August 17, 1954, and July 14, 1960; and
- B. WHEREAS**, the Sacramento River Bank Protection Project (SRBPP) was authorized by Congress in Section 203 of Flood Control Act of 1960, Public Law (PL) 86-645, 74 Statute 498 (First Phase); as supplemented by Section 202 of the River Basin Monetary Authorization Act of 1974; PL 93-252, 88 Statute 49 (Second Phase); and as supplemented by Section 140 of the Further Continuing Appropriations Act of 1983; PL 97-377, 96 Statute 1916, to preserve the integrity of the SRFCP levee system; and
- C. WHEREAS**, California Water Code Sections 8617, 8617.1, 12648.1, and 12649.1 authorize the State, acting by and through the Central Valley Flood Protection Board (Board, formerly known as the Reclamation Board of the State of California), to give satisfactory assurances to cooperate on the SRFCP and partner with U.S. Army Corps of Engineers (USACE) on the SRBPP as the non-federal sponsor; and
- D. WHEREAS**, Section 3031 of the Water Resources Development Act of 2007, PL 110-114, 121 Statute 1113 (WRDA 2007), which increased linear feet (LF) of bank protection to the original SRBPP Second Phase of 405,000 LF authorization to 485,000 LF; and
- E. WHEREAS**, to support the expanded SRBPP authority to add an additional 80,000 LF to the SRBPP, USACE Sacramento District developed a Post-Authorization Change Report (PACR) and supporting documentation including the joint programmatic SRBPP Phase II Supplemental Authorization Environmental Impact Statement and Environmental Impact Report (EIS/EIR); and
- F. WHEREAS**, the Board is the non-federal sponsor and the Lead Agency under Public Resources Code Section 21100 for the SRBPP Phase II Supplemental Authorization EIS/EIR, and USACE is the federal sponsor and Lead Agency under the National Environmental Policy Act (NEPA); and
- G. WHEREAS**, the Board, as CEQA lead agency, certified the SRBPP Phase II Supplemental Authorization EIS/EIR (State Clearinghouse No. 2009012081) through Resolution 2020-04 including a Statement of Findings, Statement of Overriding Considerations and a Mitigation Monitoring and Reporting Program (MMRP), and filed a Notice of Determination (NOD) on August 26, 2020 approving the PACR for SRBPP; and

- H. WHEREAS**, the SRBPP Phase II Supplemental Authorization EIS/EIR is a programmatic level document for CEQA purposes and further project level supplemental environmental analysis is required prior to beginning any construction; and
- I. WHEREAS**, the Project Partnership Agreement (PPA) describes the obligations of the federal and non-federal sponsors to complete construction activities and the cost-share of the supplemental authorization to Phase II for an additional 80,000 LF of bank protection (Project); and
- J. WHEREAS**, the construction costs are projected to be \$815,313,736 and will be cost-shared at 65% federal and 35% non-federal up to a maximum of 50% non-federal; and
- K. WHEREAS**, the total non-federal sponsor's share of such projected costs is \$285,359,807, which includes the 5% contribution of funds projected to be \$40,765,687, creditable real property interests, relocations, and placement area improvements project to be \$203,828,430, creditable in-kind contributions projected to be \$40,765,687, and any additional amount of funds required to meet the minimum 35% cost-share; and
- L. WHEREAS**, the analysis contained in the SRBPP Phase II Supplemental Authorization EIS/EIR together with the CEQA Findings are adequate for the Board's use as a decision-making body and as the lead agency to approve the PPA for its consideration of discretionary actions necessary to implement SRBPP repairs within its jurisdiction; and
- M. WHEREAS**, Article II, Section E of the PPA requires the Board to operate and maintain the completed work within the Project upon notice and receipt of revised operation and maintenance manuals along with as-built-drawings; and
- N. WHEREAS**, the Board transfers the responsibility for operation and maintenance of completed work in the SRBPP to local maintaining agencies through assurance agreements and provides these assurances to the USACE; and
- O. WHEREAS**, the transfer of operation and maintenance responsibilities to local maintaining agencies for the levee improvements completed within the supplemental authorization to Phase II of the SRBPP is not a project pursuant to Public Resources Code Section 21065 and CEQA, California Code of Regulations, Title 14, Section 15378(a) because the activity does not have the potential to result in either a direct physical change in the environment or a reasonably foreseeable indirect physical change in the environment.

**NOW, THEREFORE, BE IT RESOLVED that the Board:**

1. Finds the approval and execution of the PPA is a discretionary action that falls within the scope of the Board's prior CEQA findings under Resolution 2020-04 (CEQA California Code of Regulations, Title 14, Section 15162 and 15168).
2. Finds that the transfer of operation and maintenance responsibilities and corresponding documents for the completed work to local maintaining agencies is not a "project" for purposes of the CEQA (Public Resources Code Section 21065; CEQA California Code of Regulations, Title 14, Section 15378(a)).
3. Adopts as findings the facts set forth in the accompanying Staff Report.

4. Reviewed all Attachments, Exhibits, Figures, and References listed in the Staff Report.
5. Approves the PPA between the USACE and the Board for the Project in substantially the form provided.
6. Delegates authority to the Board President to sign the PPA.
7. Delegates authority to Board staff to transfer the operation and maintenance responsibilities for completed work within the Project.

PASSED AND ADOPTED by vote of the Board on \_\_\_\_\_, 2023.

By: \_\_\_\_\_

Jane Dolan  
President

By: \_\_\_\_\_

Brian J. Johnson  
Secretary

## Attachment B: Draft Project Partnership Agreement

PROJECT PARTNERSHIP AGREEMENT  
BETWEEN  
THE DEPARTMENT OF THE ARMY  
AND  
THE STATE OF CALIFORNIA  
FOR  
THE SACRAMENTO RIVER BANK PROTECTION PROJECT  
CALIFORNIA

THIS AGREEMENT is entered into this \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, by and between the Department of the Army (hereinafter the “Government”), represented by the U.S. Army Corps of Engineers Sacramento District Commander and the State of California (hereinafter the “Non-Federal Sponsor”), represented by its Central Valley Flood Protection Board President.

WITNESSETH, THAT:

WHEREAS, construction of the Sacramento River Bank Protection Project, California (hereinafter the “Project”, as defined in Article I.A. of this Agreement) was authorized by Section 203 of the Flood Control Act of 1960 (Public Law 86-645; 74 Stat. 498), as supplemented by Section 202 of the River Basin Monetary Authorization Act of 1974 (Public Law 93-251; 88 Stat. 49), Section 140 of Public Law 97-377 (96 Stat. 1830), and by Section 3031 of the Water Resources Development Act of 2007 (Public Law 110-114; 121 Stat. 1113);

WHEREAS, Section 103 of the Water Resources Development Act (WRDA) of 1986, as amended (33 U.S.C. 2213), specifies the cost-sharing requirements applicable to the Project; and

WHEREAS, the Government and the Non-Federal Sponsor have the full authority and capability to perform in accordance with the terms of this Agreement and acknowledge that Section 221 of the Flood Control Act of 1970, as amended (42 U.S.C. 1962d-5b), provides that this Agreement shall be enforceable in the appropriate district court of the United States.

NOW, THEREFORE, the parties agree as follows:

### ARTICLE I - DEFINITIONS

A. The term “Project” means design and construction of levee improvement measures to address erosion concerns identified for levees along the Sacramento River and the lower reaches of the American River, Feather River, Yuba River, and Bear River, up to 80,000 lineal feet, as generally described in the Post Authorization Change Report, Sacramento River Bank Protection Project, California, dated June 2020 and approved by the Deputy Commanding General for Civil Works and Emergency Operations on June 30, 2020.

## Attachment B: Draft Project Partnership Agreement (cont.)

B. The term “HTRW” means hazardous, toxic, and radioactive wastes, which includes any material listed as a “hazardous substance” (42 U.S.C. 9601(14)) regulated under the Comprehensive Environmental Response, Compensation, and Liability Act (hereinafter “CERCLA”) (42 U.S.C. 9601-9675) and any other regulated material in accordance with applicable laws and regulations.

C. The term “construction costs” means all costs incurred by the Government and Non-Federal Sponsor in accordance with the terms of this Agreement that are directly related to design and construction of the Project and cost shared. The term includes the Government’s engineering, design, and construction costs; the Government’s supervision and administration costs; the Non-Federal Sponsor’s creditable costs for providing real property interests, placement area improvements, and relocations and for providing in-kind contributions, if any; costs for mitigation, including monitoring and adaptive management, if applicable; and the costs of historic preservation activities except for data recovery for historic properties. The term does not include any costs for operation, maintenance, repair, rehabilitation, or replacement; HTRW cleanup and response; dispute resolution; participation by the Government and the Non-Federal Sponsor in the Project Coordination Team to discuss significant issues and actions; audits; betterments; or the Non-Federal Sponsor’s cost of negotiating this Agreement.

D. The term “real property interests” means lands, easements, and rights-of-way, including those required for relocations and borrow and dredged material placement areas. Acquisition of real property interests may require the performance of relocations.

