



REPLY TO
ATTENTION OF

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

5 Apr 2013

CESPD-PDC

MEMORANDUM FOR Commander, Sacramento District US Army Corps of Engineers,
ATTN: Mr. Miki Fujitsubo (CESPK-PD-P)

Subject: Review Plan Approval for Sutter Basin Pilot Feasibility Study, Sutter Basin,
California Feasibility Report/EIS/EIR

1. The enclosed updated Review Plan for the Sutter Basin Pilot Feasibility Study, dated March 2013, has been prepared in accordance with EC 1165-2-214. The Review Plan has been coordinated internally within the District Support Team and with the Flood Risk Management Planning Center of Expertise (PCX). PCX will serve as the Review Management Office.
2. With MSC approval the Review Plan will be made available for public comment via the internet and the comments received will be incorporated into future revisions of the Review Plans. The Review Plan does include 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. For any additional information or assistance, contact Karen Berresford, District Support Team Lead, (415) 503-6557, Karen.G.Berresford@usace.army.mil.

Building Strong From New Mexico All The Way To The Pacific!

Encl
Review Plan


MICHAEL C. WEHR
BG, EN
Commanding 

REVIEW PLAN

**Sutter Basin Pilot Feasibility Study,
Sutter Basin, California
Feasibility Report/EIS/EIR**

Sacramento District

MSC Approval Date: Approved April 2009

Revision Dates: April 2010, September 2011, June 2012, October 2012,
March 2013



**US Army Corps
of Engineers ®**

REVIEW PLAN

**Sutter Basin Pilot Feasibility Study
Sutter Basin, California
Feasibility Report/EIS/EIR**

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1. PURPOSE AND REQUIREMENTS

a. **Purpose.** This Review Plan defines the scope and level of peer review for the Sutter Basin Pilot Feasibility Study, Feasibility Report/Environmental Impact Statement/Environmental Impact Report (EIS/EIR). The Pilot Program is the vanguard element in USACE's SMART (Specific, Measurable, Attainable, Risk Informed, Timely) Planning initiative in streamlining and restructuring the planning process and associated procedures. As part of that restructuring, review processes need to be adapted and coordinated to reflect the Pilot Program needs and requirements.

b. References

- (1) Engineering Circular (EC) 1165-2-214, Civil Works Review Policy, 15 Dec 2012
- (2) EC 1105-2-412, Assuring Quality of Planning Models, 31 Mar 2011
- (3) Engineering Regulation (ER) 1110-1-12, Quality Management, 30 Sep 2006
- (4) ER 1105-2-100, Planning Guidance Notebook, Appendix H, Policy Compliance Review and Approval of Decision Documents, Amendment #1, 20 Nov 2007
- (5) Sutter Basin, California Feasibility Study Project Management Plan, April 2008
- (6) CESP Regulation 1110-1-8, Quality Management Plan (QMP), 30 December 2002

c. **Requirements.** This review plan was developed in accordance with EC 1165-2-214 and within the evolving Pilot Program direction and requirements, which establishes an accountable, comprehensive, life-cycle review strategy for Civil Works products by providing a seamless process for review of all Civil Works projects from initial planning through design, construction, and operation, maintenance, repair, replacement and rehabilitation (OMRR&R). The EC outlines four general levels of review: District Quality Control/Quality Assurance (DQC), Agency Technical Review (ATR), Independent External Peer Review (IEPR), and Policy and Legal Compliance Review. In addition to these levels of review, decision documents are subject to cost engineering review and certification (per EC 1165-2-214) and planning model certification/approval (per EC 1105-2-412).

d. **Study Milestones.** This review plan addresses the review strategy and products up to Decision Point #3. Updates will be incorporated as needed and another revised review plan will be coordinated after DP #3 in summer 2013.

2. REVIEW MANAGEMENT ORGANIZATION (RMO) COORDINATION

The RMO is responsible for managing the overall peer review effort described in this Review Plan. The RMO for decision documents is typically either a Planning Center of Expertise (PCX) or the Risk Management Center (RMC), depending on the primary purpose of the decision document. The RMO for the peer review effort described in this Review Plan is the Flood Risk Management (FRM) PCX located at SPD.

The RMO will coordinate with the Cost Engineering Directory of Expertise (DX) to ensure the appropriate expertise is included on the review teams to assess the adequacy of cost estimates, construction schedules and contingencies. The FRM-PCX will also coordinate with the National Ecosystem Restoration Planning Center of Expertise (ECO-PXC) and the RMC to ensure that review teams with

appropriate expertise are assembled. External review panel members will be selected using the National Academies of Science (NAS) policy for selecting reviewers.

3. STUDY INFORMATION

- a. **Decision Document.** On 18 February 2011, the Sutter Basin Feasibility Study, Sutter Basin, California, was designated as one of the first pilot studies underneath the USACE Pilot Program. The pilot initiative for the Sutter Basin Feasibility Study will provide an opportunity to test principles that have been outlined in the *USACE Recommendations for Transforming the Current Pre-Authorization Study Process* (January 2011) and associated presentation materials. This new process is not business as usual and will require heavy involvement as well as input and decisions from the Vertical Team at multiple points throughout the study. Instead of following the traditional USACE planning milestones, the pilot study will be divided into four phases each with a key decision point and associated In-Progress Reviews (IPR);
- Decision Point 1 – Determination of continued Federal interest and Vertical Team concurrence on risk and study methodology.
 - Decision Point 2 – Tentatively Selected Plan agreement and vertical team approval to release Draft Report for Policy, Independent External Peer Review (IEPR), and Public Review.
 - Decision Point 3 – Final Project Development Team and Vertical Team check on document and decisions made after IEPR, Public Comment, and final Agency Technical Review. Approval to release the final report for State and Agency Review.
 - Decision Point 4 – Sign Chief’s Report.

The purpose of the study is to identify FRM issues. The decision document, a General Investigation Feasibility Report/Environmental Impact Statement (EIS)/Environmental Impact Report (EIR), will be reviewed by Headquarters, U.S. Army Corps of Engineers (HQUSACE) for approval and 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 project is a General Investigations study undertaken to evaluate structural and non-structural FRM measures including improvements to existing levees, construction of new levees, and other storage, conveyance and non-structural options. The feasibility phase of this project is cost shared 50 percent Federal, 50 percent non-Federal with the project sponsors, the State of California Central Valley Flood Protection Board (CVFPB) and the Sutter Butte Flood Control Agency (SBFCA).

- b. **Study/Project Description.** The planning area is roughly bounded by the Feather River, Sutter Bypass, Wadsworth Canal, Sutter Buttes, and Cherokee Canal (see Figure 1). The study area covers approximately 285 square miles and is roughly 43 miles long and 9 miles wide. The study area includes the communities of Yuba City, Live Oak, Gridley, and Biggs, with a total population of approximately 80,000. Flood waters potentially threatening the study area originate from the Feather River watershed or the upper Sacramento River watershed, above Colusa Weir.

The study will focus on FRM alternatives within the study area. The non-Federal sponsors, the CVFPB and SBFCA, are primarily interested in reducing flood risk to Yuba City and other

communities in the study area, as well as protecting public infrastructure.

The study area is essentially encircled by project levees of the Federal Sacramento River Flood Control Project and high ground of the Sutter Buttes. Geotechnical analysis and historical performance during past floods indicate the project levees are at risk of failure due to through-seepage and under-seepage. A historic levee failure in 1955 caused damage and loss of life. There have been three levee breaches adjacent to the study area since 1986 and more are expected. High water in 1997 required extensive flood fighting and forced a mass evacuation, including the entire city of Yuba City. The risk of unexpected levee failure coupled with the consequence of flooding up to 20 feet deep in the southern end of the Sutter Basin presents a threat to public safety, property, and critical infrastructure such as major highways, hospitals, and a power plant.

