
REVIEW PLAN

**SACRAMENTO RIVER BANK PROTECTION PROJECT, PHASE II, CALIFORNIA
POST AUTHORIZATION DECISION DOCUMENTS**

SACRAMENTO DISTRICT, U.S. ARMY CORPS OF ENGINEERS



**US Army Corps
of Engineers®**

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1. PURPOSE AND REQUIREMENTS

A. Purpose. This document outlines the Review Plan (RP) for the additional elements of Phase II of the Sacramento River Bank Protection Project that was authorized in WRDA 2007. This RP applies to the post authorization documents required to support a Project Partnership Agreement between the United State Army Corps of Engineers (Corps) and the local sponsor, the State of California. These documents include an Environmental Impact Statement / Environmental Impact Report (EIS/EIR), an Engineering Document Report (EDR), and a Post Authorization Decision Document (PADD), a Real Estate (RE) Plan, and an Economic Reevaluation.

This RP was prepared following the *Civil Works Review Policy*, EC 1165-2-209, dated 31 January 2010. The EC formally distinguishes between technical review performed in-district (District Quality Control, "DQC") and out-of-district resources (formerly Independent Technical Review, "ITR," now Agency Technical Review, "ATR"). It also reaffirms the requirement for Independent External Peer Review (IEPR); this is the most independent level of review and is applied in cases that meet certain criteria where the risk and magnitude of a proposed project are such that a critical examination by a qualified team outside of the U.S. Army Corps of Engineers (USACE) is warranted.

B. Requirements. EC 1165-2-209 outlines the requirement of the three review approaches (DQC, ATR, and IEPR). This document addresses review of the decision document as it pertains to ATR and IEPR and planning coordination with the appropriate PCX. The Sacramento River Bank Protection Project's purpose is flood risk management. Therefore, the PCX for FRM is considered to be the primary PCX for coordination. The PCX for FRM will coordinate with the PCX for ER as appropriate.

(1) District Quality Control. DQC is the review of basic science and engineering work products focused on fulfilling the project quality requirements defined in the Sacramento River Bank Protection Project, Project Management Plan (PMP) for the study (to which this Review Plan will ultimately be appended). It is managed in the Sacramento District and may be conducted by in-house staff as long as the reviewers are not doing the work involved in the study, including contracted work that is being reviewed. The major post authorization documents being prepared are being accomplished by task order under a Planning and Environmental Studies IDIQ Contract. The task order scope includes the requirement for the contractor to conduct their own technical review of the products prior to submission. The District Project Delivery Team (PDT) is responsible for and will perform quality assurance review of all contractor prepared documents. Basic quality control tools include a Quality Management Plan (QMP) providing for seamless review, quality checks and reviews, supervisory reviews, PDT reviews, etc. Additionally, the PDT is responsible for a complete reading of the report to assure the overall integrity of the report, technical appendices and the recommendations before the approval by the District Commander. For the Sacramento River Bank Protection Project, non-PDT members and/or supervisory staff will conduct this review for major draft and final products. South Pacific Division (SPD) and Sacramento District (SPK) are directly responsible

for the QM and QC respectively, and to conduct and document this fundamental level of review. A Quality Control Plan (QCP) is included in the PMP for the subject study and addresses DQC by the MSC/District; DQC is not addressed further in this Review Plan. DQC is required for this study.

(2) Agency Technical Review. EC 1165-2-209 recharacterizes ATR (which replaces the level of review formerly known as Independent Technical Review) as an in-depth review, managed within USACE, and conducted by a qualified team outside of the home district that is not involved in the day-to-day production of a project/product. The purpose of this review is to ensure the proper application of clearly established criteria, regulations, laws, codes, principles and professional practices. The ATR team reviews the various work products and assures that all the parts fit together in a coherent whole. ATR teams will be comprised of senior USACE personnel (Regional Technical Specialists (RTS), etc.) and may be supplemented by outside experts as appropriate. To assure independence, the leader of the ATR team shall be from outside the home MSC. DrChecks (<https://www.projnet.org/projnet/>) will be used to document all ATR comments, responses, and associated resolution accomplished. This Review Plan outlines the proposed approach to meeting this requirement for the Sacramento River Bank Protection Project. ATR is required for this study.

(3) Independent External Peer Review (IEPR). EC 1165-2-209 recharacterized the external peer review process that was originally added to the existing Corps review process via EC 1105-2-408. IEPR is the most independent level of review, and is applied in cases that meet certain criteria where the risk and magnitude of the proposed project are such that a critical examination by a qualified team outside of USACE is warranted. IEPR is managed by an outside eligible organization (OEO) that is described in the Internal Review Code Section 501(c) (3); is exempted from Federal tax under Section 501(a), of the Internal Revenue Code of 1986; is independent; is free from conflicts of interest; does not carry out or advocate for or against Federal water resources projects; and has experience in establishing and administering IEPR panels. The scope of review will address all the underlying planning, engineering, including safety assurance, economics, and environmental analyses performed, not just one aspect of the project. The IEPR will be on the technical aspects of the project while the ATR will be responsible for the agency and administration's policy review. IEPR is divided into two types: Type I IEPR is generally for decision documents, while Type II is generally for implementation documents. These two types are discussed further in Section 4.

(4) Policy and Legal Compliance Review. In addition to the technical reviews, decision documents will be reviewed throughout the study process for their compliance with law and policy. These reviews culminate in Washington-level determinations that the recommendations in the reports and the supporting analyses and coordination comply with law and policy, and warrant approval or further recommendation to higher authority by the Chief of Engineers. Guidance for policy and legal compliance reviews is addressed further in Appendix H, ER 1105-2-100. Technical reviews described in EC 1165-2-209 are to augment and complement the policy review processes by addressing compliance with published Army polices pertinent to planning products, particularly polices on analytical methods and the presentation of findings in decision documents. DQC and ATR efforts are to include the necessary expertise to address compliance with published planning policy. Counsel will generally not participate on ATR teams, but may at the discretion of the district or as directed by higher authority. When policy and/or legal concerns arise during DQC or ATR efforts that are not readily and mutually resolved by the PDT and the reviewers, the District will seek issue resolution support from SPD and HQUSACE in accordance with the procedures outlined in Appendix H, ER 1105-2-100. IEPR teams are not expected to be knowledgeable of Army and administration polices, nor are they expected to address such concerns. An IEPR team should be given the flexibility to bring important issues to the attention of decision makers. Legal reviews will be conducted concurrent with ATR of the draft and final EIR/EIS, EDR, and PADD.