E. The term “relocation” means the provision of a functionally equivalent facility to the owner of a utility, cemetery, highway, railroad (excluding existing railroad bridges and approaches thereto), or public facility when such action is required by applicable legal principles of just compensation. Providing a functionally equivalent facility may include the alteration, lowering, raising, or replacement and attendant demolition of the affected facility or part thereof.

F. The term “placement area improvements” means the improvements required on real property interests to enable the ancillary placement of material that has been dredged or excavated during construction, operation, and maintenance of the Project, including, but not limited to, retaining dikes, wasteweirs, bulkheads, embankments, monitoring features, stilling basins, and dewatering pumps and pipes.

G. The term “functional portion thereof” means a portion of the Project that has been completed and that can function independently, as determined in writing by the District Commander for Sacramento District (hereinafter the “District Commander”), although the remainder of the Project is not yet complete.

H. The term “in-kind contributions” means those materials or services provided by the Non-Federal Sponsor that are identified as being integral to the Project by the Division Commander for South Pacific Division (hereinafter the “Division Commander”). To be integral to the Project, the material or service must be part of the work that the Government would otherwise have undertaken for design and construction of the Project. The in-kind contributions also include any initial investigations performed by the Non-Federal Sponsor to identify the

## Attachment B: Draft Project Partnership Agreement (cont.)

existence and extent of any HTRW that may exist in, on, or under real property interests required for the Project; however, it does not include HTRW cleanup and response.

I. The term “betterment” means a difference in construction of an element of the Project that results from the application of standards that the Government determines exceed those that the Government would otherwise apply to construction of that element.

J. The term “fiscal year” means one year beginning on October 1<sup>st</sup> and ending on September 30<sup>th</sup> of the following year.

K. The term “Maximum Lineal Feet Limit” means the statutory limitation, as applicable, on the total lineal feet of the Project, as stated in Section 3031 of the Water Resources Development Act of 2007, Public Law 110-114 (121 Stat. 1113).

### ARTICLE II - OBLIGATIONS OF THE PARTIES

A. In accordance with Federal laws, regulations, and policies, the Government shall complete design and undertake construction of the Project using funds appropriated by the Congress and funds provided by the Non-Federal Sponsor. In carrying out its obligations under this Agreement, the Non-Federal Sponsor shall comply with all the requirements of applicable Federal laws and implementing regulations, including but not limited to, if applicable, Section 601 of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d), and Department of Defense Directive 5500.11 issued pursuant thereto; the Age Discrimination Act of 1975 (42 U.S.C. 6102); and the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), and Army Regulation 600-7 issued pursuant thereto.

B. The Non-Federal Sponsor shall contribute a minimum of 35 percent, up to a maximum of 50 percent, of construction costs, as follows:

1. The Non-Federal Sponsor shall pay 5 percent of construction costs.

2. In accordance with Article III, the Non-Federal Sponsor shall provide the real property interests, placement area improvements, and relocations required for construction, operation, and maintenance of the Project. If the Government determines that the Non-Federal Sponsor’s estimated credits for real property interests, placement area improvements, and relocations will exceed 45 percent of construction costs, the Government, in its sole discretion, may acquire any of the remaining real property interests, construct any of the remaining placement area improvements, or perform any of the remaining relocations with the cost of such work included as a part of the Government’s cost of construction. Nothing in this provision affects the Non-Federal Sponsor’s responsibility under Article IV for the performance and costs of any HTRW cleanup and response related thereto.

3. If providing in-kind contributions as a part of its cost share, the Non-Federal Sponsor shall obtain all applicable licenses and permits necessary for such work. As functional portions of the work are completed, the Non-Federal Sponsor shall begin operation and

## Attachment B: Draft Project Partnership Agreement (cont.)

maintenance of such work. Upon completion of the work, the Non-Federal Sponsor shall so notify the Government within 30 calendar days and provide the Government with a copy of as-built drawings for the work.

4. After determining the amount to meet the 5 percent required by paragraph B.1., above, for the then-current fiscal year and the estimated amount of credit that will be afforded to the Non-Federal Sponsor pursuant to paragraphs B.2. and B.3., above, the Government shall determine the estimated additional amount of funds required from the Non-Federal Sponsor to meet its minimum 35 percent cost share for the then-current fiscal year. No later than 60 calendar days after receipt of notification from the Government, the Non-Federal Sponsor shall provide the full amount of such required funds to the Government in accordance with Article VI.C.

5. No later than August 1<sup>st</sup> prior to each subsequent fiscal year, the Government shall provide the Non-Federal Sponsor with a written estimate of the full amount of funds required from the Non-Federal Sponsor during that fiscal year to meet its cost share. No later than September 1<sup>st</sup> prior to that fiscal year, the Non-Federal Sponsor shall provide the full amount of such required funds to the Government in accordance with Article VI.C.

C. To the extent practicable and in accordance with Federal law, regulations, and policies, the Government shall afford the Non-Federal Sponsor the opportunity to review and comment on contract solicitations, including relevant plans and specifications, prior to the Government's issuance of such solicitations; proposed contract modifications, including change orders; and contract claims prior to resolution thereof. Ultimately, the contents of solicitations, award of contracts, execution of contract modifications, and resolution of contract claims shall be exclusively within the control of the Government.

D. The Government, as it determines necessary, shall undertake actions associated with historic preservation, including, but not limited to, the identification and treatment of historic properties as those properties are defined in the National Historic Preservation Act of 1966, as amended (54 U.S.C. 300101-307108). All costs incurred by the Government for such work (including the mitigation of adverse effects other than data recovery) shall be included in construction costs and shared in accordance with the provisions of this Agreement. If historic properties are discovered during construction and the effect(s) of construction are determined to be adverse, strategies shall be developed to avoid, minimize, or mitigate these adverse effects. In accordance with 54 U.S.C. 312507, up to 1 percent of the total amount authorized to be appropriated for the Project may be applied toward data recovery of historic properties and such costs shall be borne entirely by the Government. In the event that costs associated with data recovery of historic properties exceed 1 percent of the total amount authorized to be appropriated for the Project, in accordance with 54 U.S.C. 312508, the Government will seek a waiver from the 1 percent limitation under 54 U.S.C. 312507 and upon receiving the waiver, will proceed with data recovery at full Federal expense. Nothing in this Agreement shall limit or otherwise prevent the Non-Federal Sponsor from voluntarily contributing costs associated with data recovery that exceed 1 percent.



## Attachment B: Draft Project Partnership Agreement (cont.)

E. When the District Commander determines that construction of the Project, or a functional portion thereof, is complete, the District Commander shall so notify the Non-Federal Sponsor in writing within 30 calendar days of such determination, and the Non-Federal Sponsor, at no cost to the Government, shall operate, maintain, repair, rehabilitate, and replace the Project, or such functional portion thereof. Such activities will generally consist of periodic inspections, vegetation management, documentation of any perceived or actual defects and coordination of the appropriate repair or corrective action. The Government shall furnish the Non-Federal Sponsor with an Operation, Maintenance, Repair, Rehabilitation, and Replacement Manual (hereinafter the “OMRR&R Manual”) and copies of all as-built drawings for the completed work.

1. The Non-Federal Sponsor shall conduct its operation, maintenance, repair, rehabilitation, and replacement responsibilities in a manner consistent with the authorized purpose of the Project and in accordance with applicable Federal laws and regulations, and the Government’s specific directions in the OMRR&R Manual. The Government and the Non-Federal Sponsor shall consult on any subsequent updates or amendments to the OMRR&R Manual.

2. The Government may enter, at reasonable times and in a reasonable manner, upon real property interests that the Non-Federal Sponsor now or hereafter owns or controls to inspect the Project, and, if necessary, to undertake any work necessary to the functioning of the Project for its authorized purpose. If the Government determines that the Non-Federal Sponsor is failing to perform its obligations under this Agreement and the Non-Federal Sponsor does not correct such failures within a reasonable time after notification by the Government, the Government, at its sole discretion, may undertake any operation, maintenance, repair, rehabilitation, or replacement of the Project. No operation, maintenance, repair, rehabilitation, or replacement by the Government shall relieve the Non-Federal Sponsor of its obligations under this Agreement or preclude the Government from pursuing any other remedy at law or equity to ensure faithful performance of this Agreement.

F. Not less than once each year, the Non-Federal Sponsor shall inform affected interests of the extent of risk reduction afforded by the Project.

G. The Non-Federal Sponsor shall ensure participation in and compliance with applicable Federal floodplain management and flood insurance programs. The Non-Federal Sponsor may execute agreements with other non-Federal entities to ensure such participation and compliance.

H. In accordance with Section 402 of WRDA 1986, as amended (33 U.S.C. 701b-12), the Non-Federal Sponsor shall prepare a floodplain management plan for the Project within one year after the effective date of this Agreement and shall implement such plan no later than one year after completion of construction of the Project. The Non-Federal Sponsor may execute agreements with other non-Federal entities to ensure such preparation and implementation. 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

## Attachment B: Draft Project Partnership Agreement (cont.)

preserve the level of flood risk reduction provided by such work. The Non-Federal Sponsor shall provide an information copy of the plan to the Government.

