



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
SOUTH PACIFIC DIVISION, CORPS OF ENGINEERS
1455 MARKET STREET
SAN FRANCISCO, CALIFORNIA 94103-1399

CESPD-PDC

27 August 2010

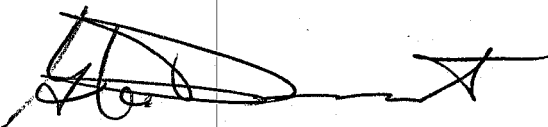
MEMORANDUM FOR Commander, Sacramento District, ATTN: CESPK-PD-WF,
Ms. Kimberly Carsell

SUBJECT: Review Plan approval for the Lower Cache Creek, Yolo County, City of Woodland
and Vicinity, California, Multi-purpose Feasibility Study.

1. The enclosed Review Plan for the Lower Cache Creek, Yolo County, City of Woodland and Vicinity, California Multi-purpose Feasibility Study, August 2010, has been prepared in accordance with EC 1165-2-209. The Review Plan has been coordinated internally within the District Support Team and with the Risk Management Center. The South Pacific Division Programs Support Division Planning (CESPD-PDS-P) will serve as the interim Risk Management Office.
2. The Review Plan includes independent external peer review.
3. I hereby approve this Review Plan, which is subject to change as circumstances require, consistent with study development under the Project Management Business Process. Subsequent revisions to this Review Plan or its execution will require new written approval from this office.
4. The Point of Contact for this action is Karen Berresford, CESPD-PDC, (415) 503-6557, Karen.G.Berresford@spd02.USACE.army.mil.

Building Strong on the Cornerstone of the Southwest!

FOR THE COMMANDER:


for Ms. Christine Altendorf, PhD, P.E.
Director of Regional Business

Encl

1. Review Plan, August 2010

REVIEW PLAN

**LOWER CACHE CREEK, YOLO COUNTY,
CITY OF WOODLAND AND VICINITY, CA**

FEASIBILITY STUDY

SACRAMENTO DISTRICT

August 2010



**US Army Corps
of Engineers ®**

REVIEW PLAN

**LOWER CACHE CREEK, YOLO COUNTY,
CITY OF WOODLAND AND VICINITY, CA**

FEASIBILITY STUDY

TABLE OF CONTENTS

1. PURPOSE AND REQUIREMENTS.....	1
2. STUDY INFORMATION	3
3. AGENCY TECHNICAL REVIEW	7
4. TYPE I INDEPENDENT EXTERNAL PEER REVIEW	10
5. TYPE II INDEPENDENT EXTERNAL PEER REVIEW	12
6. MODEL CERTIFICATION AND APPROVAL.....	13
7. REVIEW SCHEDULES AND COSTS	14
8. PUBLIC PARTICIPATION	16
9. PCX COORDINATION	16
10. MSC APPROVAL	17
11. REVIEW PLAN POINTS OF CONTACT	17
ATTACHMENT 1: TEAM ROSTERS	18
ATTACHMENT 2: ATR CERTIFICATION TEMPLATE.....	21
ATTACHMENT 3: REVIEW PLAN ACRONYMS AND ABBREVIATIONS.....	23

1. PURPOSE AND REQUIREMENTS

a. Purpose. This Review Plan defines the scope and level of peer review for the Lower Cache Creek, Yolo County, City of Woodland and Vicinity, California multi-purpose (flood risk management, ecosystem restoration, and recreation) feasibility study.

b. References

- (1) Engineering Circular (EC) 1165-2-209, Civil Works Review Policy, 31 January 2010.
- (2) Engineer Regulation (ER) 1110-2-12, Quality Management, 30 September 2006.
- (3) CESP Reg. 1110-1-8, Quality Management Plan, 30 December 2002.
- (4) Lower Cache Creek draft Project Management Plan, January 2010.
- (5) Lower Cache Creek, Yolo County, CA, City Of Woodland and Vicinity, Draft Feasibility Report For Potential Flood Damage Reduction Project, March 2003.

c. Requirements. This Review Plan was developed in accordance with EC 1165-2-209, which establishes the procedures for ensuring the quality and credibility of the U.S. Army Corps of Engineers (USACE) decision and implementation documents through independent review. The ECs outlines three levels of review: District Quality Control, Agency Technical Review, and Independent External Peer Review. In addition to these three levels of review, decision documents are subject to policy and legal compliance review, and model certification/approval.

- (1) District Quality Control (DQC). DQC is the review of basic science and engineering work products focused on fulfilling the project quality requirements defined in the Project Management Plan (PMP). It is managed in the home district and may be conducted by staff in the home district as long as they are not doing the work involved in the study, or overseeing contracted work that is being reviewed. Basic quality control tools include a Quality Management Plan providing for seamless review, quality checks and reviews, supervisory reviews, Project Delivery Team (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 approval by the District Commander. The Major Subordinate Command (MSC)/District quality management plans address the conduct and documentation of this fundamental level of review; DQC is not addressed further in this Review Plan.
- (2) Agency Technical Review (ATR). ATR is 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 the 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.

For ATR on decision documents, the Review Management Organization (RMO) generally will be the appropriate Planning Center of Expertise (PCX), e.g. for flood risk management (FRM) decision documents, the FRM PCX would manage the effort. For decision documents with multiple purposes (or project purposes not clearly aligned with the PCXs), the home MSC should designate a lead PCX to conduct the review after coordinating with each of the relevant Centers. There shall be appropriate consultation throughout the review with the allied Communities of Practice (CoPs) such as engineering and real estate, other relevant PCXs, and other relevant offices to ensure that a review team with appropriate expertise is assembled and a cohesive and comprehensive review is accomplished. There shall be coordination with the Cost Engineering Directory of Expertise (DX), which will provide the cost engineering review and resulting certification. ATR efforts will include the necessary expertise to address compliance with applicable published policy. When policy and/or legal concerns arise during ATR efforts that are not readily and mutually resolved by the PDT and the reviewers, the district will seek issue resolution support from the MSC and HQUSACE in accordance with the procedures outlined in Appendix H of ER 1105-2-100, or other appropriate guidance.