(5) Planning Center of Expertise (PCX) Coordination. This Review Plan has been coordinated with the PCX for Flood Risk Management (FRM), who in turn coordinated with the PCX for Ecosystem Restoration (ER). The PCX for FRM is responsible for the accomplishment and quality of ATR and IEPR for the Sacramento River Bank Protection Project, Phase II. The DQC is the responsibility of the Sacramento District with SPD having the QA role. The PCX for FRM may conduct the review or manage the ATR and IEPR reviews to be conducted by others.

(6) Review Plan Approval and Posting. In order to ensure the Review Plan is in compliance with the principles of EC 1165-2-209 and the MSC's QMP, the Review Plan must be approved by the applicable MSC, in this case the Commander, South Pacific Division (SPD). Once the Review Plan is approved, the Sacramento District will post it to its district public website and notify SPD and the PCX for FRM. The Review Plan was approved on April 17, 2009.

(7) Type II IEPR, Safety Assurance Review (SAR). In accordance with Section 2034 and 2035 of WRDA 2007, EC 1165-2-209, and pending additional guidance requires that all projects addressing flooding or storm damage reduction undergo a SAR during design and construction. Safety assurance factors (significant threat to human life, project cost thresholds, etc) must be considered in the planning and studies phases and in all reviews for those studies. Updated guidance on the civil works review process including implementation guidance for Section 2034 and 2035 is under development. This study will address safety assurance factors, which at a minimum will be included in the draft report and appendixes for public and agency review. Prior to preconstruction engineering and design (PED) of the sites identified for construction, a PMP will be developed that will include SAR's with the selection of external panels to perform the independent external peer reviews during design and construction.

2. STUDY INFORMATION

A. Decision Document. The appropriate decision document for Phase II Sacramento River Bank Protection Project (SRBP) is a PADD. This project is authorized for construction, no further plan formulation or determination of Federal interest is needed. A PADD and supporting documents will in turn support the Project Partnership Agreement (PPA) between the non Federal sponsor (State of California Central Valley Flood Protection Board) and the Corps. There are a number of technical and policy issues which are required to be resolved. Issues will typically involve the Corps vertical team (Division and Headquarters). The PADD will document issue resolution.

The Sacramento River Bank Protection Project is a part of the Sacramento River Flood Control Project (SRFCP). The SRFCP includes approximately 1,300 miles of levees along the Sacramento River, tributaries (American, Feather, Yuba, and Bear Rivers along with additional minor tributaries), and distributary sloughs. The SRFCP also includes the Moulton, Colusa, Tisdale, Fremont, and the Sacramento Flood Overflow Weirs and the Butte Basin and Sutter and Yolo Bypasses and Sloughs.

The purpose of Phase II of the SRBPP is to identify and repair sites along the Sacramento River and Tributaries that may have been weakened due to erosion while concurrently providing mitigation for any environmental impact as detailed in the supporting EIS/EIR. This portion of Phase II consists of 80,000 levee feet of bank protection along the Sacramento River and tributaries. Authority has been given to Phase II of this project by Section 202 of the River Basin Monetary Authorization Act of 1974 (Public Law 93-252) and through a joint resolution of Congress (PL 97-377). The additional 80,000 levee feet was authorized by the Water Resources Development Act (WRDA) of 2007. The overall cost of the study is to be cost shared 75 percent Federal, 25 percent non-Federal with the project sponsor, the State of California Central Valley Flood Protection Board (CVFPB). Phase I is 435,000LF of bank protection. Construction of Phase I was completed in 1975.

Phase III is programmatic future work that will become more defined as Phase II is completed. Prior to any Phase III construction, a general reevaluation report (GRR) will be done to resolve planning and policy issues and reformulate remedial action for the SRFCP in light of current conditions and new and upcoming Federal, State, and local activities in the basin. The Phase III reevaluation may be accomplished under the current SRBPP authority, however, it is anticipated that the reevaluation would result in a recommended plan that would require new or amended authorization. This RP is for the PADD that covers the 80,000 LF of Phase II only.

B. General Site Description. The Sacramento River begins near Mount Shasta in Northern California, flows through the northern Central Valley, and finally joins the San Joaquin River and Sacramento River Delta to discharge to the Suisan Bay.

The SRBPP is a continuing construction project, originally authorized by the Flood Control Act of 1960, to provide protection for the existing levees and flood control facilities of the Sacramento River Flood Control Project (SRFCP). The SRFCP consists of approximately 980 miles of levees plus overflow weirs, pumping plants, and bypass channels that protect communities and agricultural lands in the Sacramento Valley and Sacramento-San Joaquin Delta.

The 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 as the Flood Control Act of 1960, Public Law (PL) 86-645. Prior to 1960, the Federal government did not support continued participation in a project perceived as completed.

However, by 1960 the Federal government began to see the national value in investing funding in large scale flood protection projects in complicated watersheds. In the Flood Control Act of 1960, Congress authorized substantial support for flood protection for the Sacramento River Basin. This constituted Phase I of the SRBPP. Phase I was constructed from 1963 to 1975, and consisted of 436,000 levee feet completed.

In 1972, the Chief of Engineers found that “Although work under the initial phase [Phase I] has effectively controlled erosion at the critical sites, each year stream banks and levees at additional unprotected locations throughout the Sacramento River Flood Control Project are subject to erosion....” Accordingly in 1974 repair of 405,000 levee feet were authorized as SRBPP Phase II. Authorization was through the River Basin Monetary Authorization Act of 1974 (PL 93-251). Construction began in 1976 and as of December 2008, 389,354 levee feet has been repaired. Thus, the previously authorized Phase II has a balance of 15,646 linear feet.