I. The Non-Federal Sponsor shall ensure publication of floodplain information in the area concerned and shall provide this information to zoning and other regulatory agencies for their use in adopting regulations, or taking other actions, to prevent unwise future development and to ensure compatibility with the Project. The Non-Federal Sponsor may execute agreements with other non-Federal entities to ensure such publication and provision.

J. The Non-Federal Sponsor shall prevent obstructions or encroachments on the Project (including prescribing and enforcing regulations to prevent such obstructions or encroachments) that might reduce the level of flood risk reduction the Project affords, hinder operation and maintenance of the Project, or interfere with the Project's proper function.

K. The Non-Federal Sponsor shall not use Federal program funds to meet any of its obligations under this Agreement unless the Federal agency providing the funds verifies in writing that the funds are authorized to be used for the Project. Federal program funds are those funds provided by a Federal agency, plus any non-Federal contribution required as a matching share therefor.

L. In addition to the ongoing, regular discussions between the parties regarding Project delivery, the Government and the Non-Federal Sponsor may establish a Project Coordination Team to discuss significant issues or actions. The Government's costs for participation on the Project Coordination Team shall not be included in construction costs that are cost shared. The Non-Federal Sponsor's costs for participation on the Project Coordination Team shall not be included in construction costs that are cost shared and shall be paid solely by the Non-Federal Sponsor without reimbursement or credit by the Government.

M. The Non-Federal Sponsor may request in writing that the Government perform betterments on the Non-Federal Sponsor's behalf. Each request shall be subject to review and written approval by the Division Commander. If the Government agrees to such request, the Non-Federal Sponsor, in accordance with Article VI.F., must provide funds sufficient to cover the costs of such work in advance of the Government performing the work. In addition, the Non-Federal Sponsor is responsible for providing, at no cost to the Government, any additional real property interests, relocations, and placement area improvements determined by the Government to be required for construction, operation, and maintenance of such work.

### ARTICLE III - REAL PROPERTY INTERESTS, PLACEMENT AREA IMPROVEMENTS, AND RELOCATIONS

A. The Government, after consultation with the Non-Federal Sponsor, shall determine the real property interests required for construction, operation, and maintenance of the Project. The Government shall provide the Non-Federal Sponsor with general written descriptions, including maps as appropriate, of the real property interests that the Government determines the Non-Federal Sponsor must provide for construction, operation, and maintenance of the Project,

## Attachment B: Draft Project Partnership Agreement (cont.)

and shall provide the Non-Federal Sponsor with a written notice to proceed with acquisition. The Non-Federal Sponsor shall acquire the real property interests and provide the Government with authorization for entry thereto according to the Government's construction schedule for the Project. The Non-Federal Sponsor shall ensure that real property interests provided for the Project are retained in public ownership for uses compatible with the authorized purposes of the Project and, in accordance with Article IV.A., that the real property interests are investigated and that HTRW does not exist in, on, or under the real property interests.

B. The Government, after consultation with the Non-Federal Sponsor, shall determine the placement area improvements required for construction, operation, and maintenance of the Project, provide the Non-Federal Sponsor with general written descriptions, including maps as appropriate, of such improvements, and provide the Non-Federal Sponsor with a written notice to proceed with such improvements. The Non-Federal Sponsor shall construct the improvements in accordance with the Government's construction schedule for the Project.

C. The Government, after consultation with the Non-Federal Sponsor, shall determine the relocations required for construction, operation, and maintenance of the Project, provide the Non-Federal Sponsor with general written descriptions, including maps as appropriate, of such relocations, and provide the Non-Federal Sponsor with a written notice to proceed with such relocations. The Non-Federal Sponsor shall perform or ensure the performance of these relocations in accordance with the Government's construction schedule for the Project.

D. To the maximum extent practicable, no later than 30 calendar days after the Government provides the Non-Federal Sponsor with written descriptions and maps of the real property interests, placement area improvements, and relocations required for construction, operation, and maintenance of the Project, the Non-Federal Sponsor may request in writing that the Government acquire all or specified portions of such real property interests, construct placement area improvements, or perform the necessary relocations. If the Government agrees to such a request, the Non-Federal Sponsor, in accordance with Article VI.F., must provide funds sufficient to cover the costs of the acquisitions, placement area improvements, or relocations in advance of the Government performing the work. The Government shall acquire the real property interests, construct the placement area improvements, and perform the relocations, applying Federal laws, policies, and procedures. The Government shall acquire real property interests in the name of the Non-Federal Sponsor except, if acquired by eminent domain, the Government shall convey all of its right, title, and interest to the Non-Federal Sponsor by quitclaim deed or deeds. The Non-Federal Sponsor shall accept delivery of such deed or deeds. The Government's provision of real property interests, placement area improvements, or performing relocations on the Non-Federal Sponsor's behalf does not alter the Non-Federal Sponsor's responsibility under Article IV for the performance and costs of any HTRW cleanup and response related thereto.

E. In acquiring the real property interests for the Project, the Non-Federal Sponsor assures the Government that it will comply with the following:

## Attachment B: Draft Project Partnership Agreement (cont.)

(1) fair and reasonable relocation payments and assistance shall be provided to or for displaced persons, as are required to be provided by a Federal agency under 42 U.S.C. 4622, 4623 and 4624;

(2) relocation assistance programs offering the services described in 42 U.S.C. 4625 shall be provided to such displaced persons;

(3) within a reasonable period of time prior to displacement, comparable replacement dwellings will be available to displaced persons in accordance with 42 U.S.C. 4625(c)(3);

(4) in acquiring real property, the Non-Federal Sponsor will be guided, to the greatest extent practicable under State law, by the land acquisition policies in 42 U.S.C. 4651 and the provisions of 42 U.S.C. 4652; and

(5) property owners will be paid or reimbursed for necessary expenses as specified in 42 U.S.C. 4653 and 4654.

### ARTICLE IV - HTRW

A. The Non-Federal Sponsor shall be responsible for undertaking any investigations to identify the existence and extent of any HTRW regulated under applicable law that may exist in, on, or under real property interests required for construction, operation, and maintenance of the Project.

B. In the event it is discovered that HTRW exists in, on, or under any of the real property interests needed for construction, operation, and maintenance of the Project, the Non-Federal Sponsor and the Government shall provide written notice to each other within 15 calendar days of such discovery, in addition to providing any other notice required by applicable law. If HTRW is discovered prior to acquisition, the Non-Federal Sponsor shall not proceed with the acquisition of such real property interests until the parties agree that the Non-Federal Sponsor should proceed. If HTRW is discovered after acquisition of the real property interests, no further Project activities within the contaminated area shall proceed until the parties agree on an appropriate course of action.

C. If HTRW is found to exist in, on, or under any required real property interests, the parties shall consider any liability that might arise under applicable law and determine whether to initiate construction, or if already initiated, whether to continue, suspend, or terminate construction.

1. Should the parties initiate or continue construction, the Non-Federal Sponsor shall be solely responsible, as between the Government and the Non-Federal Sponsor, for the performance and costs of HTRW cleanup and response, including the costs of any studies and investigations necessary to determine an appropriate response to the contamination. The Non-Federal Sponsor shall pay such costs without reimbursement or credit by the Government. In no

## Attachment B: Draft Project Partnership Agreement (cont.)

event will the Government proceed with that construction before the Non-Federal Sponsor has completed the required cleanup and response actions.

2. In the event the parties cannot reach agreement on how to proceed or the Non-Federal Sponsor fails to discharge its responsibilities under this Article upon direction by the Government, the Government may suspend or terminate construction. Additionally, the Government may undertake any actions it determines necessary to avoid a release of such HTRW with the Non-Federal Sponsor responsible for such costs without credit or reimbursement by the Government.

D. In the event of a HTRW discovery, the Non-Federal Sponsor and the Government shall initiate consultation with each other within 15 calendar days in an effort to ensure that responsible parties bear any necessary cleanup and response costs as required by applicable law. Any decision made pursuant to this Article shall not relieve any third party from any HTRW liability that may arise under applicable law.

E. To the maximum extent practicable, the Government and Non-Federal Sponsor shall perform their responsibilities under this Agreement in a manner that will not cause HTRW liability to arise under applicable law.

F. As between the Government and the Non-Federal Sponsor, the Non-Federal Sponsor shall be considered the owner and operator of the Project for purposes of CERCLA liability or other applicable law.

### ARTICLE V - CREDIT FOR REAL PROPERTY INTERESTS, PLACEMENT AREA IMPROVEMENTS, RELOCATIONS, AND IN-KIND CONTRIBUTIONS

A. The Government shall include in construction costs, and credit towards the Non-Federal Sponsor's share of such costs, the value of Non-Federal Sponsor provided real property interests, placement area improvements, and relocations, and the costs of in-kind contributions determined by the Government to be required for the Project.