- (3) Independent External Peer Review (IEPR). 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. Any work product, report, evaluation, or assessment that undergoes DQC and ATR also may be required to undergo IEPR under certain circumstances. A risk-informed decision, as described EC 1165-2-209, will be made as to whether IEPR is appropriate for that product. IEPR panels will be made up of independent, recognized experts from outside of the USACE in the appropriate disciplines, representing a balance of areas of expertise suitable for the review being conducted. Panel members will be selected using the National Academies of Science (NAS) policy for selecting reviewers. IEPR teams are not expected to be knowledgeable of Army and administration policies, nor are they expected to address such concerns. IEPR is divided into two types, Type I is generally for decision documents and Type II is generally for implementation documents.
- A. 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.
- B. 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. This study will not include design or construction: Type II IEPR is not addressed further in this plan. However, since the decision document is the basis of ultimate design, safety assurance will be incorporated into the project as appropriate.
- (4) Value Engineering (VE). A Value Engineering study will be conducted and a report will be prepared to show the value engineering process was used. The aim of the VE studies should be to ensure that the widest range of engineeringly feasible and cost efficient measures are considered and that alternatives formulated from those measures are not limited to those that first come to mind at the initiation of the study. Putting this step into the process ensures consideration of the fullest range of measures and alternatives.
- (5) Policy and Legal Compliance Review. 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 of ER 1105-2-100. When policy and/or legal concerns arise during DQC or ATR that are not readily and mutually resolved by the PDT and the reviewers, the District will seek issue resolution support from the MSC and HQUSACE in accordance with the procedures outlined in Appendix H, ER 1105-2-100. The home district Office of Counsel is responsible for the legal review of each decision document and certification of legal sufficiency.
- (6) Model Certification/Approval. EC 1105-2-407 requires certification (for Corps models) or approval (for non-Corps models) of planning models used for all planning activities. The EC defines planning models 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. The EC does not cover engineering models used in planning. Engineering software is being addressed under the Engineering and Construction (E&C) Science and Engineering Technology (SET)

initiative. Until an appropriate process that documents the quality of commonly used engineering software is developed through the SET initiative, engineering activities in support of planning studies shall proceed as in the past. The responsible use of well-known and proven USACE developed and commercial engineering software will continue and the professional practice of documenting the application of the software and modeling results will be followed.

2. STUDY INFORMATION

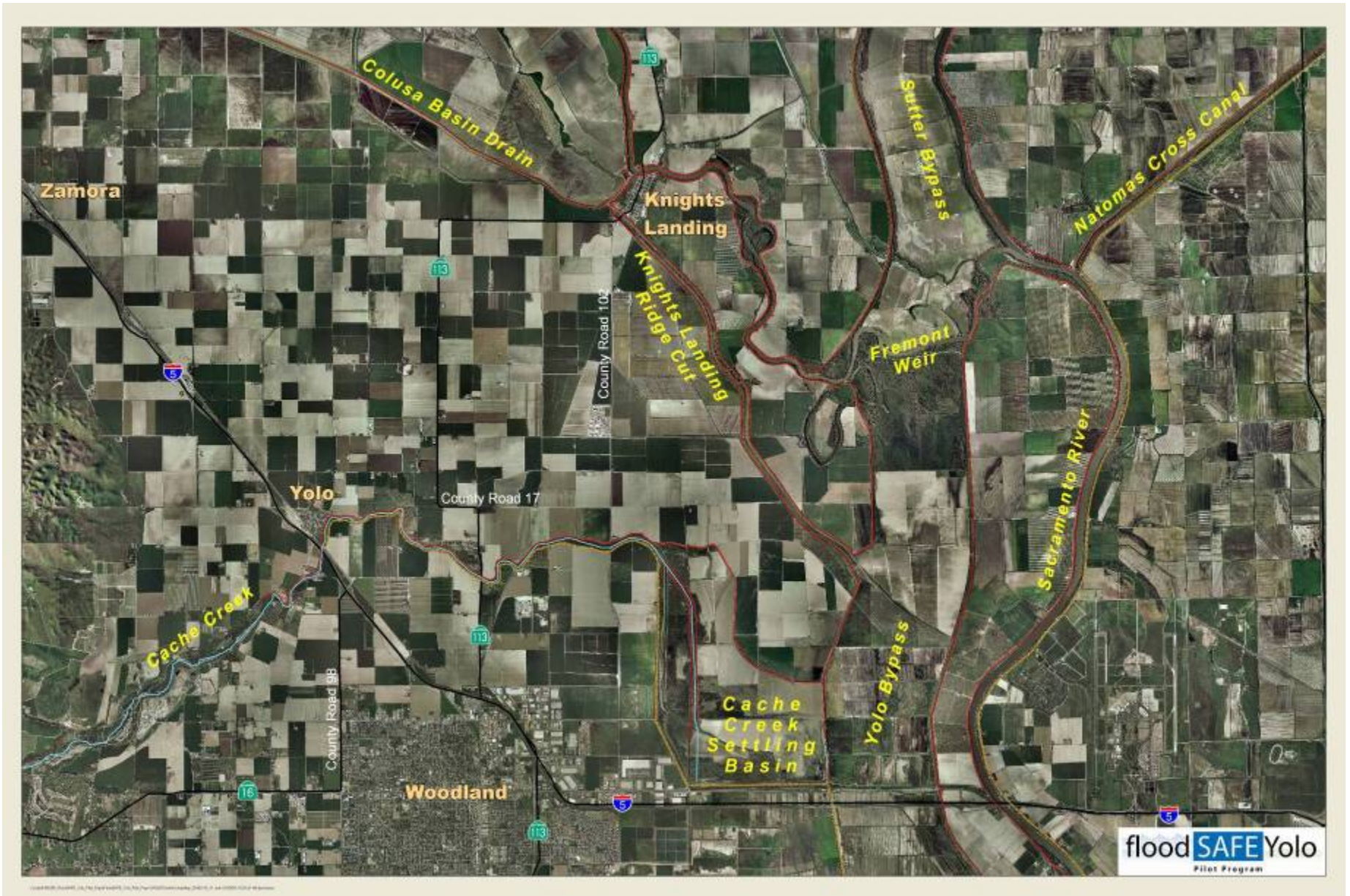
- a. **Decision Document.** The purpose of the study is to identify flood risk reduction, ecosystem restoration, and recreation-related issues in the study area. The decision document, a General Investigation Feasibility Study report, is expected to be the basis for a recommendation to Congress for authorization of a new project. The report will present planning, engineering, and implementation details of the recommended plan to allow final design and construction to proceed subsequent to approval of the recommended plan. The feasibility phase of this project will be cost shared, 50 percent Federal and 50 percent non-Federal, with the project sponsors. The sponsors are: State of California Central Valley Flood Protection Board (CVFPB) and Yolo County Flood Control and Water Conservation District. These agencies are herein referred to as non-Federal sponsors.
- b. **Study Description.** A reconnaissance study, initiated in April 1993 at the request of the Yolo County Board of Supervisors identified sufficient potential Federal interest to proceed with a feasibility-level investigation of flood damage reduction alternative plans along Lower Cache Creek. In 2003 USACE and non-Federal sponsors released the “Draft Feasibility Report for Potential Flood Damage Reduction Project” for public review and comment. The report identified three alternative plans:
- No action plan.
 - Lower Cache Creek flood barrier (LCCFB) plan. The LCFB plan primarily consisted of construction of a 6-mile long flood barrier along the northern urban limit line of Woodland. This was the National Economic Development (NED) plan.
 - Modified wide setback levee (MWSL) plan. The MWSL plan primarily consisted of constructing approximately 19 miles of levees along lower Cache Creek.

