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

REPLY TO
ATTENTION OF

10-Sep 2013

CESPD-PDC

MEMORANDUM FOR Commander, Sacramento District US Army Corps of Engineers, ATTN: Mr. Michael Dietl (CESPK-PM-C)

Subject: Review Plan Approval for the South Sacramento County Streams Project

1. The enclosed Review Plan for the South Sacramento County Streams Project, California, dated August 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 Risk Management Center. The Risk Management Center 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 in the form of Safety Assurance 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!

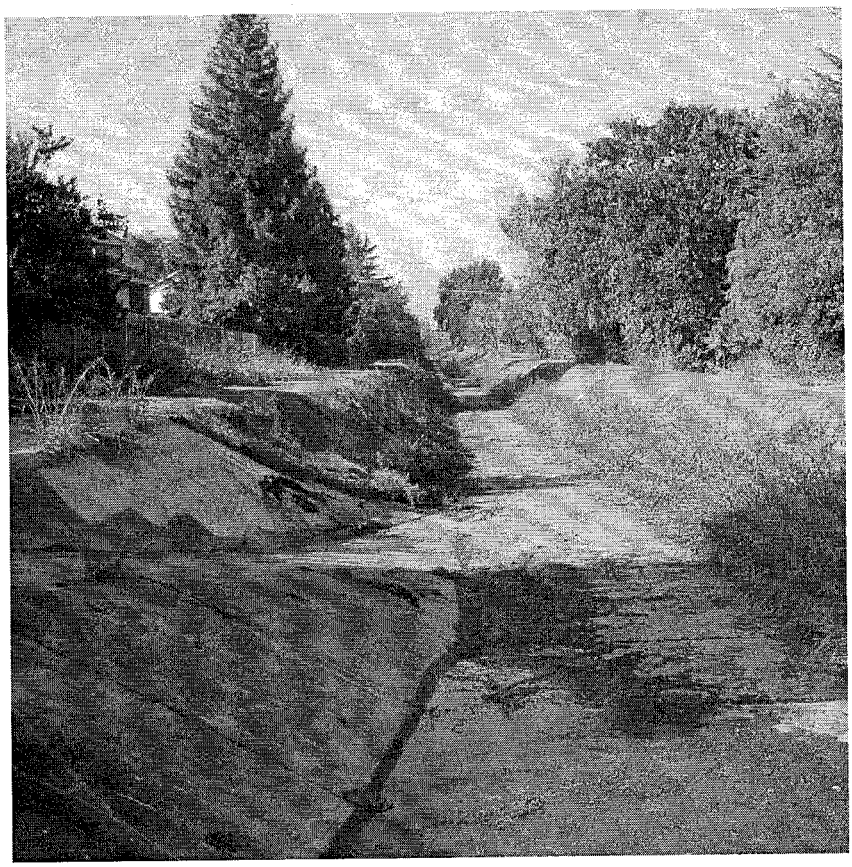
JOSEPH F. CALCARA
Director, Programs

Encl
Review Plan

REVIEW PLAN

SOUTH SACRAMENTO COUNTY STREAMS, FLORIN CREEK, CALIFORNIA
PROJECT LEVEL REVIEW PLAN

SACRAMENTO DISTRICT, U.S. ARMY CORPS OF ENGINEERS



US Army Corps
of Engineers®

August 2013

Approved: 10 September 2013

REVIEW PLAN

SOUTH SACRAMENTO COUNTY STREAMS, FLORIN CREEK, CALIFORNIA
PROJECT LEVEL REVIEW PLAN

SACRAMENTO DISTRICT

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APPENDICES

REVIEW PLAN

SOUTH SACRAMENTO COUNTY STREAMS, FLORIN CREEK, CALIFORNIA PROJECT LEVEL REVIEW PLAN

SACRAMENTO DISTRICT

1. PURPOSE AND REQUIREMENTS

A. Purpose. This Review Plan (RP) defines the scope of review activities for the South Sacramento County Streams Project for Florin Creek and for a potential Post Authorization Change Report (PACR) for project close out. This RP applies to an economic update, a potential PACR, and implementation documents. The Review activities consist of District Quality Control (DQC), Regional Technical Review (RTR), Agency Technical Review (ATR), and Independent External Peer Review (IEPR) Type II. The project is in the implementation phase. The related project documents consist of a Design Documentation Report (DDR), Plans and Specifications, OMRR&R manual, economic update, and a potential PACR pending the results of the economic update. A PACR maybe produced to document any remaining elements of the project but will not recommend any additional construction. The decision document for the Florin Creek project is the 1998 South Sacramento County Streams Chief of Engineers Report; the project was authorized for construction in August 1999. A 2004 Limited Reevaluation Report (LRR) was prepared to validate design changes and reconfirmed federal interest in the South Sacramento Streams project authorized by section 101 of the Water Resources Development Act of 1999.

B. References.

(1) ER 1110-2-1150, Engineering and Design for Civil Works Projects, 31 Aug 1999

(2) ER 1110-1-12, Engineering and Design Quality Management, 21 Jul 2006

(3) WRDA of 1999, Section 101, Public Law 106-53, August 17, 1999

(4) EC 1165-2-214, Civil Works Review Policy, 15 Dec 2012

(5) EC 1165-2-214, Sec 7, Biddability, Constructability, Operability, Environmental Sustainability (BCOES) reviews, Policy and Legal Review