B. To the maximum extent practicable, no later than 3 months after it provides the Government with authorization for entry onto a real property interest or pays compensation to the owner, whichever occurs later, the Non-Federal Sponsor shall provide the Government with documents sufficient to determine the amount of credit to be provided for the real property interests in accordance with paragraphs C.1. of this Article. To the maximum extent practicable, no less frequently than on a quarterly basis, the Non-Federal Sponsor shall provide the Government with documentation sufficient for the Government to determine the amount of credit to be provided for other creditable items in accordance with paragraph C. of this Article.

C. The Government and the Non-Federal Sponsor agree that the amount of costs eligible for credit that are allocated by the Government to construction costs shall be determined and credited in accordance with the following procedures, requirements, and conditions and subject

## Attachment B: Draft Project Partnership Agreement (cont.)

to audit in accordance with Article X.B. to determine reasonableness, allocability, and allowability of costs.

### 1. Real Property Interests.

a. General Procedure. For each creditable real property interest, the Non-Federal Sponsor shall obtain an appraisal of the fair market value of such interest that is prepared by a qualified appraiser who is acceptable to the parties. Subject to valid jurisdictional exceptions, the appraisal shall conform to the Uniform Standards of Professional Appraisal Practice. The appraisal must be prepared in accordance with the applicable rules of just compensation, as specified by the Government.

(1) Date of Valuation. For any real property interests owned by the Non-Federal Sponsor on the effective date of this Agreement and required for construction performed after the effective date of this Agreement, the date the Non-Federal Sponsor provides the Government with authorization for entry thereto shall be used to determine the fair market value. For any real property interests required for in-kind contributions covered by an In-Kind Memorandum of Understanding, the date of initiation of construction shall be used to determine the fair market value. The fair market value of real property interests 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) Except for real property interests acquired through eminent domain proceedings instituted after the effective date of this Agreement, the Non-Federal Sponsor shall submit an appraisal for each real property interest to the Government for review and approval no later than, to the maximum extent practicable, 60 calendar days after the Non-Federal Sponsor provides the Government with an authorization for entry for such interest or concludes the acquisition of the interest through negotiation or eminent domain proceedings, whichever occurs later. If, after coordination and consultation with the Government, the Non-Federal Sponsor is unable to provide an appraisal that is acceptable to the Government, the Government shall obtain an appraisal to determine the fair market value of the real property interest for crediting purposes.

(3) The Government shall credit the Non-Federal Sponsor the appraised amount approved by the Government. Where the amount paid or proposed to be paid by the Non-Federal Sponsor exceeds the approved appraised amount, the Government, at the Non-Federal Sponsor's request, 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 appraised amount for crediting purposes.

b. Eminent Domain Procedure. For real property interests acquired by eminent domain proceedings instituted after the effective date of this Agreement, the Non-Federal Sponsor shall notify the Government in writing of its intent to institute such proceedings and submit the appraisals of the specific real property interests to be acquired for review and approval by the Government. If the Government provides written approval of the appraisals, the Non-Federal Sponsor shall use the amount set forth in such appraisals as the estimate of just

## Attachment B: Draft Project Partnership Agreement (cont.)

compensation for the purpose of instituting the eminent domain proceeding. If the Government provides written disapproval of the appraisals, the Government and the Non-Federal Sponsor shall consult to promptly resolve the issues that are identified in the Government's written disapproval. In the event that the issues cannot be resolved, 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. The fair market value for crediting purposes shall be either the amount of the court award for the real property interests taken or the amount of any stipulated settlement or portion thereof that the Government approves in writing.

c. Waiver of Appraisal. Except as required by paragraph C.1.b. of this Article, the Government may waive the requirement for an appraisal pursuant to this paragraph if, in accordance with 49 C.F.R. Section 24.102(c)(2):

(1) the owner is donating the real property interest to the Non-Federal Sponsor and releases the Non-Federal Sponsor in writing from its obligation to appraise the real property interest, and the Non-Federal Sponsor submits to the Government a copy of the owner's written release; or

(2) the Non-Federal Sponsor determines that an appraisal is unnecessary because the valuation problem is uncomplicated and the anticipated value of the real property interest proposed for acquisition is estimated at \$25,000 or less, based on a review of available data. When the Non-Federal Sponsor determines that an appraisal is unnecessary, the Non-Federal Sponsor shall prepare the written waiver valuation required by 49 C.F.R. Section 24.102(c)(2) and submit a copy thereof to the Government for approval. When the anticipated value of the real property interest exceeds \$10,000, up to a maximum of \$25,000, the Non-Federal Sponsor must offer the owner the option of having the Non-Federal Sponsor appraise the real property interest.

d. Incidental Costs. The Government shall include in construction costs and credit towards the Non-Federal Sponsor's share of such costs, the incidental costs the Non-Federal Sponsor incurred in acquiring any real property interests required pursuant to Article III for the Project within a five-year period preceding the effective date of this Agreement, or at any time after the effective date of this Agreement, that are documented to the satisfaction of the Government. Such incidental costs shall include closing and title costs, appraisal costs, survey costs, attorney's fees, plat maps, mapping costs, actual amounts expended for payment of any relocation assistance benefits provided in accordance with Article III.E., and other payments by the Non-Federal Sponsor for items that are generally recognized as compensable, and required to be paid, by applicable state law due to the acquisition of a real property interest pursuant to Article III.

2. Placement Area Improvements. The Government shall include in construction costs and credit towards the Non-Federal Sponsor's share of such costs, the value of placement area improvements required for the Project. The value shall be equivalent to the costs, documented to the satisfaction of the Government, that the Non-Federal Sponsor incurred to provide any placement area improvements required for the Project. Such costs include actual costs of constructing the improvements; planning, engineering, and design costs; and supervision

## Attachment B: Draft Project Partnership Agreement (cont.)

and administration costs, but shall not include any costs associated with betterments, as determined by the Government.

3. Relocations. The Government shall include in construction costs and credit towards the Non-Federal Sponsor's share of such costs the value of any relocations performed by the Non-Federal Sponsor that are directly related to construction, operation, and maintenance of the Project.

a. 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 the salvage value of any removed items.

b. For a relocation of a highway, which is any highway, roadway, or street, including any bridge thereof, that is owned by a public entity, 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.

c. Relocation costs, as determined by the Government, include actual costs of performing the relocation; planning, engineering, and design costs; and supervision and administration costs. Relocation costs do not include any costs associated with betterments, as determined by the Government, nor any additional cost of using new material when suitable used material is available.

4. In-Kind Contributions. The Government shall include in construction costs and credit towards the Non-Federal Sponsor's share of such costs, the value of in-kind contributions that are integral to the Project.

a. The value shall be equivalent to the costs, documented to the satisfaction of the Government, that the Non-Federal Sponsor incurred to provide the in-kind contributions, which may include engineering and design; construction; and supervision and administration, but shall not include any costs associated with betterments, as determined by the Government. Appropriate documentation includes invoices and certification of specific payments to contractors, suppliers, and the Non-Federal Sponsor's employees.

b. No credit shall be afforded for the following: interest charges, or any adjustment to reflect changes in price levels between the time the in-kind contributions are completed and credit is afforded; the value of in-kind contributions obtained at no cost to the Non-Federal Sponsor; any in-kind contributions performed prior to the effective date of this Agreement unless covered by an In-Kind Memorandum of Understanding between the Government and Non-Federal Sponsor; or costs that exceed the Government's estimate of the cost for such in-kind contributions.

5. Compliance with Federal Labor Laws. Any credit afforded under the terms of this Agreement is subject to satisfactory compliance with applicable Federal labor laws covering



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non-Federal construction, including, but not limited to, 40 U.S.C. 3141-3148 and 40 U.S.C. 3701-3708 (labor standards originally enacted as the Davis-Bacon Act, the Contract Work Hours and Safety Standards Act, and the Copeland Anti-Kickback Act), and credit 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. Notwithstanding any other provision of this Agreement, the Non-Federal Sponsor shall not be entitled to credit or reimbursement for real property interests that were previously provided as an item of local cooperation for another Federal project.

### ARTICLE VI – PAYMENT OF FUNDS

A. As of the effective date of this Agreement, construction costs are projected to be \$815,313,736, with the Government's share of such costs projected to be \$529,953,928 and the Non-Federal Sponsor's share of such costs projected to be \$285,359,808, which includes the 5 percent contribution of funds projected to be \$40,765,687, creditable real property interests, relocations, and placement area improvements projected to be \$203,828,430, creditable in-kind contributions projected to be \$40,765,687, and the additional amount of funds required to meet the minimum 35 percent cost share projected to be \$0. Average annual costs for operation, maintenance, repair, replacement, and rehabilitation of the Project are projected to be \$700,000. Costs for betterments are projected to be \$0. These amounts are estimates only that are 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 Government shall provide the Non-Federal Sponsor with monthly reports setting forth the estimated construction costs and the Government's and Non-Federal Sponsor's estimated shares of such costs; costs incurred by the Government, using both Federal and Non-Federal Sponsor funds, to date; the amount of funds provided by the Non-Federal Sponsor to date; the estimated amount of any creditable real property interests, placement area improvements, and relocations; the estimated amount of any creditable in-kind contributions; and the estimated amount of funds required from the Non-Federal Sponsor during the upcoming fiscal year.