Factors Affecting the Scope and Level of Review. Quality control will be reviewed through DQC, ATR, and IEPR. Questions that must be considered in determining the scope and level of review are identified in column 1 of the following table. The Project Delivery Team’s (PDT) assessment of these questions in relation to this study is listed in column 2 of the table. Also, developed by the PDT as part of the Pilot Program process, was a risk register which documents discipline specific risk areas that can assist in assessing review focus areas.

Questions to Determine Scope	Sutter Basin Pilot Study
Will parts of the study be challenging?	Many aspects of the Sutter Basin Pilot Study will be challenging for the PDT and reviewers on two levels of a new pilot planning process and a complex study area in terms of geotechnical and hydraulics. The study is one of the first two Pilot Studies; therefore, the PDT and reviewers will be involved in a new evolving process which will require flexibility and adaptability. Reviewers will need to understand the intent and goals of the Pilot Program and accept different levels of detail, higher levels of uncertainty, and modified review times
What are the likely study risks and the magnitude of the risks?	The PDT completed a Study Risk Analysis Workshop in October of 2011 to identify study risks and the magnitude of the risks. Please refer to the attached risk register which is updated after each IPR.
Will the study have significant economic, environmental, and/or social effects to the Nation?	Depending upon the final array of alternatives and the TSP, the study may have significant economic, environmental, and/or social effects for the Nation, State of California, and Sutter Basin region. An integrated EIS/EIR will be required for this study.

Questions to Determine Scope	Sutter Basin Pilot Study
Will the study have significant threat to human life/safety assurance?	The study includes urbanized areas and roadways subject to flooding and thus presents a threat to human life/safety. Geotechnical analysis and historical performance during past floods indicate the project levees are at risk of failure due to through-seepage and under-seepage. A historic levee failure in 1955 caused damage and loss of life. There have been three levee breaches adjacent to the study area since 1986 and more are expected. High water in 1997 required extensive flood fighting and forced a mass evacuation, including the entire city of Yuba City. The risk of unexpected levee failure coupled with the consequence of flooding up to 25 feet deep in the southern end of the Basin presents a threat to public safety, property, and critical infrastructure such as major highways, hospitals, and a power plant.
Will the study have significant interagency interest?	The study has local, state, and Federal interest. Because of the funding and time constraints of the reconnaissance phase, only limited and informal coordination has been conducted with other resource agencies.
Will the study be highly controversial?	The project has potential for public controversy. Landowners in the area are concerned about the conversion of agricultural land for use as flood risk reduction.
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 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?	The study is one of the first Pilot Studies; therefore, the PDT and reviewers will be involved in a new process which will require a change from business as usual. This will be especially challenging for reviewers as they will have to manage and balance an adequate level of detail and uncertainty throughout the pre-authorization planning process, eliminating unnecessary data collection and analyses while maintaining quality of analysis and outcome. A Metrics Evaluation and Multi-Objective Analysis methodology and document has been created for use for the study that was determined to require model approval.
Will the proposed project design require redundancy, resiliency, and/or robustness?	It is anticipated that one or more of the project alternatives will require redundancy, resiliency, and/or robustness.
Will the proposed project have unique construction sequencing or a reduced or overlapping design construction schedule?	It is not expected that the project will have unique construction sequencing or a reduced or overlapping design construction schedule.

- c. Level of Review.** Determining and keeping to the level of review is extremely important within the Pilot Program milestones and products that are different from the past standard Feasibility Study milestones and documents. Continuous coordination and communication is required with the ATR Lead and the PDT members to ensure the level and focus of the reviews are appropriate to the Pilot Program milestones.
- d. In-Kind Contributions.** Products and analyses provided by non-Federal sponsors as in-kind services are subject to DQC, ATR, and IEPR. The in-kind products and analyses to be provided by the non-Federal sponsor include: project management; public involvement, coordination, and outreach; environmental impact and planning studies; hydraulic analysis and report; engineering design analysis; Geotechnical studies & report; economic data collection; real estate activities; and participating in reviews.
- e. Pilot Program Milestones:** The normal and familiar feasibility study milestones are superseded by the pilot program milestones and products. The pilot program is an evolving program so refinements and changes are still occurring as the study moves forward. ATR schedules and expectations will need to be adjusted to align with these changes..

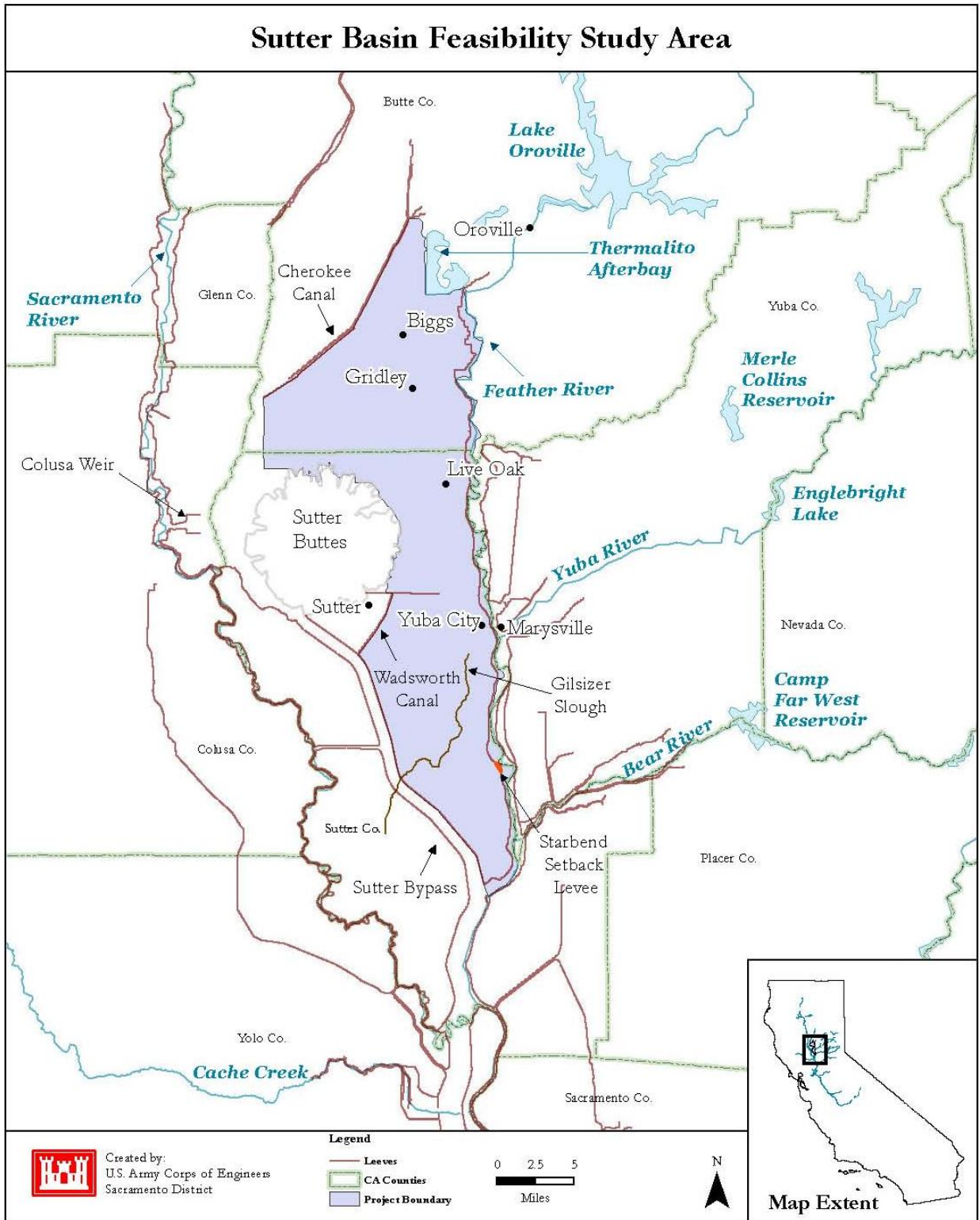


Figure 1. Sutter Basin Feasibility Area Vicinity and Location

4. DISTRICT QUALITY CONTROL (DQC)

All decision documents (including supporting data, analyses, environmental compliance documents, etc.) shall undergo DQC. DQC is an internal review process of basic science and engineering work products focused on fulfilling the project quality requirements defined in the Project Management Plan (PMP). The home district shall manage DQC and the branch and section chiefs shall be responsible for accuracy of the products through design checks, supervisory review, and other internal procedures. Documentation of DQC activities is required and should be in accordance with the Quality Manual of the District and the home Major Subordinate Command (MSC).