The NED plan was rejected by the public. New issues have caused the public and non-Federal sponsors to refocus on flood risk reduction measures. The non-Federal sponsors have requested a multi-purpose feasibility study that builds, to the extent possible, on the previous study and takes into consideration additional alternatives identified by the non-Federal sponsors; ecosystem restoration; and recreation.

The location of the study, as shown in Figure 1, is the entire Cache Creek watershed from the eastern foothills of the Coast Range Mountains to the western levees of the Yolo Bypass. The area includes parts of Yolo, Colusa, and Lake Counties and three sub-basins of the Sacramento River basin: Cache Creek, Willow Slough, and Putah Creek. The primary communities in the study area include Woodland, Yolo, Madison, and Esparto. Per findings from the reconnaissance study, the focal area for the feasibility study is Lower Cache Creek. The study will focus on flood damage reduction, ecosystem restoration, and recreation. Nonstructural flood risk reduction measures, structural flood risk reduction measures, ecosystem restoration measures, and recreation measures will be considered in the study. Nonstructural measures reduce flood damages rather than control floodwaters. Nonstructural measures to be considered will include, but are not limited to, raising and flood proofing structures; relocating structures and implementing flood warning systems. Structural measures reduce flood risk by physically limiting the extent of floodwaters. Structural measures to be considered will include, but are not limited to, modifying, relocating, or building new levees and improving or adding drainage channels.

The cost of the recommended plan will depend on the measures included. The total investment cost of the NED plan reported in the 2003 feasibility study was \$43.8 million. It is anticipated that the recommended plan for this study will be \$45 million or more.

Figure 1. Project Location



- c. **Factors Affecting the Scope and Level of Review.** Quality control will be reviewed through DQC, ATR, and Type I IEPR. Questions that must be considered in determining the scope and level of review are identified in column 1 of Table 2. The PDT's assessment of these questions in relation to this study is listed column 2 of Table 2.

Table 2. Factors Affecting Scope and Level of Review

Questions to Determine Scope	Lower Cache Creek Feasibility Study
Will parts of the study be challenging?	The Cache Creek Settling Basin is in the project area. The settling basin was constructed in 1937 and modified in 1993 to preserve the floodway capacity of the Yolo Bypass by trapping sediment loads carried by Cache Creek during the flood season and to prevent sediment from depositing downstream in flood control and navigation channels. The presence of the settling basin increases the complexity of the project. There may also be complex challenges due to sediment transport/balance.
Will the study report contain influential scientific information or be a highly influential scientific assessment?	It is not anticipated that the study will include influential scientific information.
Will the study have significant economic, environmental, and/or social effects to the Nation?	The study may have significant economic and environmental effects. An Environmental Impact Statement (EIS) will be required for this study.
Will the study have significant interagency interest?	The study has local, state, and Federal interest.
Will the study have significant threat to human life/safety assurance?	The study includes levees in the vicinity of an urbanized area subjected to flooding and thus presents a threat to human life/safety.
Will the study be highly controversial?	The project has potential for public controversy.
Will the information in the decision document be based on novel methods, present complex challenges for interpretation, contain precedent-setting methods or models, or present conclusions that are likely to change prevailing practices?	It is not likely that the study will result in precedent-setting methods, models, or practices.

Questions to Determine Scope	Lower Cache Creek Feasibility Study
<p>What are the likely study risks and the magnitude of the risks?</p>	<p>The moderate to high level risks identified by the PDT include:</p> <ul style="list-style-type: none"> • Technical in-kind contributions. The non-Federal sponsors will be completing much of the technical analysis for this study, including surveys and mapping, hydrologic and hydraulic studies, geotechnical studies, engineering, and design analysis. This increases the amount of review. There is a risk that the non-Federal sponsors' work may not meet USACE requirements and will require modification; thus creating a schedule delay. The risk will be somewhat mitigated by: (1) scopes of work for in-kind contributions will be written or reviewed by Corps subject matter experts and (2) seamless overview of technical work will be conducted. • Public controversy. As demonstrated by the 2003 Lower Cache Creek feasibility study, the project has potential for public controversy. The non-Federal sponsors have communicated concerns. The risk will be somewhat mitigated by careful communications with small public groups to gain project acceptance and careful communications with the public in general.

- d. In-Kind Contributions.** The non-Federal sponsors' in-kind contribution will include providing existing reports and data; leading public involvement actions; providing input during screening and formulation of alternatives; attendance at the feasibility scoping meeting, alternative review conference, and alternative formulation briefing; review of products and documentation; general project management and coordination with the Corps throughout the project; and providing technical work.

All in-kind technical work will be reviewed for compliance with the Corps' criteria and guidelines. All in-kind technical work will be reviewed by ATR. A summary of the non-Federal sponsors' technical contribution includes:

- (1) Floodplain surveys and mapping. This task is being performed by the non-Federal sponsors under the Central Valley Floodplain Evaluation & Delineation Project (CVFED). The non-Federal sponsors will have additional processing of the LiDAR data to produce the topographic maps. The mapping will meet U.S. Bureau of the Budget's "United States National Map Accuracy Standards" and comply with standards and requirements of Design Manual 4-805-10, "Surveying and Mapping," dated December 1991. The final product will be in a GIS format produced in Arc Info and Intergraph files.
- (2) Hydrology. The non-Federal sponsors have completed a hydrology study for Cache Creek. This study will be reviewed by the Corps and, if it is acceptable, will be used for the Lower Cache Creek project. If the non-Federal sponsors' hydrology study does not meet the Corps' criteria and guidelines, the project will use hydrology being updated by the Corps, under an agreement with non-Federal sponsors. This effort is part of the Central Valley Flood Protection Plan (CVFPP) and CVFED.
- (3) Channel cross sections. The channel cross sections will be produced from the LiDAR data point files that were captured in April 2008. Bathymetric and ground based surveys will need to be collected as necessary in addition to the LiDAR data to complete the channel cross sections. Cross sections will be developed as required to support the hydraulic modeling but in no circumstance will there be fewer than five sections per mile.