C. The Non-Federal Sponsor shall provide the funds required to meet its share of construction costs by delivering a check payable to "FAO, USAED, Sacramento District (L2)" to the District Commander, or verifying to the satisfaction of the Government that the Non-Federal Sponsor has deposited such required funds in an escrow or other account acceptable to the Government, with interest accruing to the Non-Federal Sponsor, or by providing an Electronic Funds Transfer of such required funds in accordance with procedures established by the Government.

D. The Government shall draw from the funds provided by the Non-Federal Sponsor to cover the non-Federal share of construction costs as those costs are incurred. If the Government determines at any time that additional funds are needed from the Non-Federal Sponsor to cover the Non-Federal Sponsor's required share of such construction costs, the Government shall

## Attachment B: Draft Project Partnership Agreement (cont.)

provide the Non-Federal Sponsor with written notice of the amount of additional funds required. Within 60 calendar days from receipt of such notice, the Non-Federal Sponsor shall provide the Government with the full amount of such additional required funds.

E. Upon completion of construction and resolution of all relevant claims and appeals and eminent domain proceedings, the Government shall conduct a final accounting and furnish the Non-Federal Sponsor with the written results of such final accounting. Should the final accounting determine that additional funds are required from the Non-Federal Sponsor, the Non-Federal Sponsor, within 60 calendar days of receipt of written notice from the Government, shall provide the Government with the full amount of such additional required funds by delivering a check payable to "FAO, USAED, Sacramento District (L2)" to the District Commander, or by providing an Electronic Funds Transfer of such funds in accordance with procedures established by the Government. Such final accounting does not limit the Non-Federal Sponsor's responsibility to pay its share of construction costs, including contract claims or any other liability that may become known after the final accounting. If the final accounting determines that funds provided by the Non-Federal Sponsor exceed the amount of funds required to meet its share of construction costs, the Government shall refund such excess amount, subject to the availability of funds for the refund.

F. If the Government agrees to acquire or perform, as applicable, real property interests, placement area improvements, relocations, or betterments on the Non-Federal Sponsor's behalf, the Government shall provide written notice to the Non-Federal Sponsor of the amount of funds required to cover such costs. No later than 60 calendar days after receipt of such written notice, the Non-Federal Sponsor shall make the full amount of such required funds available to the Government through either payment method specified in Article VI.E. If at any time the Government determines that additional funds are required to cover such costs, the Non-Federal Sponsor shall provide those funds within 30 calendar days from receipt of written notice from the Government. If the Government determines that funds provided by the Non-Federal Sponsor exceed the amount that was required for the Government to complete such work, the Government shall refund any remaining unobligated amount.

### ARTICLE VII - TERMINATION OR SUSPENSION

A. If at any time the Non-Federal Sponsor fails to fulfill its obligations under this Agreement, the Government may suspend or terminate construction of the Project unless the Assistant Secretary of the Army (Civil Works) determines that continuation of such work is in the interest of the United States or is necessary in order to satisfy agreements with other non-Federal interests.

B. If the Government determines at any time that the Federal funds made available for construction of the Project are not sufficient to complete such work, the Government shall so notify the Non-Federal Sponsor in writing within 30 calendar days, and upon exhaustion of such funds, the Government shall suspend construction until there are sufficient funds appropriated by the Congress and funds provided by the Non-Federal Sponsor to allow construction to resume.

## Attachment B: Draft Project Partnership Agreement (cont.)

In addition, the Government shall suspend construction if the Maximum Lineal Feet Limit is exceeded.

C. If HTRW is found to exist in, on, or under any required real property interests, the parties shall follow the procedures set forth in Article IV.

D. In the event of termination, the parties shall conclude their activities relating to construction of the Project. To provide for this eventuality, the Government may reserve a percentage of available funds as a contingency to pay the costs of termination, including any costs of resolution of real property acquisition, resolution of contract claims, and resolution of contract modifications.

E. Any suspension or termination shall not relieve the parties of liability for any obligation incurred. Any delinquent payment owed by the Non-Federal Sponsor pursuant to this Agreement 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 VIII - HOLD AND SAVE

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

### ARTICLE IX - 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 the parties. Each party shall pay an equal share 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 X - MAINTENANCE OF RECORDS AND AUDITS

A. The parties shall develop procedures for the maintenance by the Non-Federal Sponsor of books, records, documents, or other evidence pertaining to costs and expenses for a minimum

## Attachment B: Draft Project Partnership Agreement (cont.)

of three years after the final accounting. The Non-Federal Sponsor shall assure that such materials are reasonably available for examination, audit, or reproduction by the Government.

B. The Government may conduct, or arrange for the conduct of, audits of the Project. Government audits shall be conducted in accordance with applicable Government cost principles and regulations. The Government's costs of audits shall not be included in construction costs.

C. To the extent permitted under applicable Federal laws and regulations, the Government shall allow the Non-Federal Sponsor to inspect books, records, documents, or other evidence pertaining to costs and expenses maintained by the Government, or at the Non-Federal Sponsor's request, provide to the Non-Federal Sponsor or independent auditors any such information necessary to enable an audit of the Non-Federal Sponsor's activities under this Agreement. The Non-Federal Sponsor shall pay the costs of non-Federal audits without reimbursement or credit by the Government.

### ARTICLE XI - RELATIONSHIP OF PARTIES

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. Neither party shall provide, without the consent of the other party, any contractor with a release that waives or purports to waive any rights a party may have to seek relief or redress against that contractor.

### ARTICLE XII - 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 delivered personally or mailed by registered or certified mail, with return receipt, as follows:

If to the Non-Federal Sponsor:

Executive Officer,  
Central Valley Flood Protection Board  
3310 El Camino Avenue, Suite 170  
Sacramento, CA 95821

And

California Department of Water Resources,  
Section Manager,  
Flood System Sustainability Section  
3310 El Camino Avenue, Room 140  
Sacramento, CA 95821

If to the Government:

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District Commander  
U.S. Army Corps of Engineers, Sacramento District  
Executive Office  
1325 J Street  
Sacramento, CA 95814

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

ARTICLE XIII - 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.

Attachment B: Draft Project Partnership Agreement (cont.)

ARTICLE XIV - THIRD PARTY RIGHTS, BENEFITS, OR LIABILITIES

Nothing in this Agreement is intended, nor may be construed, to create any rights, confer any benefits, or relieve any liability, of any kind whatsoever in any third person not a party to this Agreement.

ARTICLE XV - OBLIGATIONS OF FUTURE APPROPRIATIONS

The Non-Federal Sponsor intends to fulfill fully its obligations under this Agreement. Nothing herein shall constitute, nor be deemed to constitute, an obligation of future appropriations by the California State Legislature, where creating such an obligation would be inconsistent with Section 1 or Section 18 of Article XVI of the California Constitution. If the Non-Federal Sponsor is unable to, or does not, fulfill its obligations under this Agreement, the Government may exercise any legal rights it has to protect the Government's interests.

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

DEPARTMENT OF THE ARMY

THE STATE OF CALIFORNIA

BY: \_\_\_\_\_  
Chad W. Caldwell  
Colonel, U.S. Army

BY: \_\_\_\_\_  
Jane Dolan  
President  
Central Valley Flood Protection Board

DATE: \_\_\_\_\_

DATE: \_\_\_\_\_

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 31 U.S.C. 1352. 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.

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**Jane Dolan**  
**President, Central Valley Flood Protection Board**

DATE: \_\_\_\_\_

**NON-FEDERAL SPONSOR'S  
SELF-CERTIFICATION OF FINANCIAL CAPABILITY  
FOR AGREEMENTS**

I, **Chris Leif**, do hereby certify that I am the Executive Officer of the Central Valley Flood Protection Board (the "Non-Federal Sponsor"); that I am aware of the financial obligations of the Non-Federal Sponsor for the Sacramento River Bank Protection Project; and that the Non-Federal Sponsor has the financial capability to satisfy the Non-Federal Sponsor's obligations under the Project Partnership Agreement between the Department of the Army and the State of California for the Sacramento River Bank Protection Project.

IN WITNESS WHEREOF, I have made and executed this certification this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_.

BY: \_\_\_\_\_

TITLE: Executive Officer, Central Valley Flood Protection Board

DATE: \_\_\_\_\_



CERTIFICATE OF AUTHORITY

I, Kinwarjit Dua, do hereby certify that I am the principal legal officer for the Central Valley Flood Protection Board, that the Central Valley Flood Protection Board is a legally constituted public body with full authority and legal capability to perform the terms of the Project Partnership Agreement between the Department of the Army and the State of California in connection with the Sacramento River Bank Protection Project, and to pay damages, if necessary, in the event of the failure to perform in accordance with the terms of this Project Partnership Agreement, and that the person who executed this Project Partnership Agreement on behalf of the Central Valley Flood Protection Board acted within her statutory authority.

IN WITNESS WHEREOF, I have made and executed this certification this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_.