Through the Water Resources Development Act of 2007, Phase II was modified to include an additional 80,000 linear feet. A Post Authorization Decision Document for the 80,000 linear feet needs to be final and approved before the 1974 authority runs out.

The existing SRBPP provides for a continuing long-range program of bank stabilization and erosion control to maintain the integrity of the Sacramento River Flood Control Project (SRFCP) through bank protection and set-back levees.

Although the Phase II 80,000 linear feet will consist of individual bank protection sites on SRFCP levees, actual sites are not yet identified. The PADD will contain a programmatic plan that will use the 2007 Field Reconnaissance Report which lists and prioritizes possible bank protection sites. As detailed in the 2007 Field Reconnaissance Report there are 152 sites that may or may not receive bank protection for the new 80,000 levee feet to undergo bank protection under Phase II. Figures 1 and 2 are the location maps for the project. The report lists sites that are scattered along levees on the Main Sacramento River, from

Chico Landing (RM 199) to Collinsville (RM 4), and tributaries of the Sacramento River. These tributaries include the American River, the Feather River, the Bear River, the Yuba River, Cache Creek, and others.

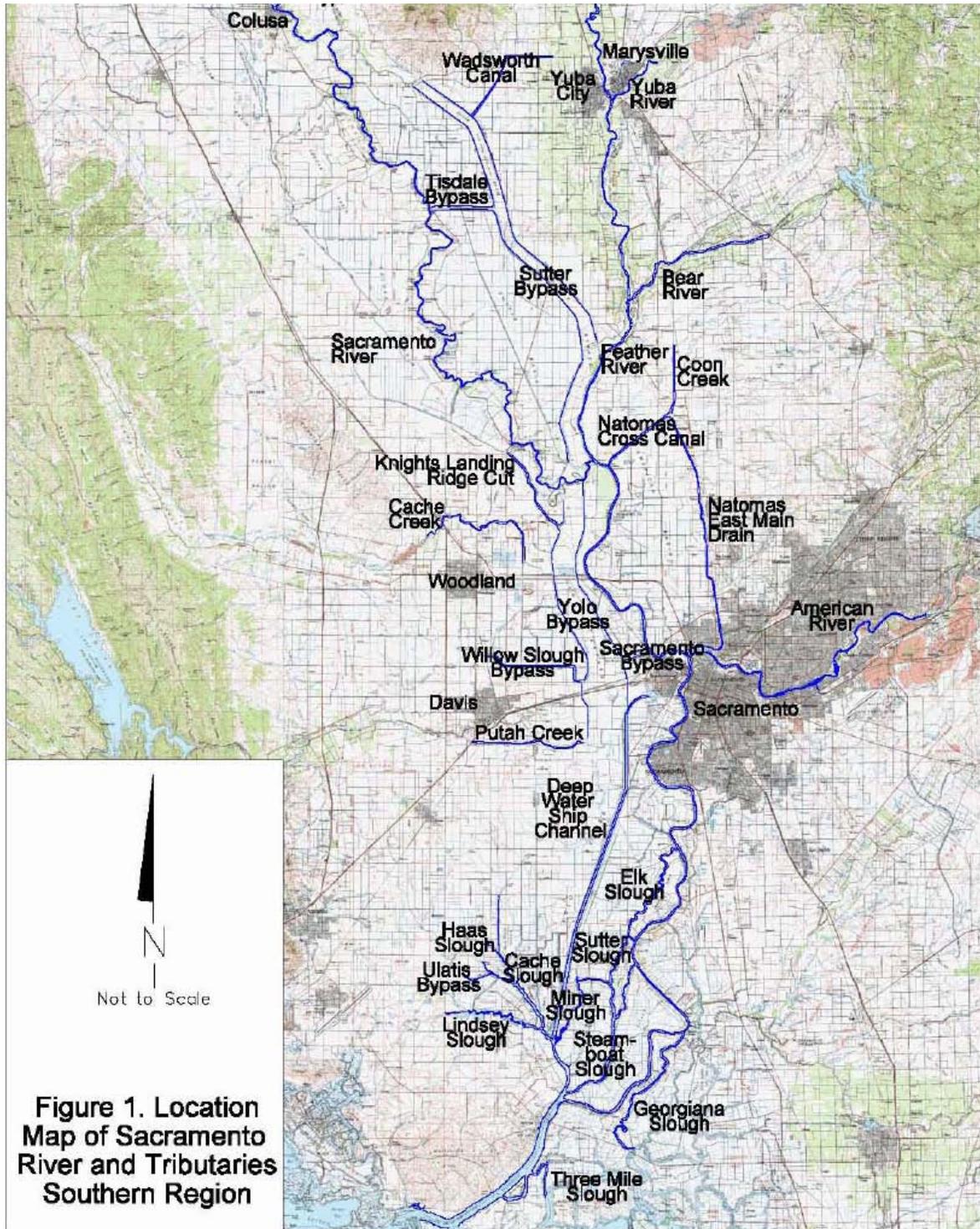
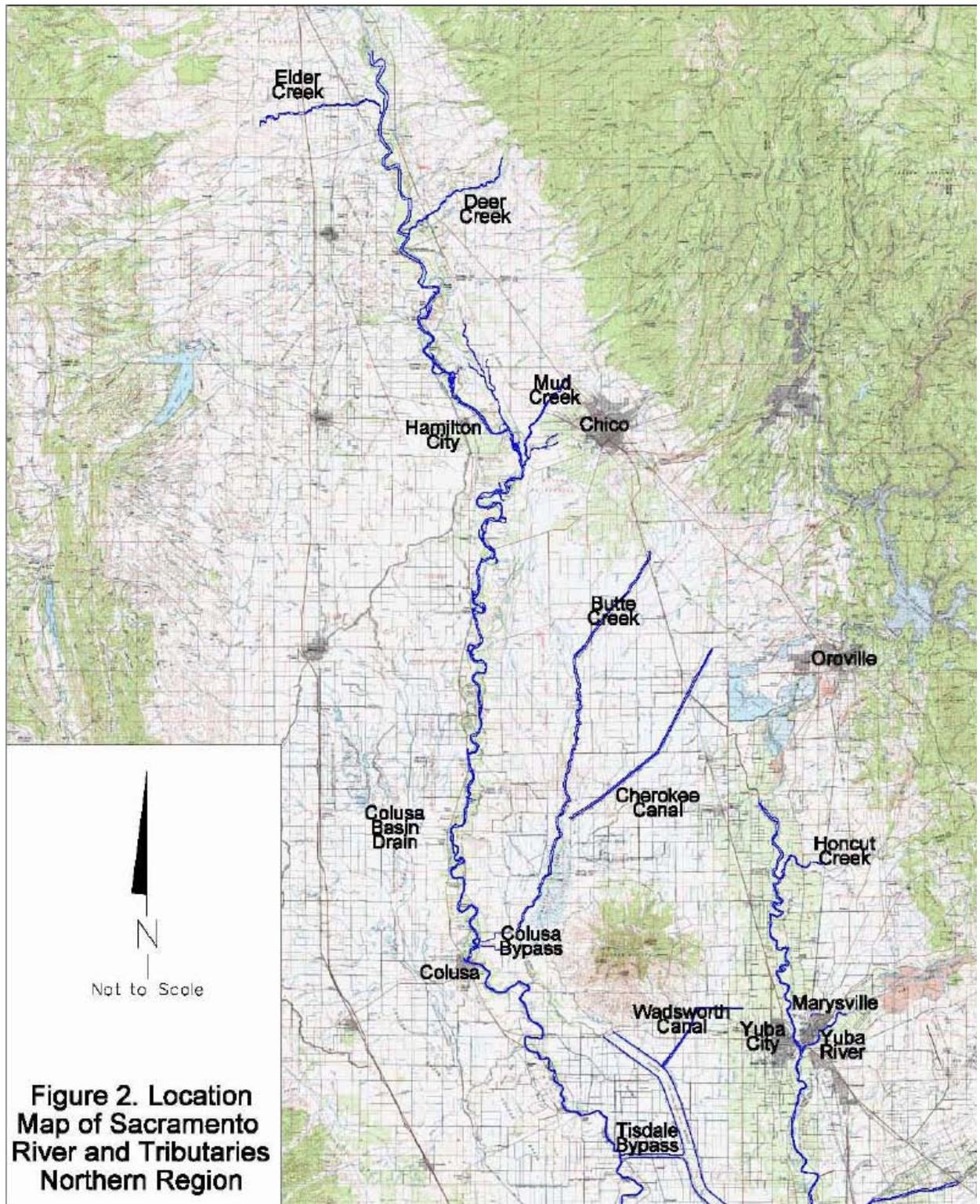