- a. **Documentation of DQC.** A comment-response / email document in Microsoft Word will be used to document all DQC comments, responses and associated resolutions accomplished throughout the review process. This documentation will be supplied to the ATR Team upon initiation of ATR.
- b. **Required DQC Expertise.** The DQC Team is 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 team consists of approximately 6 reviewers and is anticipated to cost approximately \$70,000 over the course of the study.
- c. **Products Developed by Contractors.** The development and execution of a quality control plan for products developed by a contractor shall be the responsibility of the contractor. The contractor's quality control plan shall be reviewed and approved by the responsible function chief at the district. In order to maintain contractor responsibility, the contractor shall be responsible for quality control of its own work. An overall quality control plan shall be developed by the district that outlines quality control activities by the district for any portion of a product developed by in-house forces and quality assurance activities by the District for overseeing the contractor's quality control activities. These quality assurance activities shall include actions to define the work for the contractor and ensure that the contractor meets the requirements of the contract, and they shall also include an independent quality assurance review. The responsible function chief at the district shall approve the overall quality control plan for the total product.
- d. **PDT Consistency Review.** Select PDT members will hold a page turner session once the Draft Report is complete to ensure overall coherence and integrity of the report, technical appendices and recommendations. This page turner session will take 2-3 days and is expected to take place late January, 2013.

5. AGENCY TECHNICAL REVIEW (ATR)

ATR is mandatory for all decision documents (including supporting data, analyses, environmental compliance documents, etc.). The objective of ATR is to ensure consistency 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

results in a reasonably clear manner for the public and decision makers. ATR is managed within USACE by the designated RMO and is conducted by a qualified team from outside the home district that is not involved in the day-to-day production of the project/product. ATR teams will be comprised of senior USACE personnel and may be supplemented by outside experts as appropriate. The ATR team lead will be from outside the home MSC.

a. **Products to Undergo ATR.** The products to undergo ATR prior to Decision Point #3 will include:

- **Progress Document #1: Without Project & Alternative Development**

This progress document details the Sutter pilot planning background and process that determined the direction of the study and an array of five alternatives (ending time frame is Nov 2011). Included in the documentation are the VE/Planning Charette, briefing slides, and public scoping comments.

- **Progress Document #2: Refined Array of Alternatives to a Preliminary TSP**

This is a follow-on progress document to the “Without Project & Alternative Development” document that reports on the process, changes, and results of refining the array of five alternatives to a draft Tentatively Selected Plan (TSP). Included in the documentation will be technical data and write-up summaries and documentation of respective discipline methodology. Attachments will be:

- A: Geotechnical
- B: Hydrology
- C: Hydraulics
- D: Civil Engineering
- E: Cost Engineering
- F: Environmental
- G: Real Estate
- H: Economics

- **Progress Document #3 -Metrics Evaluation and Multi-Objective Analysis Document Approval**

PD #3 is the use of a pilot multi-criteria approach to assist in alternative selection, including moving away from the rote acceptance of NED or NER as the sole criterion for plan selection. The Sutter pilot study team developed a multi-objective approach to plan evaluation and selection that would consider all of the planning objectives identified for the study, rather than only the NED and NER objectives. The final array of alternatives will be evaluated and compared through a comprehensive trade-off analysis, which might involve unequal weighting of criteria. The alternative with the greatest net benefits would be identified; but may not be chosen as the TSP based on the results of the trade-off analysis.

The Metrics Evaluation and Multi-Objective Analysis Document will be reviewed by an appropriate ATR member for accuracy and applicability to the study and will be approved for use by the reviewer and the FRM-PCX.

- **Backcheck of the Without Project Geotechnical Report (ATR #1)**

- **Without Project Hydrology Report (ATR #4)**

- **Documentation from IPR #3:** This documentation will be provided to update the ATR team on current issues and comments identified as the array of alternatives are further refined.
- **Decision Point #2 documentation as determined in IPR #4.**
- **Draft and Draft Final Feasibility Report/EIS/EIR:** The report and technical appendices will be reviewed by the ATR team for certification and approval concurrently with public and IEPR review.
- Additional Documentation may be submitted for FYI or review, and will vary and may include technical memos, a draft presentation for the upcoming In-Progress Review, and other relevant documentation developed since the previous ATR.

b. Required ATR Team Expertise. The ATR Team is 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 roughly mirror the composition of the PDT, and wherever possible, the lead shall reside outside of the South Pacific Division region. Although the team consists of 10 members, it is not anticipated that all team members will be involved in every review. The lead PCX for FRM is responsible for identifying the ATR Team members. The names, organizations, contact information, credentials, and years of experience of the ATR members are included in Attachment 1.

ATR Team Members/Disciplines	Expertise Required
ATR Lead	The ATR lead should be a senior professional with extensive experience in preparing Civil Works decision documents and conducting ATR. The lead should also have the necessary skills and experience to lead a virtual team through the ATR process. The ATR lead may also serve as a reviewer for a specific discipline (such as planning, economics, environmental resources, etc).
ATR Water Resources Planner	Team member will be experienced with current Flood Risk Management planning and policy guidance, integrating measures for Flood Risk Management and secondarily for Ecosystem Restoration, recreation. Familiarity with the Pilot Program or the new 3x3x3 processes is preferred.
ATR Geotechnical Reviewer	Team member will be experienced in levee & floodwall design, post-construction evaluation, risk and uncertainty procedures for levee analysis per ETL 1110-2-556, under seepage remediation (e.g. seepage berms and cutoff wall design, etc), and rehabilitation. A registered professional engineer is recommended. Team member will be familiar with GMS –SEEP2D and UTEXAS4 models for seepage and slope stability analysis.
ATR NEPA Biology/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.
ATR Hydraulics/Hydrology	Team member will be an expert in the field of urban hydrology &

	<p>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, water control management, 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 will be used for this project (HEC-HMS, HEC-RAS, HEC –ResSim, HEC -5, HEC -1, FLO -2D, UNET, and TABS). A certified flood plain manager and licensed professional engineer is recommended but not required. Team member will be familiar with the requirements and procedures in Engineering Circular (EC) 1110-2-60701, accompanying Engineering Regulation (ER) 1110-2-8160, and Engineering Manual (EM) 1110-2-60506 in order to ensure all data conforms to vertical datum standards and all hydrologic models are geo-referenced to the proper datum(s).</p>
ATR Economics	<p>Team member will be experienced in civil works and related flood risk reduction projects, and have a thorough understanding of HEC-FDA 1.2.5, IWR – Planning Suite, and will review and familiarize themselves with the Sutter Metrics Evaluation and Multi-Objective Analysis.</p>
ATR Risk Analysis	<p>The risk analysis reviewer will be experienced with performing and presenting risk analyses in accordance with ER 1105-2-101 and other related guidance, including familiarity with how information from the various disciplines involved in the analysis interact and affect the results.</p>
ATR Cost Engineering	<p>Team member will be familiar with cost estimating for similar civil works with preference with experience with Pilot Program studies. 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. Team member will be familiar with MCACES and MII cost estimating models.</p>
ATR Civil/Structural Design	<p>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 licensed professional engineer is suggested.</p>
ATR Real Estate	<p>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.</p>

c. **Documentation of ATR.** DrChecks review software will be used to document all formal 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 quality 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; and
- (4) The probable specific action needed to resolve the concern – identify the action(s) that the reporting officers must take to resolve the concern.