\_\_\_\_\_  
Kinwarjit Dua  
Legal Counsel for  
The Central Valley Flood Protection Board

# Attachment C: Project Location Map

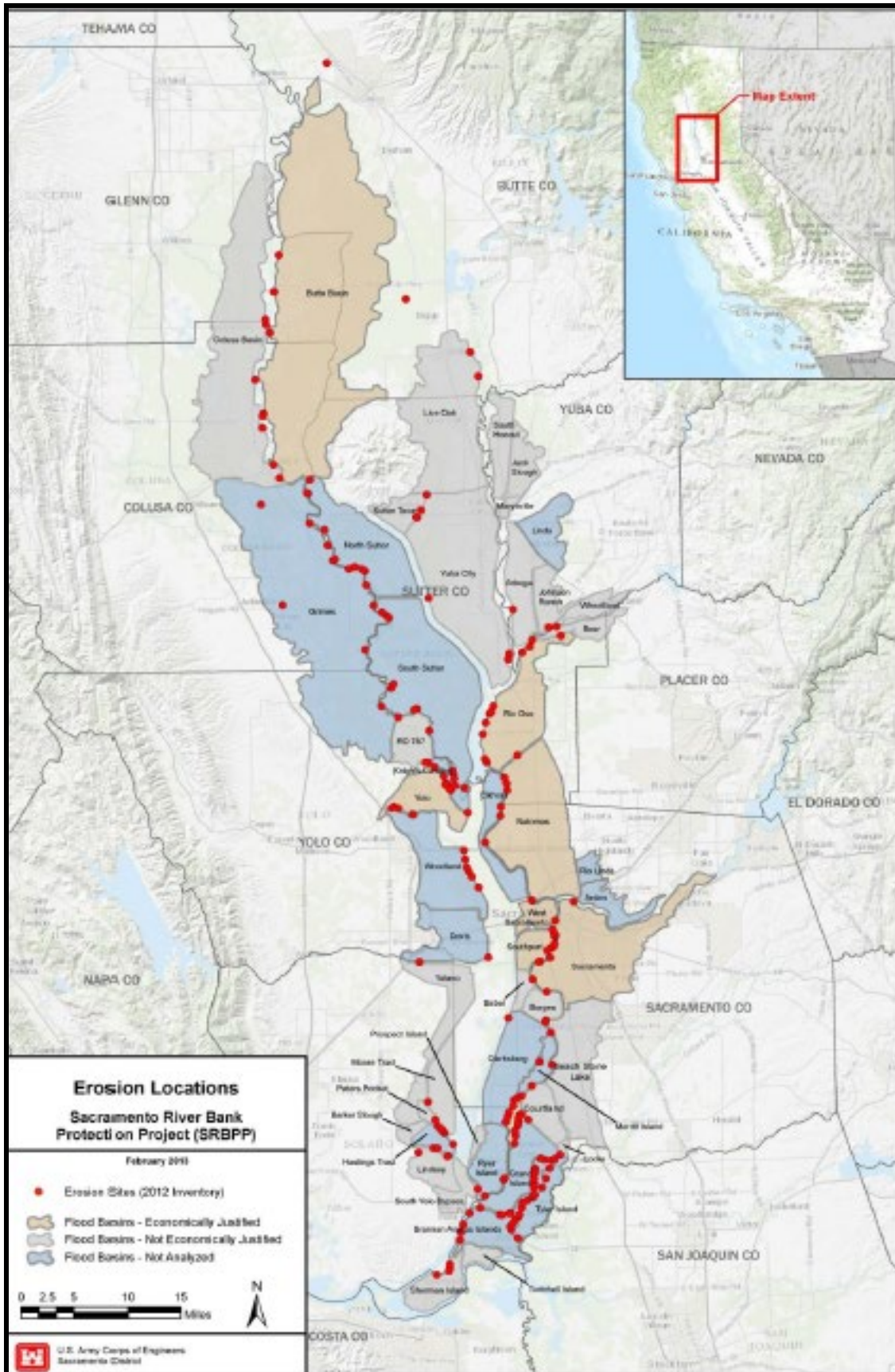


Figure 1: Project Area with 2012 Erosion Inventory Sites

Source: Post-Authorization Change Report

## Attachment D: Array of General Design Concepts for Bank Protection Measures Post-Authorization Change Report

### 2.3.4 DEVELOPMENT OF BANK PROTECTION MEASURES WITHIN THE PRIORITY SITE INVENTORY

Development of the priority site inventory (PSI) followed a rational process to achieve a technically sound and complete analysis. The results of the PSI are bank protection measures that will be applied to the erosion sites throughout the project area, taking into account the unique characteristics of each site. These measures are described in the next section as well as in Appendix A, Section 4.

### 2.3.5 BANK PROTECTION MEASURES

Bank protection measures are generic, conceptual designs to accomplish erosion protection objectives. Historically, the most often employed measure has been rip rap revetment (stone protection), but the measures used have evolved and become more diverse through the many years of bank protection implementation. Additional measures have been developed to avoid or minimize significant environmental impacts such as loss of riparian vegetation and fish habitat.

The existing bank and levee conditions and availability of land determine the most appropriate and least-cost measures for each site (See Appendix A, Section 4, and EIS/EIR for analysis). The measures are described below and shown as graphical cross sections in Figures 4 through 10. The construction would include bringing levee slopes into compliance with USACE standards; this is depicted as a dotted red line on the figures. Other measures or variations may be designed and constructed during implementation.

#### Measure 1: Setback Levee

A setback levee (Figure 4) entails constructing a new levee landward of the existing levee to avoid construction in the channel or riparian areas. The setback levee is most efficient for locations where a large number of erosion sites are located near each other. In these instances multiple erosion sites can be repaired by a single setback levee. Analysis in the Engineering Appendix (Appendix A, Section 4) shows that ten erosion sites could be repaired by constructing a setback levee. The SRBPP authorization includes bank protection and setback levees.

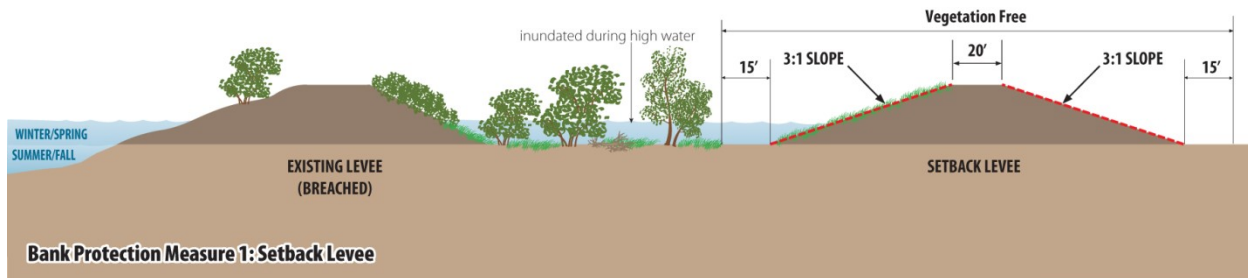
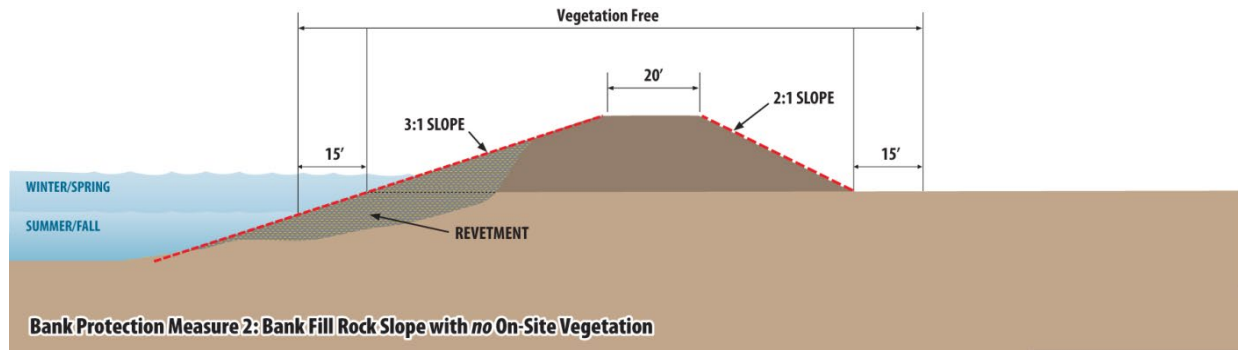


Figure 4. Measure 1 Setback Levee or Rip Rap Revetment

#### Measure 2: Bank Fill Stone Protection with No On-Site Vegetation

This measure (Figure 5) involves repairing erosion along the banks and/or levees with stone protection (revetment). Vegetation is limited to native grass within the vegetation free zone (VFZ), which is on the levee slopes and 15 feet out from the theoretical levee toe. This measure is most applicable in areas with constrained space for construction and vegetation. Analysis in the Engineering Appendix shows that 12 erosion sites could be repaired by installing stone protection with no on-site vegetation.