- (4) Hydraulic design. The non-Federal sponsors will complete all hydraulic analyses necessary for existing conditions, future without-project conditions, evaluation of alternatives, preparation of design and cost estimates for optimization studies, and the development of the NED plan.
- (5) Floodplain studies. The non-Federal sponsors will use present and future condition overflows for 2-, 5-, 10-, 50-, 100-, 200-, and 500-year flood frequencies to determine floodplain boundaries and depths of flooding for the project reach and overflow areas.
- (6) Sedimentation studies. The non-Federal sponsors will conduct sediment transport analysis for Cache Creek and along with other elements of the flood control system – including the Yolo Bypass, Fremont Weir, Knights Landing Ridge Cut and Colusa Basin Drain, and the Sacramento River. The non-Federal sponsors will also conduct a sediment transport analysis for the development and analysis of various alternatives.
- (7) Geotechnical studies. DWR, under its Urban Levee Geotechnical Evaluations Program, completed a Technical Review Memorandum for the Woodland Study Area and a Technical Review Memorandum for Cache Creek-South Levees. The results of this effort are helpful in identifying problems and outlining any additional investigative work required to advance through feasibility and design. The non-Federal sponsors will prepare a geotechnical report for purposes of the feasibility study. The extent of the data to be incorporated will depend on DWR's schedule for additional field data gathering. Additional geotechnical investigations for with-project conditions will also be conducted by the non-Federal sponsors. Drilling data is required to be entered into gINT, a GIS based software for logging. The non-Federal sponsors and their contractors must follow ASTM D2488-00 Standard Practice for Description and Identification of Soils (Visual-Manual Procedure). USACE Hydraulic Design PDT will incorporate results in developing engineering design parameters, slope stability, seepage analysis, and so on.
- (8) Engineering and design analysis. The non-Federal sponsors will prepare the feasibility quality design and cost estimates for the alternatives to be evaluated and final design and cost estimates for the NED plan. The non-Federal sponsors will prepare the engineering basis of design (BOD). The BOD is a narrative report that documents all engineering studies, designs, and cost estimates that have been prepared. The Engineering and Design PDT member will review, coordinate, and approve the BOD. The non-Federal sponsors will develop the preliminary construction procedure, construction sequence, and water control plan for each step of the proposed plan.

3. AGENCY TECHNICAL REVIEW

- a. General.** ATR for this study will be managed by the FRM PCX with appropriate consultation by the allied Communities of Practice such as engineering and real estate. The ATR shall ensure that the product is consistent with established criteria, guidance, procedures, and policy. The ATR will assess whether the analyses presented are technically correct and comply with published USACE guidance, and that the document explains the analyses and the results in a reasonably clear manner for the public and decision makers. Members of the ATR team will be from outside the home district. The ATR lead will be from outside the home MSC. The leader of the ATR team will participate in milestone conferences and the Civil Works Review Board (CWRB) to address review concerns.
- b. Products for Review.** The products to undergo ATR for the study will include:
 - (1) In-kind technical contributions from non-Federal sponsors.
 - (2) Without-project hydrology (SPD requirement).
 - (3) Feasibility Scoping Meeting (FSM) documentation.
 - (4) Alternative Review Conference (ARC) documentation (SPD requirement).

- (5) Alternative Formulation Briefing (AFB) documentation.
- (6) Draft report, including NEPA/environmental compliance documentation and technical appendices.
- (7) Final report, including NEPA/environmental compliance documentation and technical appendices.

The FSM and AFB materials and supporting analyses warrant ATR because they provide the basis for HQUSACE to determine whether Washington-level agreement with the future without-project condition and support for the tentatively selected plan is warranted. The FSM and AFB submittal materials, draft report, and supporting materials merit ATR because they will be released to the public for review and determine the public, stakeholder, state, other agency, and other interest group positions on the tentatively selected plan. The final report and supporting analyses warrant ATR because they will provide the basis for the Chief of Engineers interagency coordination and the Chief's approval or further recommendation to the Secretary of the Army and the Congress, as needed.

ATR members will be provided with any significant public comments made during public meeting and on the products under review.

Each application of ATR should build upon any and all prior cycles of review for the study. Each ATR review iteration needs only address incremental changes and additions to documents and analyses addressed in prior ATR reviews, unless the ATR team determines that certain subjects or aspects warrant revisiting due to other changes or a need to adequately understand a larger portion of the project.

- c. **Required ATR Team Expertise.** The ATR team will be established shortly after the FCSA is executed. The team will be comprised of individuals from outside the home district that have not been involved in the development of the decision document and will be chosen based on expertise, experience, and/or skills. It is anticipated that the team will consist of 11 reviewers. The following types of expertise may be represented on the ATR team:

- (1) Planning – Team member will be experienced with the civil works process, watershed level projects, and current flood damage reduction planning and policy guidance. Team member will have experience in plan formulation for multi-purpose projects and planning in a collaborative environment.
- (2) Hydrology – Team member will be an expert in the field of rainfall runoff models, flow-frequency analysis, hydrologic effects of flood control operations, and hydrologic analysis using HEC-HMS. Team member will have familiarity with flood control challenges in California's Central Valley.
- (3) Hydraulics – Team member will be an expert in the field of hydraulics and have a thorough understanding of open channel dynamics; enclosed channel systems; detention/retention basins; application of levees and flood walls; sediment transport; computer modeling techniques, such as HEC-RAS and FLO-2D; and non-structural solutions involving flood warning systems, and flood proofing, etc.
- (4) Real Estate/Lands – Team member will be familiar with the Corps' process of valuation of real estate costs associated with the acquisition of the project's real property.
- (5) Environmental Resources – Team member will have a solid background in the habitat types found in California's Central Valley, understand the factors that influence the reestablishment of native species of plants and animals, understand requirements for NEPA/CEQA documentation, and be familiar with the cultural resource discipline.
- (6) Economics – Team member will be familiar with the processes used in evaluation of flood risk management, ecosystem restoration, and recreation projects. Team member will have recent experience in preparing economic analysis plans for multi-purpose feasibility including all four

project accounts: National Economic Development (NED), Environmental Quality (EQ), Regional Economic Development (RED), and Other Social Effects (OSE).

- (7) Geotechnical Engineering – Team member will have extensive experience in geotechnical evaluation of flood risk management structures such as static and dynamic slope stability evaluation; evaluation of the seepage through earthen embankments; and underseepage through the foundation of flood risk management structures.
- (8) Cost Engineering – Team member will have extensive Corps' experience in the application of scientific principles and techniques to problems of cost estimating, cost control, business planning and management science, profitability analysis, project management, and planning and scheduling.
- (9) Geology – Team member will have extensive experience in and knowledge of subsurface geology in California's Central Valley.
- (10) Civil Design – Team member will have expertise in utility relocations, positive closure requirements and internal drainage for levee construction, and application of non-structural flood damage reduction.
- (11) HTRW – Team member will have expertise in assessment of hazardous, toxic, and radiological waste (HTRW) to determine the nature and extent of HTRW materials within the project area.

The PCX(s), in cooperation with the PDT and vertical team, will determine the final make-up of the ATR team. It is not anticipated that the public, including scientific or professional societies will be asked to nominate potential ATR members. The name, organization, contact information, credentials, and years of experience of each member will be identified at the time the review is conducted.

d. Documentation of ATR. DrChecks review software will be used to document all ATR comments, responses, and associated resolutions accomplished throughout the review process. Comments should be limited to those that are required to ensure adequacy of the product. The four key parts of a review comment will normally include:

- (1) The review concern – identify the product's information deficiency or incorrect application of policy, guidance, or procedures.
- (2) The basis for the concern – cite the appropriate law, policy, guidance, or procedure that has not been properly followed.
- (3) The significance of the concern – indicate the importance of the concern with regard to its potential impact on the plan selection, recommended plan components, efficiency (cost), effectiveness (function/outputs), implementation responsibilities, safety, Federal interest, or public acceptability.
- (4) The probable specific action needed to resolve the concern – identify the action(s) that the PDT must take to resolve the concern.