In some situations, especially addressing incomplete or unclear information, comments may seek clarification in order to then assess whether further specific concerns may exist.

The ATR documentation in DrChecks will include a comment spreadsheet of non-critical ATR comments entered into a single comment and critical comments entered individually into DrChecks. Both forms of comments will include the text of each ATR concern, the PDT response, a brief summary of the pertinent points in any discussion, including any vertical team coordination (the vertical team includes the district, RMO, MSC, and HQUSACE), and the agreed upon resolution. If an ATR concern cannot be satisfactorily resolved between the ATR team and the PDT, it will be elevated to the vertical team for further resolution in accordance with the policy issue resolution process described in either ER 1110-1-12 or ER 1105-2-100, Appendix H, as appropriate. Unresolved concerns can be closed in DrChecks with a notation that the concern has been elevated to the vertical team for resolution.

At the conclusion of each formal ATR effort, the ATR team will prepare a Review Report summarizing the review. Review Reports will be considered an integral part of the ATR documentation and shall:

- Identify the document(s) reviewed and the purpose of the review;
- Disclose the names of the reviewers, their organizational affiliations, and include a short paragraph on both the credentials and relevant experiences of each reviewer;
- Include the charge to the reviewers;
- Describe the nature of their review and their findings and conclusions;
- Identify and summarize each unresolved issue (if any); and
- 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.

ATR may be certified when all ATR concerns are either resolved or referred to the vertical team for resolution and the ATR documentation is complete. The ATR Lead will prepare a Statement of Technical Review certifying that the issues raised by the ATR team have been resolved (or

elevated to the vertical team). A Statement of Technical Review should be completed, based on work reviewed to date, for the AFB, draft report, and final report. A sample Statement of Technical Review is included in Attachment 2.

At the conclusion of each informal ATR effort, the PDT will prepare a Memorandum for Record (MFR) summarizing the review. The MFR shall:

- Identify the document(s) reviewed;
- Disclose the names of the reviewers and their organizational affiliations;
- Include the charge to the reviewers;
- Describe issues and resolutions, and;
- Identify and summarize each unresolved issue (if any).

No ATR certification will be required for informal ATRs.

d. ATR Strategy

(1) The ATR's will be numbered chronologically based on their individual start dates.

- ATR #1 is the ATR previously started in August 2010 of the detailed Geotechnical Report.
- ATR #2 is the ATR done in August 2011 for the DP#1 (MFR by SPK)?
- ATR #3 will be the document packages reviewed for Progress Documents #1, #2, and #3 including informational review of IPR#3 and IPR#4.
- ATR #4 will be the next interim ATR started (start means that the review documents and funding have been provided to the appropriate reviewer(s) and a review schedule has been set and agreed to by the PDT and ATRT).
- ATR #5 will be the following interim ATR, etc.

(2) Milestone Meetings (In-Progress-Reviews & Decision Points)

NOTE: For ATRs of major documents, such as the Draft and Final Reports, the ATR process for Milestone Meetings will be followed to ensure collaboration between all ATRT and PDT members.

For major milestone meetings and the draft and final reports, the ATR will be conducted as follows:

- PDT and ATR Lead will develop "Instructions for ATR", which briefly summarizes the overall ATR process and provides specific information covering the current ATR effort (associated with a given milestone or the draft or final report). The Instructions will be provided to both the ATR team and PDT to ensure a common understanding of how the ATR effort will be conducted and the schedule for the review.
- Upon receipt of the materials to be reviewed, the ATR team will conduct an initial review and document initial comments and/or clarifying questions in a spreadsheet provided by the

ATR lead, who will collect and consolidate as needed. ATR team members should flag critical comments they feel could substantively affect the conclusions and/or recommendations associated with the given milestone. The risk register prepared for the study will be used to help determine critical comments.

- As part of their initial review, ATR team members will be encouraged to speak directly with their PDT counterparts to clarify any questions and modify or eliminate comments from the spreadsheet deemed to be insignificant.
- ATR Lead will submit the initial comment spreadsheet to the PDT prior to a mid-review teleconference between the PDT and ATR Team, to be held no less than 1 week prior to the associated milestone meeting.
- During the teleconference, the PDT and ATRT will collectively discuss the consolidated initial ATR comments and clarifying questions, determine which comments are significant enough to warrant PDT response (insignificant comments will be retracted by the ATR team), and determine how the PDT will address those significant comments.
- For non-critical comments, the proposed resolution will be briefly documented in the comment spreadsheet, which will then be attached to a single comment in Dr. Checks by the ATR lead indicating all non-critical comments have been resolved.
- For critical comments, the ATR team members will enter those comments into Dr. Checks following the 4-part comment structure. The PDT will then provide full responses in Dr. Checks for the critical comments.
- PDT modifies review documentation as appropriate.
- ATR team members will complete a backcheck of critical comments in Dr. Checks.
- ATR lead prepares a draft ATR Review Report summarizing the findings of the review and resolution of comments. Any unresolved critical comments will be clearly identified in the Review Report for resolution by the Vertical Team.
- Milestone Meeting is conducted.
- PDT creates an MFR of the Milestone Meeting, modified as appropriate based on comments from the vertical team.
- ATR critical comments and responses in Dr. Checks modified as appropriate by the PDT and /or ATR team based on the outcome of the Milestone Meeting.
- ATR team completes final backcheck and ATR Lead finalizes the ATR report and ATR certification.
- PDT modifies review documentation as appropriate.

(3) **Reviews of technical documents will be conducted seamlessly:**

For seamless review of technical documents or ongoing analyses, the ATR will be conducted the same as for Milestone products, with the following exceptions:

- The ATR team members involved in the review will be limited to those appropriate for the document or analysis to be reviewed.
- A mid-review teleconference will only be held as needed. Informal coordination between the appropriate ATR team member(s) and PDT member(s) will be emphasized.
- No milestone meeting or associated MFR will be prepared. Instead, a brief MFR summarizing the results of the seamless review will be prepared by the ATR lead or appropriate ATR team member and attached to a single summary comment in Dr. Checks. As for milestone reviews, any comments determined to be critical will also be added to Dr. Checks following the 4-part comment structure and will include PDT response and ATR backcheck.
- No ATR report or ATR certification will be prepared by the ATR Lead for seamless reviews. Rather, when the next Milestone ATR Report is prepared, the ATR Lead will briefly summarize the preceding seamless reviews in that report.

6. INDEPENDENT EXTERNAL PEER REVIEW (IEPR)

IEPR may be required for decision documents under certain circumstances. 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. A risk-informed decision, as described in EC 1165-2-214, is made as to whether IEPR is appropriate. IEPR panels will consist 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. There are two types of IEPR:

- Type I IEPR. Type I IEPR reviews are managed outside the USACE and are conducted on project studies. Type I IEPR panels assess the adequacy and acceptability of the economic and environmental assumptions and projections, project evaluation data, economic analysis, environmental analyses, engineering analyses, formulation of alternative plans, methods for integrating risk and uncertainty, models used in the evaluation of environmental impacts of proposed projects, and biological opinions of the project study. Type I IEPR will cover the entire decision document or action and will address all underlying engineering, economics, and environmental work, not just one aspect of the study. For decision documents where a Type II IEPR (Safety Assurance Review) is anticipated during project implementation, safety assurance shall also be addressed during the Type I IEPR per EC 1165-2-214.
- Type II IEPR. Type II IEPR, or Safety Assurance Review (SAR), are managed outside the USACE and are conducted on design and construction activities for hurricane, storm, and flood risk management projects or other projects where existing and potential hazards pose a significant threat to human life. Type II IEPR panels will conduct reviews of the design and construction

activities prior to 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.