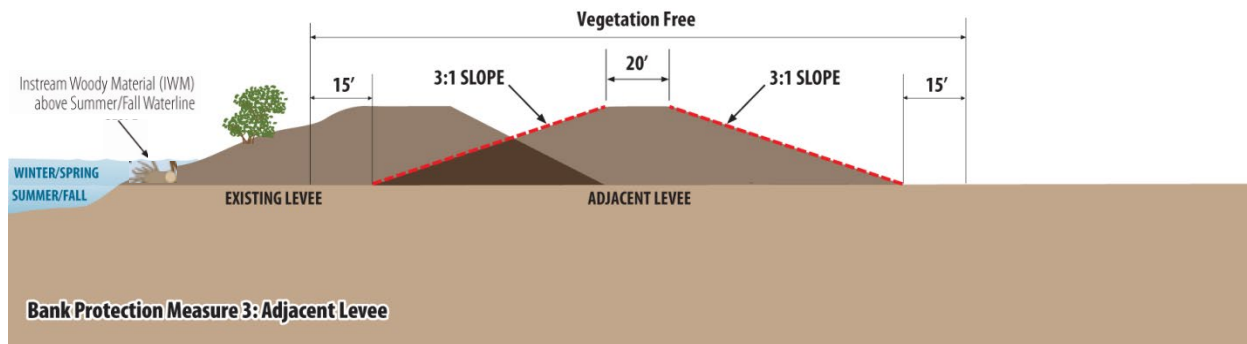
## Attachment D: Array of General Design Concepts for Bank Protection Measures Post-Authorization Change Report



**Figure 5. Measure 2 Bank Fill Stone Protection with No On-Site Vegetation**

### Measure 3: Adjacent Levee

This measure (Figure 6) involves constructing an adjacent levee and utilizing the landward portion of the existing levee. This would allow existing vegetation to remain on the waterside of the levee and would also allow for installation of in-stream woody material (IWM) and riparian vegetation outside of the VFZ on the existing levee and/or bank. This measure is most applicable to areas where the bench is narrow or non-existent. Like the setback levee, the adjacent levee can be used for areas where a large number of erosion sites are located close to each other. Analysis in the Engineering Appendix shows that 15 erosion sites could be repaired by constructing an adjacent levee. The SRBPP authorization includes bank protection and setback levees; adjacent levees are a subcategory of setback levees.



**Figure 6. Measure 3 Adjacent Levee**

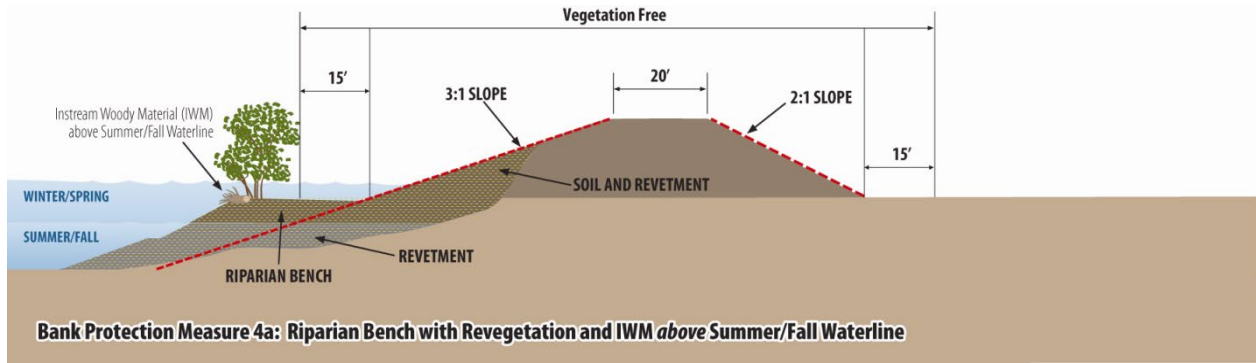
### Measure 4: Riparian and Wetland Banks with Re-vegetation

This measure consists of three variations that are described below and involve placing stone protection and construction of a waterside berm to repair erosion.

#### Measure 4a: Riparian Bank with Re-vegetation and IWM above Summer/Fall Waterline

This measure (Figure 7) installs a waterside berm with soil-filled stone protection in the areas of erosion to above the mean summer water level (MSWL). Stone protection would be installed on areas of the levee slope above the MSWL. The berm would support riparian vegetation and would allow placement of IWM above the MSWL. Analysis in the Engineering Appendix has not shown any erosion sites that could be repaired by Measure 4a.

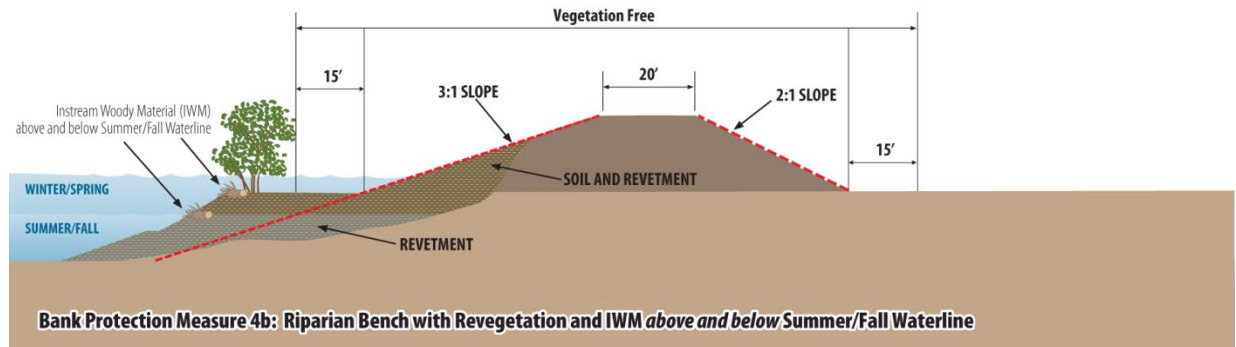
## Attachment D: Array of General Design Concepts for Bank Protection Measures Post-Authorization Change Report



**Figure 7. Measure 4a – Riparian Bench with Re-vegetation and IWM above Summer/Fall Waterline**

### **Measure 4b: Riparian Bench with Re-vegetation and IWM above and below Summer/Fall Waterline**

This measure (Figure 8) installs a waterside berm with soil-filled stone protection in the areas of erosion to above the MSWL. Stone protection would be installed in areas of the levee slope above the MSWL. The berm would support riparian vegetation and would allow placement of IWM above and below the MSWL. Analysis in the Engineering Appendix has not shown any erosion sites that could be repaired by Measure 4b.



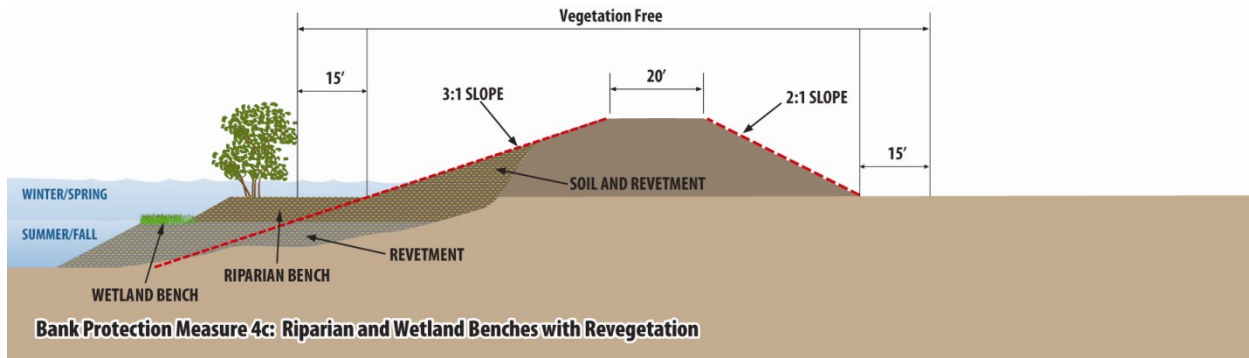
**Figure 8. Measure 4b – Riparian Bench with Re-vegetation and IWM above and below Summer/Fall Waterline**

### **Measure 4c: Riparian and Wetland Benches with Re-vegetation**

This measure (Figure 9) involves installing a wetland bench and a riparian bench with soil-filled stone protection in the areas of erosion. The riparian bench would be installed to above the MSWL. The wetland bench would be installed to below the MSWL. Analysis in the Engineering Appendix has shown that two erosion sites could be repaired by riparian and wetland benches with re-vegetation and IWM above and below the Summer/Fall waterline.