Figure 1. Location Map of Sacramento River and Tributaries Southern Region

Source: Ayers Associates, Inc. 2007 – *Field Reconnaissance Report, Erosion Site Inventory and Priority Ranking*, December 18, 2007



Source: Ayers Associates, Inc. 2007 – *Field Reconnaissance Report, Erosion Site Inventory and Priority Ranking*, December 18, 2007

C. Project Scope. The project will include a PADD which will be supported by an Engineering Documentation Report (EDR) with both Economics and Real Estate Appendices and a Programmatic EIS/EIR. Since erosion problems change over time on the Sacramento River, this entire portfolio of documents will need to be programmatic in nature. The bank protection program has to respond to erosion that may appear after any flood season or event. Costs, benefits, and environmental effects will be based on erosion sites identified in the *2008 Field Reconnaissance Report of Bank Erosion Sites and Site Priority Ranking*, report dated 18 December 2008. This is the latest inventory of bank protection needs for the project. This reconnaissance report identified 154 erosion sites. The total linear extent is 83,000 linear levee feet. Recently a 2008 field report was prepared that added 13 sites and removed 11 sites. This does not have a significant affect from a programmatic standpoint, thus the programmatic plan will continue to be based on the 2007 sites.

Rather than a specific plan, the PADD will describe an approximation of the future work under Phase II and how Phase II efforts and other associated projects will be integrated into a future Phase III strategy. This PADD will be based on the 152 identified sites from the 2007 Field Reconnaissance. Thus estimates of costs, effects, benefits, and mitigation will be a documented baseline as the project's response to erosion problems change over time. The Phase II costs, benefits, effects will be realistic enough to be a meaningful basis for the Project Partnership Agreement (PPA).

The SRBPP baseline and future without project will be determined through the *Phase I and II Summaries Report* (Draft Spring 2010).

During the implementation phase, as bank protection designs are applied to specific sites, supplemental documentation to the programmatic plan and EIS/EIR will be prepared documenting compliance with or deviation from the programmatic plan. This important step will be guided by a consistent communication process including stakeholder outreach/input and project-level environmental documentation.

D. Problems and Opportunities. The primary flood-related problem in this project is the potential for levee failure due to weakness caused by erosion. Bank protection must be accomplished in compliance with current Corps policy limiting vegetation on levees. Through the EIS/EIR process the Corps will work with resource agencies to resolve possible loss of river-related habitat due to bank protection.

E. Potential Methods. The following is a short description of the five currently constructed and utilized bank protection measures. As these measures are applied to the 2007 bank protection sites, they will become alternatives for purposes of NEPA and CEQA. The alternatives may be in conflict with ETL 10-2-571 dated 3 April 2008 if erosion occurs into the 3:1 levee template and/or into the 15 foot vegetation free zone. These alternatives are currently under review.

- Install revetment along the levee slope from the levee's toe to crest, and provides some on-site conservation measures to improve habitat quality, including revegetation of the lower and upper bank rock slope protection.
- Construct a riparian bench with integrated in-stream woody material (IWM). This measure is to provide onsite compensation for potential impacts to habitat on the Sacramento River.
- This design is identical to the second bullet, except that the IWM will be positioned in different locations, relative to the riparian bench. Under this design, IWM will be embedded above and below the summer/fall waterline, thus providing year-round in-stream habitat for the focus fish species and life stages when seasonally present.
- Construct and revegetate riparian and wetland benches to further increase habitat quality. The design includes placing rock revetment at the levee toe and along the upper bank; planting vegetation on the benches and upper bank to provide bank stabilization and riparian habitat; and restoring IWM to pre-project conditions to maintain in-stream habitat attributes. This is

intended to provide onsite compensation to meet delta smelt and salmonid habitat requirements.