In some situations, especially addressing incomplete or unclear information, comments may seek clarification in order to assess whether further specific concerns may exist. The ATR documentation in DrChecks will include the text of each ATR concern, the PDT response, a brief summary of the pertinent points in any discussion, including any vertical coordination, and lastly the agreed upon resolution. The ATR team will prepare a Review Report which includes a summary of each unresolved issue; each unresolved issue will be raised to the vertical team for resolution. Review Reports will be considered an integral part of the ATR documentation and shall also:

- (1) Disclose the names of the reviewers, their organizational affiliations, and include a short paragraph on both the credentials and relevant experiences of each reviewer.
- (2) Include the charge to the reviewers prepared by the PCX in accordance with EC 1165-2-209, 7c.
- (3) Describe the nature of their review and their findings and conclusions.
- (4) Include a verbatim copy of each reviewer's comments and the PDT's responses.

ATR may be certified when all ATR concerns are either resolved or referred to HQUSACE for resolution and the ATR documentation is complete. Certification of ATR should be completed, based on work reviewed to date, for the AFB, draft report, and final report. A draft certification is included in Attachment 1.

4. TYPE I INDEPENDENT EXTERNAL PEER REVIEW

- a. **General.** Type I IEPR is conducted for decision documents if there is a vertical team decision (involving the district, MSC, PCX, and HQUSACE members) that the covered subject matter meets certain criteria (described in EC 1165-2-209) where the risk and magnitude of the proposed project are such that a critical examination by a qualified team outside the USACE is warranted. Type I IEPR is coordinated by the appropriate PCX and managed by an Outside Eligible Organization (OEO) external to the USACE. Type I IEPR panels shall evaluate whether the interpretations of analysis and conclusions based on analysis are reasonable. To provide effective review, in terms of both usefulness of results and credibility, the review panels should be given the flexibility to bring important issues to the attention of decision makers; however, review panels should be instructed to not make a recommendation on whether a particular alternative should be implemented, as the Chief of Engineers is ultimately responsible for the final decision on a planning or reoperations study. Type I IEPR panels will accomplish a concurrent review that covers the entire decision document and will address all the underlying engineering, economics, and environmental work, not just one aspect of the study. Whenever feasible and appropriate, the office producing the document shall make the draft decision document available to the public for comment at the same time it is submitted for review (or during the review process) and sponsor a public meeting where oral presentations on scientific issues can be made to the reviewers by interested members of the public. A Type I IEPR panel or OEO representative will participate in the CWRB.
- b. **Decision on Type I IEPR.** The decision to conduct Type I IEPR is made by comparing EC 1165-2-209 criterion to the study, as shown in Table 3. Based on these factors, Type I IEPR will be conducted.

Table 3. Decision on Type I IEPR

EC 1165-2-209 Criteria	Lower Cache Creek Feasibility Study
Is there significant threat to human life?	The study includes levees in the vicinity of an urbanized area subject to flooding and thus presents a threat to human life/safety.
Is the total project cost more than \$45 million?	The estimated project cost is \$45 million or more.
Has the Governor of California requested a Type I IEPR?	The Governor has not requested a Type I IEPR.
Has the head of a Federal or state agency charged with reviewing the project study requested a Type I IEPR?	No requests have been received for a Type I IEPR for this study.
Will there be significant public controversy as to size, nature, or effects of the project?	The project has potential for public controversy, as demonstrated by the 2003 Lower Cache Creek feasibility study.

EC 1165-2-209 Criteria	Lower Cache Creek Feasibility Study
Will there be significant public controversy as to the economic or environmental cost or benefit of the project?	The project has potential for public controversy, as demonstrated by the 2003 Lower Cache Creek feasibility study.
Will the study be based on information from novel methods, present complex challenges or interpretation, contain precedent-setting methods or models, or present conclusions that are likely to change prevailing practices?	The presence of the Cache Creek Settling Basin adds to the complexity of the study.

c. **Products for Review.** The Type I IEPR will be performed for the draft report, including NEPA/environmental compliance documentation and technical appendices. Type I IEPR panel members will be provided with ATR documentation and significant public comments made during public meetings and on the products under review.

d. **Required Type I IEPR Panel Expertise.** The Type I IEPR panel members 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. It is anticipated that the team will consist of 7 reviewers. The following types of expertise may be represented on the Type I IERP team:

- (1) Hydrology and Hydraulics – Panel member will be an expert in the field of hydrology and hydraulics and have a thorough understanding of rainfall runoff models, flow-frequency analysis, hydrologic effects of flood control operations, open channel dynamics, knowledge of detention/retention basins, application of levees and flood walls, and non-structural solutions.
- (2) Economics – Team member will be familiar with the processes used in evaluation of flood risk management, ecosystem restoration, and recreation projects. Team member will have recent experience in preparing economic analysis plans for multi-purpose feasibility including all four project accounts: NED, EQ, RED, and OSE.
- (3) Environmental Resources – Team member will have a solid background in the habitat types to be found in California’s Central Valley, understand the factors that influence the reestablishment of native species of plants and animals, understand requirements for NEPA/CEQA documentation, and be familiar with the cultural resource discipline.
- (4) Cost Engineering – Team member will have extensive Corps’ experience in the application of scientific principles and techniques to problems of cost estimating, cost control, business planning and management science, profitability analysis, project management, planning and scheduling.
- (5) Civil Design –Team member will have expertise in utility relocations, positive closure requirements and internal drainage for levee construction, and application of non-structural flood damage reduction.
- (6) Geotechnical Engineering – Panel member will have extensive experience in geotechnical evaluation of flood risk management structures such as static and dynamic slope stability evaluation; evaluation of the seepage through earthen embankments; and underseepage through the foundation of flood risk management structures.
- (7) HTRW – Team member will have expertise in assessment of hazardous, toxic, and radiological waste (HTRW) to determine the nature and extent of HTRW materials within the project area.

The OEO will determine the final participants on the Type I IEPR panel. The name, organization, contact information, credentials, and years of experience of each member will be identified at the time the review is conducted and will be included in Attachment I of this Review Plan.

e. Documentation of Type I IEPR. DrChecks review software will be used to document Type I IEPR comments and aid in the preparation of the Review Report. Comments should address the adequacy and acceptability of the economic, engineering and environmental methods, models, and analyses used. Type I IEPR comments should generally include the same four key parts as described for ATR comments in Section 3. The OEO will be responsible for compiling and entering comments into DrChecks. The Type I IEPR panel will prepare a Review Report that will accompany the publication of the final report for the project and shall:

- (1) Disclose the names of the reviewers, their organizational affiliations, and include a short paragraph on both the credentials and relevant experiences of each reviewer.
- (2) Include the charge to the reviewers prepared by the PCX.
- (3) Describe the nature of their review and their findings and conclusions.
- (4) Include a verbatim copy of each reviewer's comments (either with or without specific attributions), or represent the views of the group as a whole, including any disparate and dissenting views.