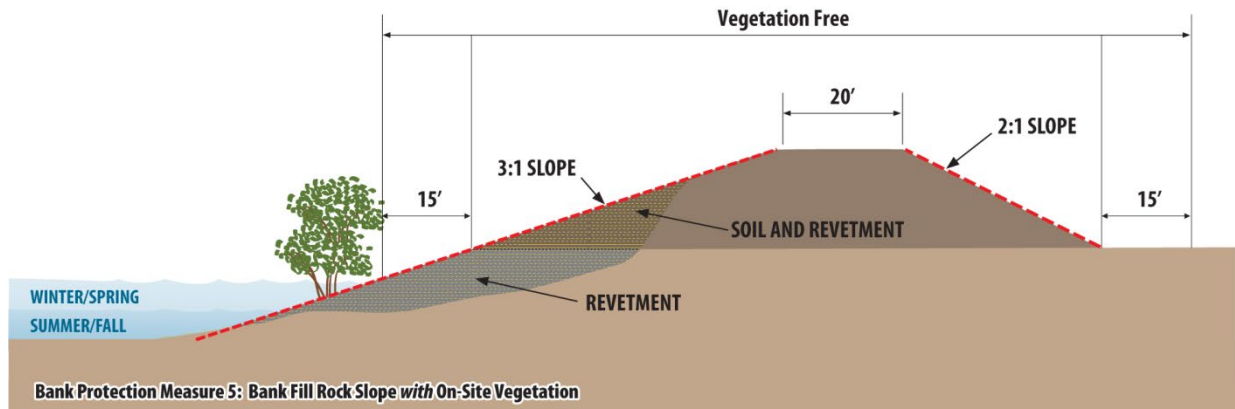
Attachment D: Array of General Design Concepts for Bank Protection Measures  
Post-Authorization Change Report



**Figure 9. Measure 4c – Riparian and Wetland Benches with Re-vegetation**

**Measure 5: Bank Fill Stone Protection with On-Site Vegetation**

This measure (Figure 10) involves filling the eroded portion of the bank with stone protection along the levee and/or bank slope. Vegetation would be limited to native grass within the VFZ. Six inches of soil cover would be placed on the stone protection to promote on-site vegetation. Analysis in the Engineering Appendix has not shown any erosion sites that could be repaired by Measure 5.



**Figure 10. Measure 5 – Bank Fill Stone Protection with On-Site Vegetation**

**2.3.6 MITIGATION FOR ENVIRONMENTAL EFFECTS**

In conjunction with the PACR, the EIS/EIR uses the PSI to identify potential programmatic environmental effects of the PBPP based on an approach that facilitates potential future work outside the current justified sub-basins. While the EIS/EIR evaluates 106 representative erosion sites, other erosion sites may be identified in the future during periodic erosion inventories for the project. Sub-basins that have not been evaluated for this PACR because there were no erosion sites identified in those sub-basins during previous inventories could be evaluated in the future if erosion sites should arise in those sub-basins. Also, sub-basins that are not currently economically-justified could be determined to be justified based on updated benefit assessments as documented in an Economic Reevaluation Report (ERR).

Attachment E: Summary of Priority Critical Erosion Sites  
Excerpt from Critical Sites Memorandum dated May 14, 2018

Below is a detailed summary of each critical erosion site.

**Cache Creek LM 2.4 Left Bank (CHC 2.4L)**

This critical erosion site is located along the left bank of Cache Creek at levee mile 2.4. CHC 2.4L is located in Yolo County, near the town of Yolo, and just north of Woodland. The Levee Maintaining Agency is the CA Department of Water Resources (DWR) – Sacramento Maintenance Yard. It is located in the Yolo Economic Impact Area. The site was added to the erosion inventory in 2002 and immediately designated as critical in 2002. A portion of this site was repaired in 2007 by DWR under the SRBPP authority, however the repair did not go far enough downstream due to logistic issues. The site is 218 ft long and has about 15 ft of berm between the natural bank and the levee toe.

The main cause of erosion along CHC 2.4L is fluvial action of the river; a combination of high velocities, over-steepened slopes, and poor soils have led to significant erosion. Additional issues at this site are vertical banks, animal holes, cracks, and slumping.<sup>1</sup> Fresh erosion was observed in 2013 and 2017. Seepage is a known issue along this levee reach.

Due to how narrow the channel width is and how deep the channel is, a setback levee is the only type of repair that is likely acceptable at this site. However, adjacent to this levee (on the landside) is a house (with multiple smaller structures) which will require real estate acquisition for any repair work, DWR is currently working to find a long-term solution. Photos depicting this site are shown in Figures 1 and 2.

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<sup>1</sup> Slumping is a form of mass wasting that occurs when the soil moves a short distance down the slope.

Attachment E: Summary of Priority Critical Erosion Sites (cont.)  
Excerpt from Critical Sites Memorandum dated May 14, 2018



*Figure 1 Looking Downstream along Cache Creek LM 2.4L*



*Figure 2 View of Cache Creek LM 2.4L from Opposite Bank*

**Feather River RM 5.0 Left Bank (FHR 5.0L)**

This critical erosion site is located along the left bank of the Feather River at river mile 5.0. FHR 5.0L is located in Sutter County, near the town of Nicolaus, and north of Sacramento. The Levee Maintaining Agency is RD 1001, Nicolaus. It is located in the Rio Oso Economic Impact Area. The site was added to the erosion inventory in 2000 and upgraded to critical in 2017. The site is 1,666 ft long and has about 15 ft of berm between the natural bank and the levee toe.



Attachment E: Summary of Priority Critical Erosion Sites (cont.)  
Excerpt from Critical Sites Memorandum dated May 14, 2018

The main cause of erosion along FHR 5.0L is from the fluvial action of the river and whole bank failure;<sup>2</sup> a combination of over-steepened slopes along with non-cohesive soils have led to significant erosion. Additional issues at this site are vertical banks, trees with exposed roots that are leaning over, animal holes, and slumping. Significant new erosion was observed following the 2017 flood season and the site has a history of tree pop-outs.<sup>3</sup> Seepage is a known issue along this levee reach. Although further analysis is needed, it is likely that a vegetation variance or removal of vegetation encroachments may be required at this site. Photo depicting this site is shown in Figure 3.



*Figure 3 Erosion at Feather River, RM 5.0 Left Bank*

**Feather River RM 6.0 Left Bank (FHR 6.0L)**

This critical erosion site is located along the left bank of the Feather River at river mile 6.0. FHR 6.0L is located in Sutter County, near the town of Nicolaus, and north of Sacramento. The Levee Maintaining Agency is RD 1001, Nicolaus. It is located in the Rio Oso Economic Impact Area. The site was added to the erosion inventory in 2011 and upgraded to critical in 2017. The site is 487 ft long and has about 10 ft of berm between the natural bank and the levee toe.

The main cause of erosion along FHR 6.0L is from the fluvial action of the river and whole bank failure; a combination of over-steepened slopes along with non-cohesive

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<sup>2</sup> Whole bank failure is defined as oversteepening of the bank slopes (due to a combination of hydraulic forces and geotechnically unstable bank) and subsequent slip plane failures and mass wasting which leaves a visible eroded slope face.

<sup>3</sup> A tree pop-out is when the tree can no longer be supported in the bank slope and the weight causes it to overturn into the river, leaving an alcove shaped cavity in the bank.

Attachment E: Summary of Priority Critical Erosion Sites (cont.)  
Excerpt from Critical Sites Memorandum dated May 14, 2018

soils have led to significant erosion. The entire bank slope is slumping. Additional issues at this site are bank slopes at less than 1:1, trees with exposed roots that are leaning over, animal holes, and slumping. Significant new erosion was observed from the 2017 flood season. Seepage is a known issue along this levee reach. Although further analysis is needed, it is likely that a vegetation variance or removal of vegetation encroachments may be required at this site. Photo depicting this site is shown in Figure 4.



*Figure 4 Erosion Site along the Feather River at RM 6.0, Left Bank*

**Sacramento River, RM 172.0 Left Bank (SAC 172.0L)**

This critical erosion site is located along the left bank of the Sacramento River at river mile 172.0. SAC 172.0L is located in Glenn County, north of Butte City. The Levee Maintaining Agency is Levee District 3, Glenn County, with assistance from the CA DWR Sutter Maintenance Yard. It is located in the Butte Basin Economic Impact Area. The site was added to the erosion inventory in 2007 and upgraded to critical in 2017. The site is 1,628 ft long and has about 20 ft of berm between the natural bank and the levee toe.

The main cause of erosion along SAC 172.0L is the fluvial action of the river and whole bank failure related to growth of a meander bend. Bank retreat at this site has been quick, with the channel migrating over 500 ft east in the last 20 years, and greater than 100 ft of bank erosion towards the levee (at the most critical point) since its inclusion in the erosion inventory. Although this site still has some berm between the natural bank and the levee toe, the erosion is entering the levee prism. The rate of erosion is of concern and a large storm event has the potential to cause significantly more bank erosion, possibly breaching the levee toe.

Attachment E: Summary of Priority Critical Erosion Sites (cont.)  
Excerpt from Critical Sites Memorandum dated May 14, 2018

Additional issues at this site are vertical banks, animal holes, and slumping. Although further analysis is needed, it is likely that a vegetation variance or removal of vegetation encroachments may be required at this site. A photo depicting this site is shown in Figure 5.



*Figure 5 Bank Erosion into the Levee Prism along the Left Bank of the Sacramento River at RM 172.0*