- a. **Decision on IEPR.** The Feasibility Report/EIS/EIR will be subject to Type I IEPR, including Safety Assurance Review factors, and Type II IEPR during the subsequent Design and Implementation Phase if a project is recommended for construction. This decision is based on the information presented in EC 1165-2-214 and Section 3, including the presence of life safety issues and complexity of the project (including potential robustness measures). No requests to conduct IEPR have been received from a head of a Federal or state agency charged with reviewing the project. The District Chief of Engineering concurs with the assessment of life safety risk described in this review plan.

EC 1165-2-214 Criteria	Sutter Basin Feasibility Study
Is there significant threat to human life?	There are urbanized areas within the study area that have experienced fatalities in past flood events; thus there is a threat to human life/safety.
Is the total project cost more than \$45 million?	It can be assumed that the ultimate cost associated with a recommended plan is likely to be in the high hundreds of millions of dollars range.
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.
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.
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 study is one of the first two Pilot Studies; therefore, the PDT and reviewers will be involved in a new process which will require a change from business as usual. This will be especially challenging for reviewers as they will have to manage and balance an adequate level of detail and uncertainty throughout the pre-authorization planning process, eliminating unnecessary data collection and analyses while maintaining quality of analysis and outcome.

- b. **Products to Undergo Type I IEPR.** The full IEPR panel will receive the entire draft Feasibility Report/EIS/EIR and all technical appendixes concurrent with public and agency review. The final review report to be submitted by the IEPR panel must be submitted to the PDT within 10 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 for discussion at the Civil Works Review Board (CWRB). An IEPR panel member must attend the CWRB. Following the CWRB, the Corps will issue final response to the IEPR panel and notify the public.

- c. **Required Type I IEPR Panel Expertise.** The IEPR Team will be selected by a qualified Outside Eligible Organization (OEO). The FRM PCX will identify an IEPR manager, who will work with the PDT to write a scope of work for the OEO that includes developing a charge to reviewers that outlines the scope and requirements of the review, identifying potential reviewers, contracting them, managing the review, and documenting the review. Due to the nature and complexity of the study it is expected that multiple team members will be needed for certain disciplines. The team will consist of approximately 6 reviewers.

IEPR Panel Members/Disciplines	Expertise Required
Economics	The Economics Panel Member should be experienced in civil works and related flood risk management projects. Must have a thorough understanding of HEC-FDA
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 (or a similar area) and ecosystem restoration.
Civil/Structural Engineer	Team member will have experience in levee, floodwall, box culvert and drainage structure design, and utility relocations. Experience with design and construction of flood control structures in areas of high peat content is recommended. A registered professional engineer is highly recommended.
Geotechnical Engineer	The geotechnical engineering reviewer should have an extensive experience in risk –based analysis for flood control planning (as defined in ETL 1110-2-556), design of seepage control and management measures (e.g. cutoff walls, seepage berms, etc).
Hydrology and Hydraulic Engineer	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 will be used for this project (HEC-HMS, HEC-RAS, UNET, and TABS). A registered professional flood plain manager is recommended but

	not required.
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d. Documentation of Type I IEPR. The IEPR panel will be selected and managed by an OEO per EC 1165-2-214, Appendix D. Panel comments will be compiled by the OEO and should address the adequacy and acceptability of the economic, engineering and environmental methods, models, and analyses used. IEPR comments should generally include the same four key parts as described for ATR comments in Section 4.d above. The OEO will prepare a final Review Report that will accompany the publication of the final decision document and shall:

- Disclose the names of the reviewers, their organizational affiliations, and include a short paragraph on both the credentials and relevant experiences of each reviewer;
- Include the charge to the reviewers;
- Describe the nature of their review and their findings and conclusions;
- Identify and summarize each unresolved issue (if any); and
- 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 OEO no later than 10 days following the close of the public comment period for the draft decision document. USACE shall consider all recommendations contained in the Review Report and prepare a written response for all recommendations adopted or not adopted. The final decision document will summarize the Review Report and USACE response. The Review Report and USACE response will be made available to the public, including through electronic means on the internet.

The official USACE response to the IEPR panel recommendations will be provided to the final Review Report only. Initial responses to IEPR panel recommendations will be developed and documented by the PDT and provided to the vertical team for consideration in developing the official USACE response. DrChecks will be used to document the IEPR comments and initial District responses.

7. Type II IEPR

Type II IEPR. Type II IEPR, or Safety Assurance Review (SAR), are managed outside the USACE and are conducted on design and construction activities for hurricane, storm, and flood risk management projects or other projects where existing and potential hazards pose a significant threat to human life. Type II IEPR panels will conduct reviews of the design and construction activities prior to 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.

a. Decision on IEPR. The Feasibility Report/EIS/EIR will be subject to Type II IEPR, including Safety Assurance Review factors, during the Preconstruction Engineering and Design (PED) phase if a project is recommended for construction. This decision is based on the information presented above in Section 2.c., including the presence of life safety issues and complexity of the project (including potential robustness measures). No requests to conduct IEPR have been received from a head of a Federal or state agency charged with reviewing the project.

- b. Products to Undergo Type II IEPR.** The Final Feasibility Report/EIS/EIR (including NEPA/CEQA documentation and technical appendices), Review Plan, O&M Manual, and design and construction activities will be subject to a Type II IEPR during the PED Phase. Any additional products to be reviewed will be determined as the study progresses and the Review Plan will be adjusted accordingly.
- c. Required Type II IEPR Panel Expertise.** The Type II IEPR Team will be selected and managed by an organization external to the Corps, per EC 1165-2-214. The RMC will coordinate the Type II IEPR and work with the PDT to write a scope of work for the review that includes developing a charge to reviewers that outlines the scope and requirements of the review, identifying potential reviewers, contracting them, managing the review, and documenting the review. Due to the nature and complexity of the study it is expected that multiple team members will be needed for certain disciplines. The team will consist of approximately 6 reviewers.

Type II IEPR Panel Members/Disciplines	Expertise Required
Economics	The Economics Panel Member should be experienced in civil works and related flood risk management projects. Must have a thorough understanding of HEC-FDA
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 (or a similar area) and ecosystem restoration.
Civil/Structural Engineer	Team member will have experience in levee, floodwall, box culvert and drainage structure design, and utility relocations. Experience with design and construction of flood control structures in areas of high peat content is recommended. A registered professional engineer is highly recommended.
Geotechnical Engineer	The geotechnical engineering reviewer should have an extensive experience in risk –based analysis for flood control planning (as defined in ETL 1110-2-556), design of seepage control and management measures (e.g. cutoff walls, seepage berms, etc).
Hydrology and Hydraulic Engineer	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 will be used for this project (HEC-HMS, HEC-RAS, UNET, and TABS). A registered professional flood plain manager is recommended but

	not required.
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d. Documentation of Type II IEPR. Per EC 1165-2-214, Appendix E, the review team will prepare a Review Report. All review panel comments shall be entered as team comments that represent the group and be non-attributable to individuals. The team lead is to seek consensus, but where there is a lack of consensus, note the non-concurrence and why. A suggested report outline includes:

- Introduction,
- Composition of the review team,
- Summary of the review during design,
- Summary of the review during construction,
- Lessons learned in both the process and/or design and construction,
- Appendices for conflict of disclosure forms for comments to include any appendices for supporting analyses and assessments of the adequacy and acceptability of the methods, models, and analyses used.