The final Review Report will be submitted by the Type I IEPR panel no later than 60 days following the close of the public comment period for the draft decision document. The 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 Type I IEPR Review Report and will post both the Review Report and the Corps' final responses to the public website.

5. TYPE II INDEPENDENT EXTERNAL PEER REVIEW

a. General. Type II IEPR Safety Assurance Review (SAR) is required on design and construction activities for any flood risk management or coastal storm damage reduction projects or for other activities that affect public safety, and will also be conducted for reviewing the relevancy and effectiveness of the Corps inspection of completed works and safety programs in promoting safety and competent performance. They are not required to be managed by OEO's and may be managed by the Corps MSC or by an outside organization. While all aspects of the project may be included in the review, it will focus on the public safety aspects.

SAR applies to new projects and to the major repair, rehabilitation, replacement, or modification of existing facilities. The requirement for Type II IEPR is based on Section 2035 of WRDA 2007, the OMB Peer Review Bulletin and other USACE policy considerations. 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 Review Management Office for Type II IEPR reviews is the USACE Risk Management Center (RMC). Panel members will be selected using the National Academies of Science (NAS) policy for selecting reviewers. Type II IEPR is not exempted by statute from the Federal Advisory Committee Act (FACA).

b. Decision on Type II IEPR. The decision to conduct Type II IEPR is based on guidance from the Engineering Circulation, EC 1165-2-209. If this project goes to design and construction, Type II IEPR will be required as the project may pose potential hazards and significant threat to human life.

c. Products for Review. 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. This review plan is a living document and will be updated to discuss Type II IEPR in more detail once design is in process.

6. MODEL CERTIFICATION AND APPROVAL

- a. General.** The use of certified or approved models for all planning activities is required by EC 1105-2-407. This policy is applicable to all planning models currently in use, models under development, and new models. The appropriate PCX will be responsible for model certification/approval. The goal of certification/approval is to establish that planning products are theoretically sound, compliant with USACE policy, computationally accurate, and based on reasonable assumptions. The use of a certified or approved model does not constitute technical review of the planning product. Independent review of the selection and application of the model and the input data and results is still required through conduct of DQC, ATR, and, if appropriate, IEPR. Independent review is applicable to all models, not just planning models. Both the planning models (including the certification/approval status of each model) and engineering models anticipated to be used in the development of the decision document are described below.
- b. Planning Model.** HEC-FDA 1.2.4 (Certified). The Hydrologic Engineering Center's Flood Damage Reduction Analysis (HEC-FDA) program provides the capability for integrated hydrologic engineering and economic analysis for formulating and evaluating flood risk management plans using risk-based analysis methods. The program will be used to evaluate and compare the future with and without-project plans along Lower Cache Creek to aid in the selection of a recommended plan to manage flood risk.

As the study progresses, other models may be added. The PDT will coordinate all certification with the FRM PCX.

- c. Engineering Models.** The following engineering models are anticipated to be used:
- (1) HEC-HMS 3.4. The Hydrologic Modeling System (HEC-HMS) is designed to simulate the precipitation-runoff processes of dendritic watershed systems. It is designed to be applicable in a wide range of geographic areas for solving the widest possible range of problems. This includes large river basin water supply, flood hydrology, and small urban or natural watershed runoff. Hydrographs produced by the program are used directly or in conjunction with other software for studies of water availability, urban drainage, flow forecasting, future urbanization impact, reservoir spillway design, flood damage reduction, floodplain regulation, and systems operation. This software program will be used to create inflow hydrographs for development of the with- and without-project conditions.
 - (2) HEC-RAS 4.0. The Hydrologic Engineering Center's River Analysis System (HEC-RAS) provides one-dimensional steady and unsteady flow river hydraulics calculations, sediment transport-mobile bed modeling, and water temperature analysis. The HEC-RAS software supersedes the HEC-2 river hydraulics package, which was a one-dimensional, steady flow water surface profiles program. This software program will create the water surface profile elevations for the with- and without-project conditions.
 - (3) FLO-2D. FLO-2D is a volume conservation flood routing model. The model will simulate river overbank flows, but it can also be used on unconventional flooding problems such as unconfined flows over complex alluvial fan topography and roughness, split channel flows, mud/debris flows, and urban flooding. This software program will be used to develop economic floodplains for the benefits analysis of the with- and without-project conditions.
 - (4) ArcMap 9.3/HEC-GeoRAS 4.1.1: ArcMap is the main component of ESRI's ArcGIS suite of geospatial processing programs, and it is used primarily to view, edit, create, and analyze geospatial data. ArcMap allows the user to explore data within a data set, symbolize features accordingly, and create maps. HEC-GeoRAS is a set of procedures, tools, and utilities for processing geospatial data in ArcGIS/ArcMap using a graphical user interface (GUI). The interface allows the preparation of geometric data for import into HEC-RAS and processes simulation results exported from HEC-RAS.

- (5) HEC-6: HEC-6 is a one-dimensional movable boundary open channel flow numerical model designed to simulate and predict changes in river profiles resulting from scour and/or deposition over moderate time periods (typically years, although applications to single flood events are possible). A continuous flow record is partitioned into a series of steady flows of variable discharges and durations. For each flow a water surface profile is calculated thereby providing energy slope, velocity, depth, etc. at each cross section. Potential sediment transport rates are then computed at each section. These rates, combined with the duration of the flow, permit a volumetric accounting of sediment within each reach. The amount of scour or deposition at each section is then computed and the cross section adjusted accordingly. The computations then proceed to the next flow in the sequence and the cycle is repeated beginning with the updated geometry. The sediment calculations are performed by grain size fraction thereby allowing the simulation of hydraulic sorting and armoring. Features of HEC-6 include: capability to analyze networks of streams, channel dredging, various levee and encroachment alternatives, and to use several methods for computation of sediment transport rates.
- (6) HEC-RAS 4.1 for sediment transport: This will incorporate the simulation of one-dimensional sediment transport/movable boundary calculations resulting from scour and deposition over moderate time periods (typically years, although applications to single flood events are possible). The sediment transport potential is computed by grain size fraction, thereby allowing the simulation of hydraulic sorting and armoring. Major features include the ability to model a full network of streams, channel dredging, various levee and encroachment alternatives, and the use of several different equations for the computation of sediment transport. The model is designed to simulate long-term trends of scour and deposition in a stream channel that might result from modifying the frequency and duration of the water discharge and stage, or modifying the channel geometry. This system can be used to evaluate deposition in reservoirs, design channel contractions required to maintain navigation depths, predict the influence of dredging on the rate of deposition, estimate maximum possible scour during large flood events, and evaluate sedimentation in fixed channels.

d. **Cost Estimating Model.** MII, an integrated cost estimating system (second generation of MCACES), will be used to prepare cost estimates.

7. REVIEW SCHEDULES AND COSTS

a. **DQC Schedule and Cost.** The DQC schedule is shown in Table 4.