- Construct new setback levees. The setback levees would provide the same flood protection as the existing levees and would be designed to Corps standards. The land between the setback and the old levee would be restored floodplain with restored vegetative cover. The old levee would be breached in several locations to allow high flows to inundate the restored floodplain.

3. DISTRICT QUALITY CONTROL

District technical staff will provide quality assurance reviews of Contractor prepared products, which include an EIS/EIR, an EDR, a PADD, and a RE Plan. Other products prepared in-house, such as the Economic Reevaluation, will be reviewed by District staff independent from those that conducted the work. Weekly status review meetings will be held with the Contractor to resolve issues, and monitor progress and the quality of the work. Quality control certification shall be provided by the Contractor as required on the final work products.

4. AGENCY TECHNICAL REVIEW PLAN

For post authorization decision documents, ATR is managed by the PCX. For this study, due to the heavy emphasis on flood risk management, the PCX for FRM will identify individuals to perform ATR. Sacramento District can provide suggestions on possible reviewers.

A. General. An ATR Manager from outside the home MSC shall be designated by the FRM-PCX for the ATR process. The proposed ATR Manager for this project is to be determined, but will have expertise in project planning. The ATR Manager is responsible for providing information necessary for setting up the review, communicating with the Study Manager, providing a summary of critical review comments, collecting grammatical and editorial comments from the ATR team (ATRT), ensuring that the ATRT has adequate funding to perform the review, facilitating the resolution of the comments, and certifying that the ATR has been conducted and resolved in accordance with policy. ATR will be conducted for project planning, environmental compliance, economics, hydraulic design, civil design, geotechnical engineering, cost engineering, real estate, cultural resources; reviews of more specific disciplines may be identified if necessary.

B. Agency Technical Review Team (ATRT). The ATRT will be comprised of individuals that have not been involved in the development of the decision document and will be chosen based on expertise, experience, and/or skills. The members will roughly mirror the composition of the PDT and wherever possible, reside outside of the South Pacific Division region. It is anticipated that the team will consist of about 9 reviewers. The ATRT members will be identified at the time the review is conducted and will be presented in appendix B. General descriptions of ATR disciplines are as follows:

Hydraulics: Team member will be an expert in the field of urban hydrology & hydraulics, have a thorough understanding of the dynamics of the both open channel flow systems, enclosed systems, application of detention / retention basins, effects of best management practices and low impact development on hydrology, approaches that can benefit water quality, application of levees and flood walls in an urban environment with space constraints, non-structural measures especially as related to multipurpose alternatives including ecosystem restoration, non-structural solutions involving flood warning systems, and non-structural alternatives related to flood proofing. The team member will have an understanding of computer modeling techniques that can be used for this project. A certified flood plain

manager is recommended but not required.

Geotechnical: Team member will be experienced in levee & floodwall design, post-construction evaluation, and rehabilitation. A certified professional engineer is recommended.

Economics: Team member will be experienced in civil works and related flood risk reduction projects, and have a thorough understanding of HEC-FDA.

Plan Formulation: Team member will be experienced with the civil works process, watershed level projects, current flood damage reduction planning and policy guidance, and have experience in plan formulation for multipurpose projects, specifically integrating measures for flood risk management, ecosystem restoration, recreation, watersheds, and planning in a collaborative environment.

Environmental: Team member will be experienced in NEPA/CEQA process and analysis, and have a biological or environmental background that is familiar with the project area and ecosystem restoration.

Cultural Resources: Team member will be experienced in cultural resources and tribal issues, regulations, and laws.

Landscape Architect: Team member will be experienced in landscape architecture, ecosystem restoration, habitat mitigation, recreation, and facility design.

Civil / Site / Utilities / Relocations: This discipline may require a dedicated team member, or may be satisfied by structural or geotechnical reviewer, depending on individual qualifications. Team member will have experience in utility relocations, positive closure requirements and internal drainage for levee construction, and application of non-structural flood damage reduction, specifically flood proofing. A certified professional engineer is suggested.

Cost Estimating: Team member will be familiar with cost estimating for similar civil works projects using MCACES. Team member will be a Certified Cost Technician, Certified Cost Consultant, or Certified Cost Engineer. A separate process and coordination is also required through the Walla Walla District DX for cost engineering.

Real Estate: Team member will be experienced in federal civil work real estate laws, policies and guidance. Members shall have experience working with respective sponsor real estate issues.

Other disciplines/functions involved in the project included as needed with similar general experience and educational requirements.

C. Communication. The communication plan for the ATR is as follows:

(1) The team will use DrChecks to document the ATR process. The Study Manager will facilitate the creation of a project portfolio in the system to allow access by all PDT and ATRT members. An electronic version of the document, appendices, and any significant and relevant public comments shall be posted in Word format at: <ftp://ftp.usace.army.mil/pub/> at least one business day prior to the start of the comment period.

(2) The PDT shall send the ATR Leader and members shall download and print individual documents and appendices as necessary.

(3) The PDT shall host an ATR kick-off meeting virtually or on-site to orient the ATRT during

the first week of the comment period. If funds are not available for an on-site meeting, the PDT shall coordinate a virtual presentation meeting or at a minimum provide a presentation about the project, including photos of the site, for the team.

(4) The ATR Leader shall ensure all responses have been entered into DrChecks and conduct a briefing to summarize comment responses to highlight any areas of disagreement.

(5) A revised electronic version of the report and appendices with comments incorporated shall be posted at <ftp://ftp.usace.army.mil/pub/> for use during back checking of the comments.

(6) PDT members shall contact ATRT members or ATR Leader as appropriate to seek clarification of a comment's intent or provide clarification of information in the report. Discussions shall occur outside of DrChecks but a summary of discussions may be provided in the system.

(7) Reviewers will be encouraged to contact PDT members directly via email or phone to clarify any confusion. DrChecks shall not be used to post questions needed for clarification.