All comments in the report will be finalized by the panel prior to their release to USACE for each review plan milestone. The final Review Report will be submitted no later than 60 days following the close of the review period. The District Chief of Engineering, with full coordination with the Chiefs of Construction and Operations, shall consider all comments contained in the report and prepare a written response for all comments and note concurrence and subsequent action or non-concurrence with an explanation. The District Chief of Engineering shall submit the panel’s report and the Districts responses shall be submitted to the MSC for final MSC Commander approval and then make the report and responses available to the public on the District’s website.

8. POLICY AND LEGAL COMPLIANCE REVIEW (Applicable with next revision to RP and stage of study)

All decision documents will be reviewed throughout the study process for their compliance with law and policy. Guidance for policy and legal compliance reviews is addressed in Appendix H, ER 1105-2-100. These reviews culminate in 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 home MSC Commander. DQC and ATR augment and complement the policy review processes by addressing compliance with pertinent published Army policies, particularly policies on analytical methods and the presentation of findings in decision documents.

9. COST ENGINEERING DIRECTORY OF EXPERTISE (DX) REVIEW AND CERTIFICATION (Applicable with next revision to RP and stage of study)

All decision documents shall be coordinated with the Cost Engineering DX, located in the Walla Walla District. The DX will assist in determining the expertise needed on the ATR team and Type I IEPR team (if required) and in the development of the review charge(s). The DX will also provide the Cost Engineering DX certification. The RMO is responsible for coordination with the Cost Engineering DX.

10. MODEL CERTIFICATION AND APPROVAL

EC 1105-2-412 mandates the use of certified or approved models for all planning activities to ensure the models are technically and theoretically sound, compliant with USACE policy, computationally accurate, and based on reasonable assumptions. Planning models, for the purposes of the EC, 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. The use of a certified/approved planning model does not constitute technical review of the planning product. The selection and application of the model and the input and output data is still the responsibility of the users and is subject to DQC, ATR, and IEPR (if required).

EC 1105-2-412 does not cover engineering models used in planning. 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. As part of the USACE Scientific and Engineering Technology (SET) Initiative, many engineering models have been identified as preferred or acceptable for use on Corps studies and these models should be used whenever appropriate. The selection and application of the model and the input and output data is still the responsibility of the users and is subject to DQC, ATR, and IEPR (if required).

- a. **Planning Models.** The following planning models are anticipated to be used in the development of the decision document:

Model Name and Version	Brief Description of the Model and How It Will Be Applied in the Study	Certification / Approval Status
HEC-FDA 1.2.5	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 without- and with-project plans along the Wild River near River City to aid in the selection of a recommended plan to manage flood risk.	Certified
IWR-Planning Suite	This software assists with the formulation and comparison of alternative plans. While IWR-PLAN was initially developed to assist with environmental restoration and watershed planning studies, the program can be useful in planning studies addressing a wide variety of problems. IWR-PLAN can assist with plan formulation by combining solutions to planning problems and calculating the additive effects of each combination, or "plan." IWR-PLAN can assist with plan comparison by conducting cost effectiveness and incremental cost analyses, identifying the plans which are the best financial investments and displaying the effects of each	Certified

	on a range of decision variables	
Metrics Evaluation and Multi-Objective Analysis	<p>The Metrics Evaluation and Multi-Objective Analysis are for the use of a multi-criteria approach to alternative selection, including moving away from the rote acceptance of NED or NER as the sole criterion for plan selection. The Sutter pilot study team developed a multi-criteria approach to alternative selection, including moving away from the rote acceptance of NED or NER as the sole criterion for plan selection. The Sutter pilot study team developed a multi-objective approach to plan evaluation and selection that would consider all of the planning objectives identified for the study, rather than only the NED and NER objectives. The final array of alternatives will be evaluated and compared through a comprehensive trade-off analysis, which might involve unequal weighting of criteria. The alternative with the greatest net benefits would be identified; but may not be chosen as the TSP based on the results of the trade-off analysis.</p> <p>The Metrics Evaluation and Multi-Objective Analysis Document will be reviewed by an appropriate ATR member for accuracy and applicability to the study and will be approved for use by the reviewer and the FRM-PCX.</p>	Approval – February 2013

b. Engineering Models. The following engineering models are anticipated to be used in the development of the decision document:

Model Name and Version	Brief Description of the Model and How It Will Be Applied in the Study	Approval Status
HEC-RAS 4.0 (River Analysis System)	The Hydrologic Engineering Center’s River Analysis System (HEC-RAS) program provides the capability to perform one-dimensional steady and unsteady flow river hydraulics calculations. HEC-RAS is a next generation software replacement to HEC-2 and UNET models. Two HEC-RAS models will be utilized including a Sacramento River system model (includes Feather River, Wadsworth Canal, and Sutter Bypass) and a Cherokee Canal model. These models will be used to model a suite of water surface profiles assuming no levee breaches. In addition, the models will be used to simulate levee breach hydrographs.	HH&C CoP Preferred Model
MCACES or MII:	These are cost estimating models.	CoP Preferred
HEC-HMS	This is a rainfall runoff model. HEC-HMS is a next generation software replacement to the HEC-1 model. This model may be used to simulate rainfall runoff within the Sutter Basin interior area. By applying this model the PDT is able to: <ul style="list-style-type: none"> • Define the watersheds’ physical features • Describe the meteorological conditions • Estimate parameters 	CoP Preferred

	<ul style="list-style-type: none"> Analyze simulations Obtain GIS connectivity 	
HEC-ResSim	<p>This model predicts the behavior of reservoirs and to help reservoir operators plan releases in real-time during day-to-day and emergency operations. HEC-ResSim is a next generation software replacement to the HEC-5 model. This model may be used to simulate reservoir operations within the study area. The following describes the major features of HEC-ResSim</p> <ul style="list-style-type: none"> Graphical User Interface Map-Based Schematic Rule-Based Operations 	Reservoir Systems Analysis CoP Preferred Model
HEC-5:	<p>This model simulates the sequential operation of a system of reservoirs for short interval historical or synthetic floods, long duration non-flood periods, or combinations of the two. This can be used to evaluate reservoir systems to determine storage requirements, changes in runoff distribution, operational criteria, energy generation demands and capabilities, and compare alternatives. This model was used for the Sacramento-San Joaquin Comprehensive study. Results of that modeling effort (hydrographs) will be utilized for the Sutter Basin Feasibility Study. These models may be adapted for use in alternatives analysis.</p>	Allowed for Use
HEC-1	<p>This is a watershed program model that simulates the precipitation-runoff process. Precipitation runoff, channel routing, Reservoir routing, diversions, and hydrograph combinations are used to estimate hydrographs at various locations. Other capabilities include automatic parameter estimation and flood damage analysis. This model is limited to single event analysis and does not account for downstream backwater conditions.</p>	Allowed for Use
UNET:	<p>This computer model, developed by Dr. Robert Barkau, is designed to simulate unsteady flow through a full network of open channels, weirs, bypasses, and storage areas. This model was used for the Sacramento-San Joaquin Comprehensive study. Results of that modeling effort (hydrographs) will be utilized for the Sutter Basin Feasibility Study. These models may be adapted for use in alternatives analysis.</p>	Allowed for Use
FLO-2D:	<p>FLO-2D is a 2-dimensional, dynamic flood routing model that simulates movement of water across the ground surface while reporting volume conservation. It numerically routes flood hydrographs over a system of grid elements, and predicts the area of inundation and floodwave attenuation. This model will be used to simulate the floodplain inundation from a suite of simulated levee breaches. Levee breach hydrographs will be</p>	Allowed for Use

	obtained from the HEC-RAS model.	
GMS-SEEP2D	The SEEP2D model embedded within the GMS graphical user interface uses the finite-element method to develop two-dimensional groundwater flow nets. This is primarily used to evaluate: <ul style="list-style-type: none"> • Levee underseepage • Levee through-seepage 	Groundwater Hydrology CoP Preferred Model
Utexas4:	This model is used in conjunction with GMS/SEEP2D to conduct slope stability analysis. This program searches for the lowest factor of safety for static stability for circular and non-circular failure surfaces using a limit-equilibrium method. This model is used primarily to evaluate: <ul style="list-style-type: none"> • Long-term static stability of levees • Stability of levees during construction loading • Stability of levees during seismic loading • Stability of levees during rapid-drawdown conditions 	Allowed for Use