(6) Army Regulation 15–1, Committee Management, 27 November 1992 (Federal Advisory Committee Act Requirements)

(7) National Academy of Sciences, Background Information and Confidential Conflict Of Interest Disclosure, BI/COI FORM 3, May 2003

(8) South Sacramento County Streams Project, Project Management Plan, Feb 1998 (P2# 105701)

This RP was prepared following the *Civil Works Review Policy*, EC 1165-2-214, dated 15 December 2012. The EC formally distinguishes between technical review performed in-district (District Quality Control, "DQC") and out-of-district resources (formerly Independent Technical Review, "ITR," now Agency Technical Review, "ATR"). It also reaffirms the requirement for IEPR; this is the most independent level of review and is applied in cases that

meet certain criteria where the risk and magnitude of a project are such that a critical examination by a qualified team outside of the U.S. Army Corps of Engineers (USACE) is warranted. For the Florin Creek project, Appendix E of the EC provides guidance for Type II IEPR reviews conducted on design and construction activities.

C. Requirements. EC 1165-2-214 outlines the requirement of the three review approaches (DQC, ATR, and IEPR). This document addresses review of the decision document as it pertains to DQC, ATR, and IEPR and planning coordination with the appropriate RMO. The Florin Creek portion of the South Sacramento Streams Project's purpose is flood risk management (FRM). FRM shall have an ATR role should a PACR document be prepared. The South Sacramento County Streams project was also authorized for eco-system restoration and restoration measures have been constructed in other areas of the project. However, there will be no eco-system restoration on Florin Creek. Therefore, the PCX for FRM is considered the primary PCX for coordination and may coordinate with the ECO-PCX should a PACR document be prepared. The RMC will be the RMO for ATR of Engineering Plans and Specifications.

1. District Quality Control. DQC is the review of basic science and engineering work products focused on fulfilling the project quality requirements defined in the PMP for the project (to which this Review Plan will ultimately be appended). It is managed in the Sacramento District in accordance with the MSC and district Quality Control Plan. DQC may be conducted by in-house staff as long as the reviewers are not doing the work involved in the study, including contracted work that is being reviewed. Basic quality control tools include a Quality Management Plan (QMP) 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 documents to assure their overall integrity, technical appendices and the recommendations before the approval by the District Commander. South Pacific Division (SPD) and Sacramento District (SPK) are directly responsible for the QM and QC respectively, and to conduct and document this fundamental level of review