Table 4. DQC Schedule

Task	Date
DQC team identified	TBD
Draft report, including NEPA/environmental compliance documentation and technical appendices	TBD
Draft report, including NEPA/environmental compliance documentation and technical appendices	TBD

The Sacramento District shall provide labor funding by cross charge labor codes. The Project Manager will work with the DQC team leader to ensure that adequate funding is available and is commensurate with the level of review needed. Any funding shortages will be negotiated on a case by case basis and in advance of a negative charge occurring.

The DQC team leader shall provide organization codes for each team member and a responsible financial point of contact (CEFMS responsible employee) for creation of labor codes. Reviewers shall monitor individual labor

code balances and alert the DQC team leader to any possible funding shortages. DQC review is estimated to be \$100,000 for the study.

- b. **ATR Schedule and Cost.** The ATR schedule is shown in Table 5. Additional detail will be added to this schedule when the time period for the first review draws closer. It is not anticipated that any review will be needed prior to 2012. All products for these milestones will be reviewed, including those produced as in-kind services by the non-Federal sponsors.

Table 5. ATR Schedule

Task	Date
Prepare ATR scope of work	TBD
Award contract	TBD
ATR team identified	TBD
Initiate review	TBD
ATR review of in-kind technical work	TBD
ATR review of without-project hydrology	TBD
ATR Feasibility Scoping Meeting documentation	TBD
ATR Alternatives Review Conference documentation	TBD
ATR Alternatives Formulation Briefing documentation	TBD
ATR Review of draft report, including NEPA/environmental compliance documentation and technical appendices	TBD
ATR Review of final report, including NEPA/environmental compliance documentation and technical appendices	TBD
Respond to ATR comments	TBD

The Sacramento District shall provide labor funding by cross charge labor codes. Funding for travel, if needed, will be provided through government order. The Project Manager will work with the ATR team leader to ensure that adequate funding is available and is commensurate with the level of review needed. Any funding shortages will be negotiated on a case by case basis and in advance of a negative charge occurring.

The ATR team leader shall provide organization codes for each team member and a responsible financial point of contact (CEFMS responsible employee) for creation of labor codes. Reviewers shall monitor individual labor code balances and alert the ATR team leader to any possible funding shortages. ATR review is estimated to be \$150,000 for the study.

- c. **Type I IEPR Schedule and Cost.** The schedule for Type I IEPR will be determined as the time period for review draws closer. The IEPR panel will be engaged early in the study to reduce the chances of significant changes to the study occurring at the end due to IEPR findings. Interim products for hydrology, hydraulic, geotechnical design, and economics will be provided to the panel before the draft report is release for public review. The full Type I IEPR panel will receive the entire draft feasibility report, environmental impact statement, and all technical appendices concurrent with public and agency review. The final report to be submitted by the Type I IEPR panel must be submitted to the PDT within 60 days of conclusion of public review. The schedule is shown in Table 6.

The Type I IEPR is estimated to be \$250,000 for this study.

Table 6. Type I IEPR Schedule

Task	Date
Prepare scope of work	TBD
Award contract	TBD
IEPR team identified	TBD
Initiate review	TBD
IEPR briefing meeting	TBD
Draft final report, including NEPA/environmental compliance documentation and technical appendices	TBD
Respond to comments	TBD

- d. **Type II IEPR Schedule and Cost.** The schedule and cost for Type II IEPR will be determined as the time period for review draws closer.
- e. **Value Engineering.** The Value Engineering schedule will be determine as the study progresses. The cost is estimated to be \$75,000 for the study.
- f. **Model Certification/Approval Schedule and Cost.** No model certification is anticipated. If other planning models are added during the study, the PDT will coordinate model certification/approval with the FRM PCX.

8. PUBLIC PARTICIPATION

Public involvement is anticipated throughout the Feasibility Study. The non-Federal sponsors will take the lead in formulating and conducting the outreach and public involvement for the study while coordinating all efforts with the Corps. This primarily consists of coordinating the study scope, results, and solutions with the public; conducting public meetings and workshops; and responding to public inquiries. Table 7 shows anticipated public comment actions and dates. The schedule will be updated when the time period for public review draws closer.

Table 7. Anticipated Public Comment Actions and Dates

Public Comment Action	Anticipated Date
Public comments or questions	Ongoing
Disseminate notice of intent	February 2011
Small group public meetings held by non-Federal sponsors	Periodically, leading up to public scoping workshop
Public scoping workshop	March 2011
Draft report available for public review	TBD
Public meeting to present results	TBD

Release of the draft report for public review will occur after issuance of the AFB policy guidance memo and concurrence by HQUSACE. The District will make the draft decision document available to the public for comment at the same time it is submitted for review (or during the review process) and sponsor a public meeting where oral presentations can be made to the reviewers by interested members of the public. ATR and Type I IEPR reviewers will be provided with all public comments. Upon completion of the review periods, comments will be consolidated in a matrix and addressed, if needed. A summary of the comments and resolutions will be included in the document.

9. PCX COORDINATION

Review plans for decision documents and supporting analyses outlined in EC 1165-2-209 are coordinated with the appropriate PCXs based on the primary purpose of the basic decision document to be reviewed. The lead PCX for this study is the FRM PCX located at SPD. The FRM PCX will coordinate with the National Ecosystem Restoration Planning Center of expertise and Cost Engineering Directory of Expertise, as appropriate. This Review Plan will be

coordinated with the FRM-PCX and submitted by the SPK Planning Chief, 916-557-6767 to the MSC Commander for approval. The PCX will be asked to manage the ATR and Type I IEPR review. The PCX is requested to nominate the ATR team. The approved Review Plan will be posted to the PCX and SPK websites. Any public comments on the Review Plan will be collected by SPK for resolution and incorporation as needed. Any public comments directed to either the PCX or to HQUSACE will be forwarded to SPK.

10. MSC APPROVAL

The MSC that oversees the home district is responsible for approving the Review Plan. Approval is provided by the MSC Commander. The commander's approval should reflect vertical team input (involving district, MSC, PCX, and HQUSACE members) as to the appropriate scope and level of review for the decision document. Like the PMP, the Review Plan is a living document and may change as the study progresses. Changes to the Review Plan should be approved by following the process used for initially approving the plan. In all cases the MSCs will review the decision on the level of review and any changes made in updates to the project.

11. REVIEW PLAN POINTS OF CONTACT

Questions and/or comments on this Review Plan can be directed to the following points of contact:

- SPK contact, Alicia E Kirchner, Planning Chief, 916-557-6767, Alicia.E.Kirchner@usace.army.mil
- MSC contact, Karen Berresford, 415-503-6557, Karen.G.Berresfort@usace.army.mil
- PCX contact, Caleb Conn, 415-503-6852, Caleb.B.Conn@usace.army.mil

ATTACHMENT 1: TEAM ROSTERS

Table 8 - Table 14 include rosters and contact information for the current PDT, DCQ team, vertical team, ATR team, Type I IEPR panel members, Type II IEPR panel members, and PCX points of contact.