11. REVIEW SCHEDULES AND COSTS

- a. **ATR Schedule and Cost.** The PDT 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 Lead to ensure that adequate funding is available and is commensurate with the level of review needed. The current cost estimate for this review is \$100,000 to \$150,000. Any funding shortages will be negotiated on a case by case basis and in advance of a negative charge occurring. The team lead shall provide organization codes for each team members 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 Lead to any possible funding shortages.

The next major milestone review will be the the Draft Feasibility Report/EIS/EIR which is expected to be ready for review in April, 2013. The ATR will occur simultaneously with the IEPR and Public Review. Upon conclusion of IEPR and Public Review, changes and comments will be submitted back to the ATR Lead for a final review and approval. One Review Report will be prepared for the review of the Draft Report and Draft Final Report.

<u>Milestone</u>	<u>Date</u>
ATR Certification of Geotechnical Report (Complete)	October 2012
ATR of Progress Document #3	October 2012 – March 2013
ATR Kickoff and Begin ATR of Draft Report/EIS/EIR	April 2013

ATR Draft Report Comments Submitted	May 2013
PDT Response and Coordination with ATRT	May 2013
ATRT Backcheck/Closeout of Draft Report/EIS/EIR	May 2013
ATR of Final Report	June 2013
ATR Review Report	June 2013

- b. Type I IEPR Schedule and Cost.** The FRM-PCX 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 and for PCX support for the IEPR. The next milestone review for IEPR will follow the release of the Draft Feasibility Report/EIS/EIR and is estimated to begin in April 2013. Due to the complex and unique nature of the study the estimated cost for the IEPR is estimated to be in the range of \$200,000 - 250,000.
- c. Type II IEPR (SAR) Schedule and Cost.** An SAR will be conducted during the Preconstruction Engineering and Design (PED) phase. It is anticipated that this review will cost in the range of \$200,000 - \$250,000.
- d. Model Certification/Approval Schedule and Cost.** Planning and engineering models to be used in this study have been certified. The Metrics Evaluation and Multi-Objective Analysis will be reviewed and approved by March, 2013. If study analyses require use of non-certified models in the future, the study schedule and budget will be refined accordingly.

12. PUBLIC PARTICIPATION

The public and agencies will have opportunities to participate in this study. The earliest opportunity will be as part of the public scoping process during the first year of the study. Public review of the draft feasibility report will occur after 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 ATR team reviewing the draft Report. Public review of the draft report will begin less than 30 days after the completion of the ATR process and policy guidance memo. The period will last a minimum of 45 days as required for an EIS. One or more public workshops will be held during the public and agency review period. The final public meeting on the draft report is scheduled for March 2013. 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 ATR Team 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. 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.

13. REVIEW PLAN APPROVAL AND UPDATES

The South Pacific Division Commander is responsible for approving this Review Plan. The Commander's approval reflects vertical team input (involving district, MSC, RMO, 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. The home district is responsible for keeping the Review Plan up to date. Minor changes to the review plan since the last MSC Commander approval are documented in Attachment 3. Significant changes to the Review Plan (such as changes to the scope and/or level of review) should be re-approved by the MSC Commander following the process used for initially approving the plan. The latest version of the Review Plan, along with the Commanders' approval memorandum, should be posted on the Home District's webpage. The latest Review Plan should also be provided to the RMO and home MSC.

14. REVIEW PLAN POINTS OF CONTACT

Public questions and/or comments on this review plan can be directed to the following points of contact:

1. District Point of Contact: Miki Fujitsubo, Planner, 916-557-7440 or Miki.Fujitsubo@usace.army.mil
2. MSC Point of Contact: TBD
3. FRM-PCX Point of Contact: Eric Thaut, Program Manager, 415-503-6852 or Eric.W.Thaut@usace.army.mil

ATTACHMENT 1: TEAM ROSTERS

Project Delivery Team

Name	Agency	Phone	Email
Laura Whitney	CESPK-PM-C	916-557-7455	laura.a.whitney@usace.army.mil
Miki Fujitsubo	CESPK-PD-W	916-557-7440	miki.fujitsubo@usace.army.mil
Matilda Evoy-Mount	CESPK-PD-WF	916-557-5322	matilda.l.evoy-mount@usace.army.mil
Peter Blodgett (Engineering Technical Lead)	CESPK-ED-HD	916-557-7529	peter.j.blodgett@usace.army.mil
Rich Kristof	CESPK-ED-DB	916-557-6982	richard.c.kristof@usace.army.mil
Tung Le	CESPK-ED-DC	916-557-6828	Tung.Le@usace.army.mil
Matt Davis	CESPK-PD	916-557-6708	matthew.g.davis@usace.army.mil
Steve Holmstrom	CESPK-ED-HH	916-557-7129	steven.f.holmstrom@usace.army.mil
Erik Gomez	CESPL-PD-W	916-557-7536	erik.gomez@usace.army.mil
Robert Vrchticky	CESPK-ED-DR	916-557-7336	robert.d.vrchticky@usace.army.mil
Laurie Parker	CESPK-RE-B	916-557-6741	laurie.s.parker@usace.army.mil
S. Joe Griffin	CESPK-PD-R	916-557-7897	s.joe.griffin@usace.army.mil
Jane Bolton	CESPK-ED-GS	916-557-7637	jane.m.bolton@usace.army.mil
Thai Huynh	CESPK-ED-GS	916-557-7510	thai.huynh@usace.army.mil
Rick Meager	CESPK-ED-ED	916-557-7288	richard.f.meagher@usace.army.mil
Tyler Stalker	CESPK-PA	916-557-5107	tyler.m.stalker@usace.army.mil
Destani Hobbs	CESPK-ED-SG	916-557-7959	destani.m.hobbs@usace.army.mil
Lisa Eckert	CESPK-PD-RP	916-557-6688	lisa.e.eckert@usace.army.mil
Alarice Hansberry	CESPK-OC	916-557-7264	alarice.r.hansberry@usace.army.mil
Michael Musto	DWR	916-574-1043	mcwright@water.ca.gov
Erin Brehmer	DWR	917-574-2236	ebrehmer@water.ca.gov
Mike Inamine	SBFCA	916-392-4909	bille@EandA.org
David Peterson	SBFCA	916-608-2212 x122	dpeterson@pbieng.com

District Quality Control Team

Name	Discipline	Phone	Email
Mary Perlea	Geotechnical	916-557-7185	Mary.P.Perlea@usace.army.mil
Timi Shimabukuro	Economics	916-557-5313	Timi.R.Shimabukuro@usace.army.mil
Bob Vrchticky	Cost Engineering	916-557-7336	Robert.D.Vrchticky@usace.army.mil
Leslie Tornatore	Real Estate	916-557-7379	Leslie.E.Tornatore@usace.army.mil
Tanis Toland	Environmental	916-557-6717	Tanis.J.Toland@usace.army.mil
John High	Hydrology	916-557-7136	John.M.High@usace.army.mil
James Berkland	Civil/Structural Design	916-557-7268	James.L.Berkland@usace.army.mil
John Hickey	Hydraulics HEC	916-756-1104	John.Hickey@usace.army.mil
John Wiest	Hydraulics	916-557-6683	John.C.Wiest@usace.army.mil