(8) The ATRT, the PDT, and the vertical team shall conduct an after action review (AAR) no later than 2 weeks after the policy guidance memo is received from HQUSACE for the for the AFB and draft reports.

D. Funding

(1) The PDT district shall provide labor funding by cross charge labor codes. Funding for travel, if needed, will be provided through government order. The Study Manager will work with the ATR manager to ensure that adequate funding is available and is commensurate with the level of review needed. The current cost estimate for this review is \$126,000. Any funding shortages will be negotiated on a case by case basis and in advance of a negative charge occurring.

(2) The team leader shall provide organization codes for each team members and a responsible financial point of contact (CEFMS responsible employee) for creation of labor codes.

(3) Reviewers shall monitor individual labor code balances and alert the ATRT Study Manager to any possible funding shortages.

E. Timing and Schedule

(1) Throughout the development of this document, the team will conduct seamless review to ensure planning quality.

(2) The ATR will be conducted on the draft PADD, EIS-EIR and supporting documents and if changes are made to the draft report, those changes will be reviewed in the Final PADD.

(3) The DQC will be conducted and the PDT will hold a "page-turn" session to review the draft report to ensure consistency across the disciplines and resolve issues prior to the start of ATR. The DQC Team and the PDT may choose to flag issues for consideration by the ATR. DQC documentation will be part of the draft report package to ATR. Writer/editor services will be performed on the draft prior to ATR as well.

(4) The ATR process for this document will follow the following timeline. Actual dates will be scheduled once the period draws closer. All products produced for these milestones will be reviewed,

including those produced as in-kind services by the non-Federal sponsors.

Review Timeline

Review Task	Date to be Completed
Draft completed for PDT and DQC reviews	October 2011
Draft completed for ATR	October 2011
Draft completed for Public Agency Review	December 2011
Draft completed for IEPR	December 2011
Draft Final completed	September 2012
Review Certification and Final PADD to SPD	November 2012
Sign Project Partnership Agreement	December 2012

¹Required by the Major Subordinate Command.

F. Review

(1) ATRT responsibilities are as follows:

(a) Reviewers shall review conference material and the draft report to confirm that work was done in accordance with established professional principles, practices, codes, and criteria and for compliance with laws and policy. Comments on the report shall be submitted into DrChecks.

(b) Reviewers shall pay particular attention to one's discipline but may also comment on other aspects as appropriate. Reviewers that do not have any significant comments pertaining to their assigned discipline shall provide a comment stating this.

(c) Grammatical and editorial comments shall not be submitted into DrChecks. Comments should be submitted to the ATR manager via electronic mail using tracked changes feature in the Word document or as a hard copy mark-up. The ATR manager shall provide these comments to the Study Manager.

(d) Review comments shall contain these principal elements:

- 1 a clear statement of the concern
- 2 the basis for the concern, such as law, policy, or guidance
- 3 significance for the concern
- 4 specific actions needed to resolve the comment

(e) The "Critical" comment flag in DrChecks shall not be used unless the comment is discussed with the ATR manager and/or the Study Manager first.

(2) PDT Team responsibilities are as follows:

(a) The team shall review comments provided by the ATRT in DrChecks and provide responses to each comment using "Concur", "Non-Concur", or "For Information Only". Concur responses shall state what action was taken and provide revised text from the report if applicable. Non-Concur responses shall state the basis for the disagreement or clarification of the concern and suggest actions to negotiate the closure of the comment.

(b) ATRT members shall discuss any “non-Concur” responses prior to submission with the PDT and ATRT Leader.

G. Resolution

(1) Reviewers shall back check PDT responses to the review comments and either close the comment or attempt to resolve any disagreements. Conference calls shall be used to resolve any conflicting comments and responses.

(2) A reviewer may close a comment if the comment is addressed and resolved by the response, or if the reviewer determines that the comment was not a valid technical comment as a result of a rebuttal, clarification, or additional information, or because the comment was advisory, primarily based on individual judgment or opinion, or editorial. If reviewer and responder cannot resolve a comment, it should be brought to the attention of the ATR Leader and, if not resolved by the ATR Leader, it should be brought to the attention of the planning chief who will need to sign the certification. ATRT members shall keep the ATR Leader informed of problematic comments. The vertical team will be informed of any policy variations or other issues that may cause concern during HQ review.

H. Certification

ATR certification is required for the AFB, draft report, and final report. See Appendix A for ATR certification statement. A summary report of all comments and responses will follow this statement and accompany the report throughout the report approval process.

I. Alternative Formulation Briefing (AFB)

Since plan formulation is beyond the study scope, and since approval is delegated to CESP, an AFB is not required.

5. INDEPENDENT EXTERNAL PEER REVIEW PLAN

This post authorization decision document and accompanying documents will present the details of studies undertaken to allow implementation of Phase II bank protection. EC 1165-2-209 affirmed thresholds that trigger IEPR: “In cases where there are public safety concerns, a high level of complexity, novel or precedent-setting approaches; where the project is controversial, has significant interagency interest, has a total project cost greater than \$45 million, or has significant economic, environmental and social effects to the nation, IEPR will be conducted.” IEPR is divided into two types; Type I IEPR is generally for decision documents, while Type II is generally for implementation documents.

Type I IEPR is conducted on project studies. It is of critical importance for those decision documents and supporting work products where there are public safety concerns, a high level of complexity, novel, or precedent-setting approaches; has significant interagency interest; has significant economic, environmental, and social effects to the nation; or where the Chief of Engineers determines that the project is controversial. However, it is not limited to only those cases and most studies should undergo Type I IEPR.

Type II IEPR, a Safety Assurance Review (SAR), shall be conducted on design and construction activities for hurricane and storm risk management and flood risk management projects, as well as other projects where existing and potential hazards pose a significant threat to human life. External panels will conduct reviews of the design and construction activities prior to the initiation of physical construction and, until construction activities are completed, periodically thereafter on a regular schedule. The reviews shall consider the adequacy, appropriateness, and acceptability of the design and construction activities in assuring public health, safety, and welfare.