2. Agency Technical Review. EC 1165-2-214 recharacterizes ATR (which replaces the level of review formerly known as Independent Technical Review) as an in-depth review, managed within USACE, and conducted by a qualified team outside of the home district that is not involved in the day-to-day production of a project/product. The purpose of this review is to ensure the proper application of clearly established criteria, regulations, laws, codes, principles and professional practices. The ATR team reviews the various work products and assures that all the parts fit together in a coherent whole. ATR teams will be comprised of senior USACE personnel and may be supplemented by outside experts as appropriate. To assure independence, the leader of the ATR team shall be from outside the home MSC. DrChecks (https://www.projnet.org/projnet/) will be used to document all ATR comments, responses, and associated resolution accomplished. This Review Plan outlines the proposed approach to meeting this requirement for this project. ATR will be required for the potential PACR document.

3. Independent External Peer Review. EC 1165-2-214 recharacterized the external peer review process that was originally added to the existing Corps review process via EC 1105-2-408. IEPR is the most independent level of review. A Type II IEPR SAR shall be conducted on Florin Creek design and construction activities due to hazards that pose a significant threat to human life for flood risk management projects.

External panels will review the design and construction activities prior to initiation of physical construction and periodically thereafter until construction activities are completed. The review shall be on a regular schedule sufficient to inform the Chief of Engineers on the adequacy, appropriateness, and acceptability of the design and construction activities for the purpose of assuring that good science, sound engineering, and public health, safety, and welfare are the most important factors that determine a project's fate. The District Chief of Engineering, as the Engineer-In-Responsible-Charge, is responsible for ensuring the IEPR Type II IEPR review is conducted in accordance with this Circular, and will fully coordinate with the Chief of Construction, the Chief of Operations, and the project manager through the design and construction phases. The project manager will coordinate with the RMO to develop the review requirements and to include them in the Review Plan. The RMO for Type II IEPR reviews is the USACE Risk Management Center.

4. Policy and Legal Compliance Review. The documents will be reviewed for their compliance with law and policy. Guidance for policy and legal compliance reviews is addressed further in Appendix H, ER 1105-2-100. Technical reviews described in EC 1165-2-214 are to augment and complement the policy review processes by addressing compliance with published Army polices pertinent to planning products, particularly polices on analytical methods and the presentation of findings. DQC and ATR efforts are to include the necessary expertise to address compliance with published planning policy. Counsel will generally not participate on ATR teams, but may at the discretion of the district or as directed by higher authority. When policy and/or legal concerns arise during DQC or ATR efforts that are not readily and mutually resolved by the PDT and the reviewers, the District will seek issue resolution support from SPD and HQUSACE in accordance with the procedures outlined in Appendix H, ER 1105-2-100. The Type II IEPR panel members are not expected to be knowledgeable of Army and administration polices, nor are they expected to address such concerns. An IEPR team should be given the flexibility to bring important issues to the attention of decision makers. Legal reviews will be conducted concurrent with ATR of the draft and final documents.

5. RMO Coordination. This RP will be coordinated with the RMO. The RMO is responsible for the accomplishment and quality of ATR and IEPR. The DQC is the responsibility of the Sacramento District with SPD having the QA role. The RMO may conduct the review or manage the ATR and IEPR reviews to be conducted by others.

6. Review Plan Approval and Posting. In order to ensure the Review Plan is in compliance with the principles of EC 1165-2-214 and the MSC's QMP, the Review Plan must be approved by the applicable MSC, in this case the Commander, SPD. Once the Review Plan is approved, the Sacramento District will post it to its district public website and notify SPD and the RMO.

7. Engineering Review of Risk and Uncertainty. IWR/HEC, in coordination with IWR/RMC, RMO, will insure all Planning decision documents involving HH&C (hydrologic, hydraulic consequence) related risk reduction measures are fully reviewed and all issues resolved.

D. Review Management Organization

The RMO is the RMC, per EC 1165-2-214, App E, Sec 1.b. "The default RMO for flood risk management projects and Type II reviews is the Risk Management Center (RMC). If the RMC and MSC agree that a Type II review does not need to be conducted, the MSC may assume RMO responsibilities for the implementation phase. Any such transfer of responsibility should be mutually agreed upon and mindful of all remaining phases of the project.."