Agency Technical Review Team

Name	Office	Discipline	Phone	Email	Experience (yrs)
Bruce Sexauer	CEPOA-PM-PL	ATR Lead	907-753-5619	Bruce.R.Sexauer@usace.army.mil	
Ronnie Barcak	CEPOA-PM-C-PL	Backup ATR Lead	907-753-5755	Ronnie.G.Barcak@usace.army.mil	16
Jonathan P. Bailey	CEMVS-EC-GT	ATR Geotechnical Reviewer	314-331-8431	Jonathan.P.Bailey@usace.army.mil	4
Mike Sayler	CEPOA-EN-CW-ER	ATR NEPA Biology/Envir	907-753-2690	Michael.P.Sayler@usace.army.mil	18
Chris Floyd	CEPOA-EN-CW-ER	ATR HTRW	907-753-2700	Christopher.B.Floyd@usace.army.mil	
Mike Alexander	CEMVK-EC-HH	ATR Hydraulics/ Hydrology	601-631-5044	Michael.P.Alexander@usace.army.mil	33
Brian Harper	CEIWR-GW	ATR Economics	571-239-0726	Brian.K.Harper@usace.army.mil	22
Janet Ulivi	CEMVS-EC	ATR Cost Engineering	314-331-8303	Janet.C.Ulivi@usace.army.mil	21
Jim Neubauer	CENWW-EC-X	Cost Estimate Certification	509-527-7332	James.G.Neubauer@usace.army.mil	31
Christina Mountour	CEMVN-ED-LL	ATR Civil/ Structural Design	504-862-2767	Christina.M.Mountour@usace.army.mil	11
Wendy Frohlich	CEMVP-PD-C	ATR Outdoor Recreation Plnr	309-794-5573	Wendy.M.Frohlich@usace.army.mil	
Kelly McCaffrey	CEMVN-PDR-RN	ATR Landscape Architect	504-862-2552	Kelly.P.Mccaffrey@usace.army.mil	
Melissa (Lynn) Hoerner	CEMVS-RE-A	ATR Real Estate	314-331-8157	Melissa.L.Hoerner@usace.army.mil	
Gregg Teasdale	CENWW-EC-H	Hydrologic Eng Ctr- Risk & Uncert	530-756-1104	Gregg.N.Teasdale@usace.army.mil	
Nate Snorteland	RMC	Risk Management Center-Safety	571-232-9189	Nathan.J.Snorteland@usace.army.mil	
Doug Gorecki	CELRB-PM-PB	ATR Metrics Approval	716-879-4415	Douglas.J.Gorecki@usace.army.mil	12

TYPE I IEPR Team

Name	Discipline	Phone	Email
TBD	Hydrology		
TBD	Hydraulics		
TBD	Geotechnical Engineering		
TBD	Economics		
TBD	Civil/Structural Engineering		
TBD	Environmental		

TYPE II IEPR TEAM

Name	Discipline	Phone	Email
TBD	Hydrology		
TBD	Hydraulics		
TBD	Geotechnical Engineering		
TBD	Economics		
TBD	Civil/Structural Engineering		
TBD	Environmental		

Vertical Team Points of Contact

Name	Discipline	Phone	Email
Karen Berresford	District Support Team Lead	415-503-6557	Karen.G.Berresford@usace.army.mil
Pauline Acosta	Regional Integration Team	202-7614085	Pauline.M.Acosta@usace.army.mil

ATTACHMENT 2: SAMPLE STATEMENT OF TECHNICAL REVIEW FOR DECISION DOCUMENTS

COMPLETION OF AGENCY TECHNICAL REVIEW

The Agency Technical Review (ATR) has been completed for the <type of product> for <project name and location>. The ATR was conducted as defined in the project’s Review Plan to comply with the requirements of EC 1165-2-214. During the ATR, 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 results, including whether the product meets the customer’s needs consistent with law and existing US Army Corps of Engineers policy. The ATR also assessed the District Quality Control (DQC) documentation and made the determination that the DQC activities employed appear to be appropriate and effective. All comments resulting from the ATR have been resolved and the comments have been closed in DrCheckssm.

SIGNATURE

Forest Brooks
ATR Team Leader
POA-PD

Date

SIGNATURE

Laura Whitney
Project Manager
CESPK-PM

Date

SIGNATURE

Eric Thaut
Review Management Office Representative
CESPD-PDP

Date

CERTIFICATION OF AGENCY TECHNICAL REVIEW

Significant concerns and the explanation of the resolution are as follows: [Describe the major technical concerns and their resolution.](#)

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

SIGNATURE

Rick Poepelman
Chief, Engineering Division
CESPK- ED

Date

SIGNATURE

Alicia Kirchner
Chief, Planning Division
CESPK-PD

Date

ATTACHMENT 3: REVIEW PLAN REVISIONS

Revision Date	Description of Change	Page / Paragraph Number
September 2012	Updated Review Plan for consistency with EC 1165-2-214 and EC 1105-2-412	All
September 2012	Updated study details and schedule to reflect Pilot Study process and requirements	All
September 2012	Updated PDT list	24
September 2012	Populated ATR Team list	24

ATTACHMENT 4: ACRONYMS AND ABBREVIATIONS

<u>Term</u>	<u>Definition</u>	<u>Term</u>	<u>Definition</u>
ASA(CW)	Assistant Secretary of the Army for Civil Works	NED	National Economic Development
ATR	Agency Technical Review	NER	National Ecosystem Restoration
CEQA	California Environmental Quality Act	NEPA	National Environmental Policy Act
CSDR	Coastal Storm Damage Reduction	O&M	Operation and maintenance
CVFPB	Central Valley Flood Protection Board	OMB	Office and Management and Budget
CWRB	Civil Works Review Board	OMRR&R	Operation, Maintenance, Repair, Replacement and Rehabilitation
DPR	Detailed Project Report	OEO	Outside Eligible Organization
DQC	District Quality Control/Quality Assurance	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
EIR	Environmental Impact Report	PL	Public Law
EO	Executive Order	QMP	Quality Management Plan
ER	Ecosystem Restoration	QA	Quality Assurance
FDR	Flood Damage Reduction	QC	Quality Control
FEMA	Federal Emergency Management Agency	QMP	Quality Management Plan
FRM	Flood Risk Management	RED	Regional Economic Development
FSM	Feasibility Scoping Meeting	RMC	Risk Management Center
GRR	General Reevaluation Report	RMO	Review Management Organization
Home District/MSC	The District or MSC responsible for the preparation of the decision document	RTS	Regional Technical Specialist
HQUSACE	Headquarters, U.S. Army Corps of Engineers	SAR	Safety Assurance Review
IEPR	Independent External Peer Review	SBFCA	Sutter Butte Flood Control Agency
IPR	In-Progress Review	USACE	U.S. Army Corps of Engineers
ITR	Independent Technical Review	WRDA	Water Resources Development Act
LRR	Limited Reevaluation Report		
MFR	Memorandum For Record		
MSC	Major Subordinate Command		
NAS	National Academies of Science		

ATTACHMENT 5: FRM-PCX REVIEW MEMO

**ATTACHMENT 6: SPD REVIEW PLAN CHECKLIST FOR IMPLEMENTATION AND DECISION DOCUMENTS
AND SPD REGIONAL SUPPLEMENTAL REVIEW PLAN CHECKLIST**