- The public safety concern is potential flooding due to a weakened levee from erosion. The project levees protect populations in rural and urban areas.
- Bank protection is not complex. The engineering design is rock placement and vegetative plantings for mitigation. In addition since the plan presented in the PADD and other documents is programmatic, it is at a lower than feasibility level of detail.
- Bank protection could be precedent setting as it may involve new interpretation of or special revision or exception to the Corps guidance on vegetation on levees. This issue has not yet been resolved. In addition,
- The economic evaluation and risk analysis is a novel approach in the sense that it will be an abbreviated version of the standard analysis typically used in feasibility studies. Since it has been previously agreed that a rigorous economic justification is beyond the scope of this study, the PADD plans to use a procedure specific to this study to capture site-by-site economic benefits. This analysis will include shortened hydraulic, geotechnical, and economic procedures. This will be the subject of an Issues Resolution Conference for Corps vertical team approval prior to the IEPR.
- Bank protection is controversial due to potential environmental effects and prioritization of sites. Habitat along many reaches of the SRFCP is critical to endangered and threatened species, and is considered high ecological, recreation, and esthetic value. Bank protection is expensive, thus only the most critical reaches that experience erosion are treated. The local perceived need for bank protection may not agree with priorities as set by the Corps and sponsor.
- Due to the likelihood that bank protection would take place on ecologically sensitive sites, there is close coordination with state and Federal resource agencies. An Interagency Working Group (IWG) is an established group that confers on Sacramento River Bank Protection. Close coordination also occurs with the sponsor, the State of California CVFPB.

- The estimated project cost for newly authorized Phase II bank protection is \$300+ million. This is over the \$45 million threshold for IEPR.
- The project includes an EIS. There would be substantial adverse impacts on resources, including endangered species, without mitigation.

From the above discussion it is concluded by the PDT that a Type II IEPR (SAR) is appropriate for this study. The PDT proposes that the Type II IEPR (SAR) be limited to economics, environmental analysis, geotechnical design, and hydraulic design. The complexities of this project do not touch on the other disciplines.

A. Project Risk. One risk of this project is the ability to implement bank protection in ecologically sensitive areas. Another risk is ability of the Corps and the sponsor to agree on rights of way acquisition procedures. Engineering design and construction are standard and non-complex so the technical risk is low.

B. Project Risk Magnitude. Bank protection is a necessary rehabilitation effort that significantly lowers the risk of levee failure due to erosion. There would be a steady annual increase in risk of levee failure if the bank protection project is curtailed. Levee failure consequences vary due to varying land use & development protected by levees. The project risk is thus considered high.

C. Vertical Team Consensus. This Review Plan will serve as the coordination document to obtain vertical team consensus. The Review Plan was approved April 17, 2009.

D. Products for Review. Interim products for review will be provided before the draft report is released for public review. The IEPR panel, consisting of environmental, geotechnical, hydraulic, and economic disciplines (or as modified by SPD or the PCX for FRM), will receive the entire draft PADD, EDR, EIS/EIR and all technical appendixes concurrent with public and agency review. Review of these draft documents will meet the IEPR requirement. However, a preliminary review of pre-draft documents will be done by the IEPR panel to anticipate if there would be major and significant comments that would substantially change the report, possibly requiring a resubmission for public review.

The final review report to be submitted by the IEPR panel must be submitted to the PDT within 60 days of the conclusion of public review. A representative of the IEPR panel must attend any public meeting(s) held during public and agency review of the draft report. The Sacramento District will draft a response to the IEPR final report and process it through the vertical team. No discussions with the Civil Works Review Board are planned for this study. Following vertical team review, the Corps will issue final response to the IEPR panel and notify the public.

E. Communication and Documentation. The communication plan for the IEPR is as follows:

(1) The panel will use DrChecks to document the IEPR process. The Study Manager will facilitate the creation of a project portfolio in the system to allow access by all PDT and the OEO. An electronic version of the document, appendices, and any significant and relevant public comments shall be posted in Word format at: <ftp://ftp.usace.army.mil/pub/> at least one business day prior to the start of the comment period.

The OEO will compile the comments of the IEPR panelists, enter them into DrChecks, and forward the comments to the District. The District will consult the PDT and outside sources as necessary to develop a proposed response to each panel comment. The District will enter the proposed response to DrChecks, and then return the proposed response to the panel. The panel will reply to the proposed

response through the OEO, again using DrChecks. This final panel reply may or may not concur with the District's proposed response and the panels final response will indicate concurrence or briefly explain what issue is blocking concurrence. There will be no final closeout iteration. The District will consult the vertical team and outside resources to prepare an agency response to each comment. The initial panel comments, the District's proposed response, the panels reply to the District's proposed response, and the final agency response will all be tracked and archived in DrChecks for the administrative record. However, only the initial panel comments and the final agency responses will be posted. This process will continue to be refined as experience shows need for changes.

(2) The PDT shall send each IEPR panel member shall download and print the appropriate documents and appendices.

(3) The Lead planner shall inform the IEPR panel when all responses have been entered into DrChecks and conduct a briefing to summarize comment responses to highlight any areas of disagreement.

(4) A revised electronic version of the report and appendices with comments incorporated shall be posted at <ftp://ftp.usace.army.mil/pub/> for use during back checking of the comments.

(5) PDT shall contact the OEO for the IEPR panel as appropriate to seek clarification of a comment's intent or provide clarification of information in the report. Discussions shall occur outside of DrChecks but a summary of discussions may be provided in the system.

(6) The IEPR panel shall produce a final Review Report to be provided to the PDT not later than 60 days after the close of the public and agency review of the draft report. This report shall be scoped as part of the effort to engage the IEPR panel. The Sacramento District will draft a response report to the IEPR final report and process it through the vertical team for discussion at the CWRB. Following direction at the CWRB and upon satisfactorily resolving any relevant follow-on actions, the Corps will finalize its response to the IEPR Review Report and will post both the Review Report and the Corps final responses to the public website.

F. Funding

The PCX for FRM will identify someone independent from the PDT to scope the IEPR and develop an Independent Government Estimate. The Sacramento District will provide funding to the IEPR panel. Estimated funds required for the IEPR is \$150,000.