The draft review plan and list of SPD comments have been forwarded to the RMC requesting their involvement. The RMC verified that they are the RMO for Dam Safety Modification projects and Levee Safety Modification projects. The regulations state that for all other projects the MSC shall serve as the RMO, which in this case, is SPD.

A regional Technical Review (RTR) for economics and an ATR for all other technical disciplines will be conducted. The Review Plan will be updated to outline the path forward including conducting Regional Technical Reviews for the ERR, ATRs for all technical disciplines, and identifying the type of Planning document needed for the project closeout. The RMO for the ERR or Planning document for project closeout is SPD.

2. PROJECT INFORMATION AND BACKGROUND

A. Project Authority, Congressional Districts and Sponsor. The South Sacramento County Streams Project, Sacramento, California was authorized by section 101 of the Water Resources Development Act of 1999, Public Law 106-53 on August 17, 1999. The authority is stated as follows: *"The following projects are authorized for construction....South Sacramento County Streams, California. The project for flood Control, environmental restoration and recreation, South Sacramento County Streams, California: Report of the Chief of Engineers dated October 6, 1998, at a total cost of $65,500,000, with an estimated Federal cost of $41,200,000 and an estimated non-Federal cost of $24,300,000".*

The project area lies within the jurisdiction of the following Congressional Districts – 3rd, 4th, 5th.

The non-Federal sponsor and local agency cost-sharing partner for the project is the California State Central Valley Flood Protection Board. The Sacramento Area Flood Control Agency (SAFCA) is partnering with the State to provide cost-sharing funds and to accomplish the non-Federal responsibilities.

B. Project Location and Overview. The project is located in south and east Sacramento (see Figure 1). The authorized project purposes are flood damage reduction, ecosystem restoration, and recreational improvements for Morrison, Florin, Elder, and Unionhouse Creeks in the Morrison Creek basin. The project addresses the flood problems in two distinct basins: the 131 square mile Morrison Creek stream group (upper) basin and the 49 square mile Beach Stone Lakes (lower) basin.

The Morrison Creek stream group (upper basin) is highly urbanized. The upper basin also includes Laguna Creek upstream from about Franklin Boulevard. Morrison and Laguna Creeks

flow into the lower basin (Beach Stone Lakes). Generally, flooding in the upper basin is due to inadequate channel capacity. A number of bridges impede flows.

The Beach Stone Lake (lower basin) is located downstream of the confluence of Unionhouse and Morrison Creek. During floods, flows from Morrison Creek and backwater from the downstream system result in extensive ponding. The dominant land uses in the lower basin are a wildlife preserve, agriculture, sewage treatment, and open space.

The original feasibility report for the study was completed in March 1998 (South Sacramento County Streams Investigation). An EIS/EIR was completed in March 1998 for the feasibility study and authorized project. The Chief of Engineer's Report to Congress dated October 6, 1998, requested authorization for the project. The recommended plan was authorized by Congress in 1999, and the Corps, the Reclamation Board, and SAFCA proceeded into the preconstruction engineering and design phase of the project. In the 2004 LRR there are no proposed changes in project purpose or location. A reach by reach comparison of key flood control features of the authorized project and proposed project shows the extent of design changes that have resulted from more detailed PED investigations.