Table 8. Project Delivery Team

Name	Discipline	Phone
Austin, Charles	Project Manager	916-557-7550
Boedtker, Mark	Engr. Coordinator/Civil Design	916-557-6637
Carsell, Kim	Project Planner	916-557-7635
Dembosz, Lindsay	Environmental Coordinator	916-557-5276
Gensler, Fraser	Planning and Policy Support	916-557-6849
Gilfillan, Mark	Tribal Liaison	970-250-7949
Griffin, Joe	Cultural Resources Coordinator	916-557-7897
Hart, Fred	Geology Coordinator	916-557-6975
Hollis, Jeremy	Real Estate Coordinator	916-557-6880
Iwasa, Robert	Geotechnical Coordinator	916-557-7179
Perry, Richard	Cultural Resources Support	916-557-5218
Schlein, Aaron	Economics Coordinator	916-557-5372
Siddiqui, Saba	Hydraulics Coordinator	916-557-6945
Torbik, Rick	Chief Civil Design Section B	916-557-6698
Fong, Sherman	Cost Engineer	916-557-6983
Scarborough, Robert	California Department of Water Resources	916-574-1492
Wright, Michael	California Department of Water Resources	916-574-1043
Borcalli, Fran	Yolo County Flood Control and Water Conservation District	916-326-5224
Cocke, Mark	City of Woodland	530-661-5985

Table 9. District Quality Control Team

Name	Discipline	Phone
TBD	Lead DQC	
TBD	Planning	
TBD	Seismic	
TBD	Structural	
TBD	Hydraulic	
TBD	Hydrology	
TBD	Construction	
TBD	Cost	
TBD	NEPA/EIS	
TBD	Economics	

Table 10. Vertical Team

Name	Discipline	Phone
Berresford, Karen	DST lead	415-503-6557
Frentzen , Clark	Planning	415-503-6590
Gillespie, Mary	Real Estate	415-503-6553
Kuz, Annette	Office of Counsel	415-503-6633
McAllister, Victoria	Public Affairs Office	415-503-6514
Sing, Edward	Quality Management	415-503-6533
Bartha, James	Contracting	415-503-6548

Table 11. Agency Technical Review Team

Name	Discipline	Phone
TBD	Planning	
TBD	Hydrology	
TBD	Hydraulics	
TBD	Real Estate/Lands	
TBD	Environmental Resources	
TBD	Economics	
TBD	Geotechnical Engineering	
TBD	Cost engineering	
TBD	Geology	
TBD	Civil Design	
TBD	HTRW	

Table 12. Type I Independent External Peer Review Panel

Name	Discipline	Phone
TBD	Hydrology and Hydraulics	
TBD	Economics	
TBD	Environmental Resources	
TBD	Cost Engineering	
TBD	Civil Design	
TBD	Geotechnical Engineering	
TBD	HTRW	

Table 13. Type II Independent External Peer Review Panel

Name	Discipline	Phone
TBD		
TBD		
TBD		
TBD		

Table 14. Planning Center of Expertise Points of Contact

Name	Discipline	Phone
Thaut, Eric	Program Manager, PCX Flood Risk Management	415-503-6852
Staebell, Jodie	Operational Director, PCX Ecosystem Restoration	309-794-5448
Jacobs, Michael	Cost Engineering Directory of Expertise	509-527-7516

ATTACHMENT 2: ATR CERTIFICATION TEMPLATE

STATEMENT OF AGENCY TECHNICAL REVIEW

COMPLETION OF QUALITY ASSURANCE REVIEW AND AGENCY TECHNICAL REVIEW

The Sacramento District has completed the feasibility report, environmental impact statement/environmental impact report, and appendices of the Lower Cache Creek, Yolo County, City of Woodland and Vicinity, California Feasibility Study. Notice is hereby given that (1) a Quality Assurance review has been conducted as defined in the Quality Assurance Plan and (2) an agency technical review that is appropriate to the level of risk and complexity inherent in the project, has been conducted as defined in the project's Quality Management Plan. During the agency technical review, compliance with established policy principles and procedures, utilizing justified and valid assumptions, was verified. that an agency technical review compliance with established policy principles and procedures, utilizing justified and valid assumptions, was verified. This included review of: assumptions; methods, procedures, and material used in analyses; alternatives evaluated; the appropriateness of data used and level obtained; and reasonableness of the result, including whether the product meets the customer's needs consistent with law and existing Corps' policy. The ATR was accomplished by an agency team composed of staff from multiple districts. All comments resulting from ATR have been resolved.

Agency Technical Review Team Leader

Date

Chief, Planning Division

Date

CERTIFICATION OF AGENCY TECHNICAL REVIEW

Significant concerns and the explanation of the resolution are as follows:

(Describe the major technical concerns, possible impact, and resolution)

As noted above, all concerns resulting from agency technical review of the project have been fully resolved.

Chief, Planning Division

Date

Chief, Planning Division

Date

ATTACHMENT 3: REVIEW PLAN ACRONYMS AND ABBREVIATIONS

<u>Term</u>	<u>Definition</u>	<u>Term</u>	<u>Definition</u>
AFB	Alternative Formulation Briefing	LRR	Limited Reevaluation Report
ASA(CW)	Assistant Secretary of the Army for Civil Works	MSC	Major Subordinate Command
ATR	Agency Technical Review	NED	National Economic Development
BOD	Basis of Design	NER	National Ecosystem Restoration
CSDR	Coastal Storm Damage Reduction	NEPA	National Environmental Policy Act
CVFPB	State of California Central Valley Flood Protection Board	O&M	Operation and Maintenance
CWRB	Civil Works Review Board	OMB	Office of Management and Budget
DPR	Detailed Project Report	OMRR&R	Operation, Maintenance, Repair, Replacement and Rehabilitation
DQC	District Quality Control	OEO	Outside Eligible Organization
DWR	California Department of Water Resources	OSE	Other Social Effects
DX	Directory of Expertise	PCX	Planning Center of Expertise
EA	Environmental Assessment	PDT	Project Delivery Team
EC	Engineer Circular	PAC	Post Authorization Change
EIS	Environmental Impact Statement	PMP	Project Management Plan
EO	Executive Order	PL	Public Law
ER	Ecosystem Restoration	QMP	Quality Management Plan
FDR	Flood Damage Reduction	QA	Quality Assurance
FEMA	Federal Emergency Management Agency	QC	Quality Control
FRM	Flood Risk Management	RED	Regional Economic Development
FSM	Feasibility Scoping Meeting	RMC	Risk Management Center
GRR	General Reevaluation Report	RTS	Regional Technical Specialist
HTRW	Hazardous, toxic, and radiological waste	SAR	Safety Assurance Review
HQUSACE	Headquarters, U.S. Army Corps of Engineers	SET	Science and Engineering Technology
IEPR	Independent External Peer Review	USACE	U.S. Army Corps of Engineers
IRRM	Interim Risk Reduction Measures	WRDA	Water Resources Development Act