6. MODEL CERTIFICATION

For the purposes of this RP section, planning models are defined as any models and analytical tools that planners use to define water resources management problems and opportunities, to formulate potential alternatives to address the problems and take advantage of the opportunities, to evaluate potential effects of alternatives and to support decision-making. It includes all models used for planning, regardless of their scope or source, as specified in the following sub-paragraphs. This RP section does not cover engineering models used in planning which will be certified under a separate process.

The computational models anticipated to be employed in the Sacramento River Bank Protection Project have either been developed by or for the USACE. Model certification and approval for all identified planning models will be coordinated through the PCX as needed. Project schedules and resources will be adjusted to address this process for certification and PCX coordination. Models that are potentially to be used are:

1. HEC-FDA: This model, developed by the Corps' Hydrological Engineering Center, will assist the PDT in applying risk analysis methods for flood damage reduction studies as required by, EM 1110-2-1419. This program:
 - o Provides a repository for both the economic and hydrologic data required for the analysis
 - o Provides the tools needed to understand the results
 - o Calculates the Expected Annual Damages and the Equivalent Annual Damages
 - o Computes the Annual Exceedence Probability and the Conditional Non-Exceedence Probability
 - o Implements the risk-based analysis procedures contained in EM 1110-2-1619
2. Standard Assessment Methodology (SAM) model. This model may be used for impact and mitigation assessment. It is not certified. A TRSS is proposed to determine if the study should seek model certification or avoid its use.
3. Various Habitat Evaluation Procedure models. The Ecosystem Restoration Planning Center of Expertise has responsibility for approving ecosystem output methodologies for use in ecosystem restoration planning and mitigation planning. The Ecosystem PCX will need to certify or approve for use each regionally modified version of these methodologies and individual models and guidebooks used in application of these methods. The PDT will coordinate with the Ecosystem PCX during the study to identify appropriate models and certification approval requirements. It is anticipated that all habitat evaluation models will have already been certified.
4. IWR-Planning Suite (Certified). This software assists with the formulation and comparison of alternative plans. This project will not be performing plan formulation, thus this model will not be used.
5. IMPLAN: This is an economic model measuring the quantitative impacts on Regional Economic Development (RED) due to project alternatives. This model is in the process of being approved, but does not require certification.

The following are considered to be engineering models as opposed to planning models and undergo a different review and approval process for usage. Engineering tools anticipated to be used in this study are:

1. MCACES or MII: These are cost estimating models.
2. HEC-RAS: The function of this model is to complete one-dimensional hydraulic calculations for a full network of natural and man made channels. HEC-RAS major capabilities are:
 - o User interface
 - o Hydraulic Analysis
 - o Data storage and Management
 - o Graphics and reporting
3. HEC-2: The HEC-2 program computes water surface profiles for one-dimensional steady, gradually varied flow in rivers of any cross section.
4. FLO-2D: This model will be used for the overbank reaches.
5. UTexas4: This model is used to conduct slope stability analysis

7. PUBLIC REVIEW

The public will have opportunities to participate in this study. The earliest opportunity will be as part of the NEPA public scoping process during the first year of the study. Public review of the draft feasibility report will occur after issuance of the AFB policy guidance memo and concurrence by HQUSACE that the document is ready for public release. As such, public comments other than those provided at any

public meetings held during the planning process will not be available to the review teams. Public review of the draft report will begin approximately 1 month after the completion of the ATR process and policy guidance memo. The period will last a minimum of 45 days as required for an Environmental Impact Statement. One or more public workshops will be held during the public review period. Comments received during the public comment period for the draft report could be provided to the IEPR team prior to completion of the final Review Report and to the ATRT before review of the final Decision Document. The public review of necessary state or Federal permits will also take place during this period. A formal State and Agency review will occur concurrently with the public review. However, it is anticipated that intensive coordination with these agencies will have occurred concurrent with the planning process. Upon completion of the review period, comments will be consolidated in a matrix and addressed, if needed. A comment resolution meeting will take place if needed to decide upon the best resolution of comments. A summary of the comments and resolutions will be included in the document. A plan for public participation will be developed early in the study which might identify informal as well as additional formal forums for participation in the study.

8. STUDY TEAMS AND PLANNING CENTERS OF EXPERTISE COORDINATION

A. Project Delivery Team.

The PDT is comprised of those individuals directly involved in the development of the decision document. Individual contact information and disciplines are presented in appendix B. In accordance with the PMP, it is planned that the CVFPB will contribute in-kind services for project management.

B. Vertical Team.

The Vertical Team includes Sacramento District management, District Support Team (DST) at SPD, and Regional Integration Team (RIT) staff as well as members of the Planning of Community of Practice (PCoP). Specific points of contact for the Vertical Team can be found in Appendix B.

C. PCX:

The appropriate PCX for this document is the National Flood Risk Management Center of Expertise located at SPD. The FRM-PCX will coordinate with the National Ecosystem Restoration Planning Center of Expertise at MVD, as appropriate. This Review Plan will be submitted to the FRM-PCX Program Manager review and comment. Since it was determined that this project is high risk, an IEPR will be required. As such, the PCX will be asked to manage the IEPR review. For ATR, the PCX is requested to nominate the ATR team as discussed in paragraph 3.b. above. The Review Plan approved April 17, 2009 has been posted to the District's public website.

D. Review Plan Points of Contact

The Points of Contact for questions and comments to this Review Plan are as follows:

1. District Point of Contact: (916) 557-6931
2. MSC Point of Contact: (415) 503-6557
3. FRM-PCX Point of Contact: (415) 503-6852

1.0 9. APPROVALS

The PDT will carry out the Review Plan as described. The Lead planner will submit the Review Plan to the FRM-PCX for review and recommendation for approval. After FRM-PCX review and

recommendation, the PDT District Planning Chief will forward the Review Plan to their respective MSC for commander approval. Formal coordination with FRM-PCX will occur through the PDT District Planning Chief. The Review Plan was approved April 17, 2009.

The Review Plan is a "living document" and shall be updated as needed during the study process. The FRM-PCX shall be provided an electronic copy of any revised approved Review Plan. The PDT shall follow their DST's guidance for processing revised Review Plans for their respective MSCs