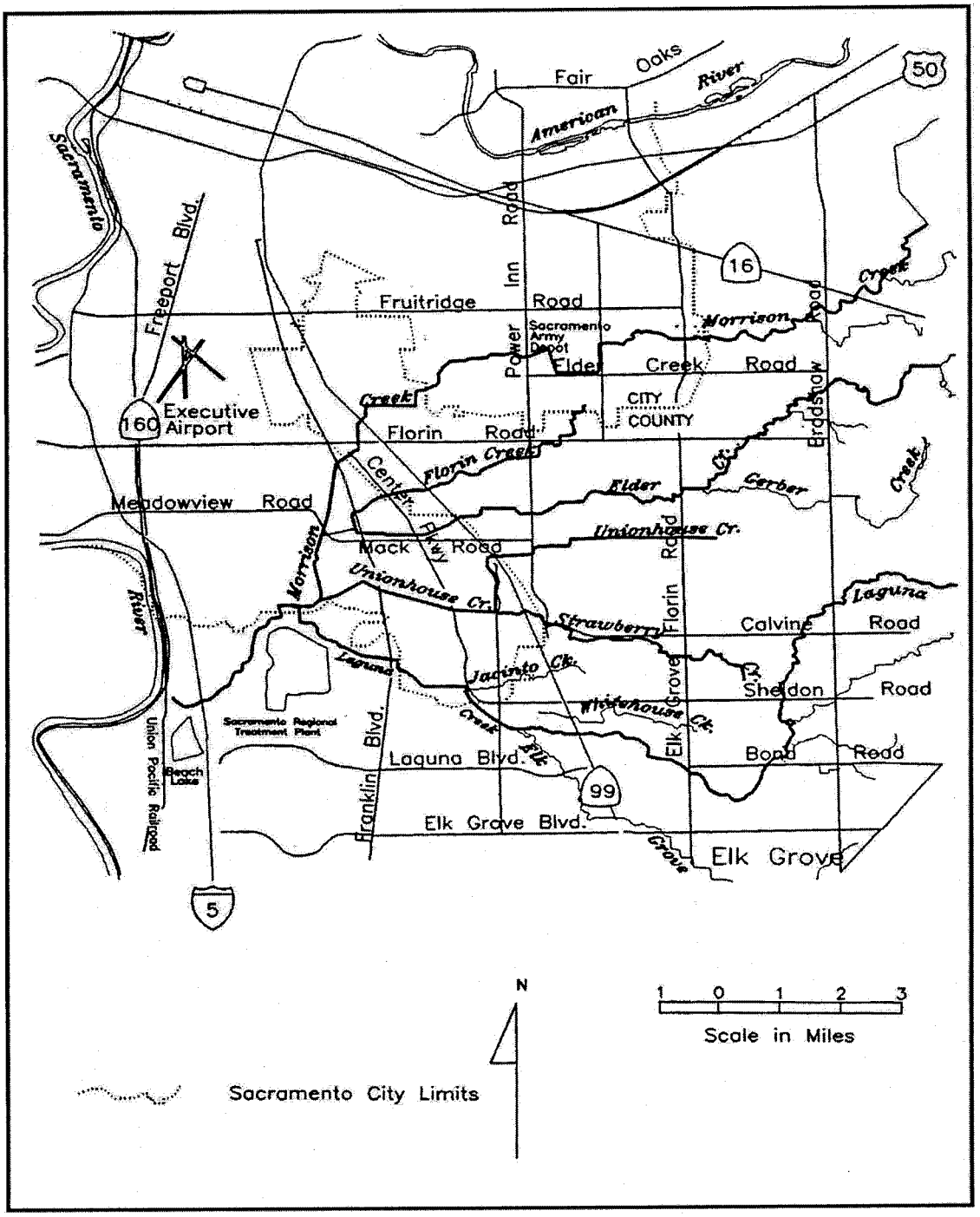

Figure 1. Study Area

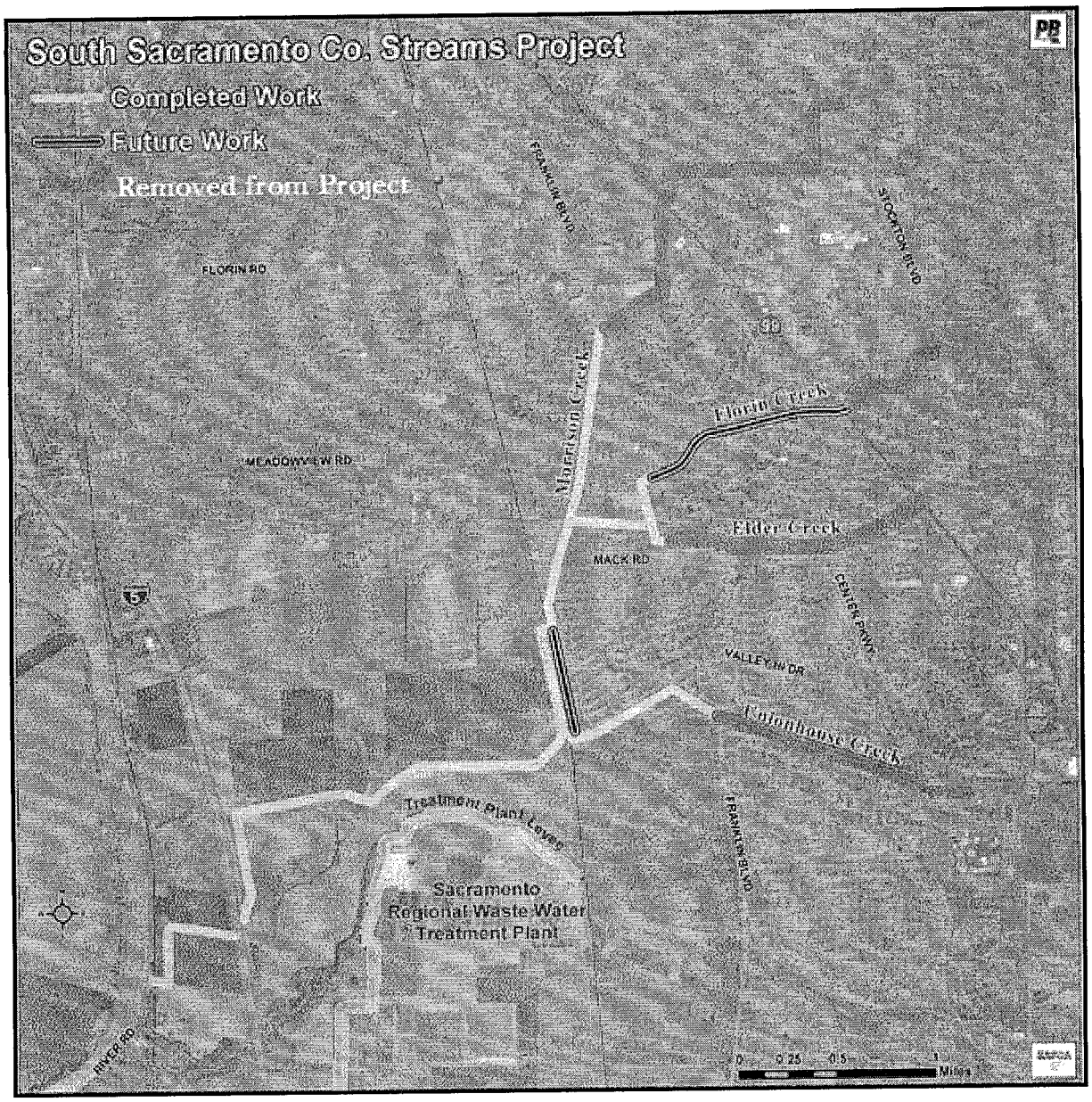

Figure 2. Status of Authorized Project

In 2001, it was decided to divide the PED phase of the project process into Phase I and Phase II. Phase I design covered the project features from the Sacramento River east to Franklin Boulevard. Phase II design would cover the remainder of the stream reaches up to Stockton Boulevard (or Highway 99 on Elder Creek and Center Parkway on Unionhouse Creek). Construction on Phase I would then be conducted during development of the Phase II design.

Review of the Phase I designs in August 2002 indicated that the hydraulic and hydrologic information used for the designs warranted updating. Subsequent reanalysis of the hydraulics and hydrology for the project in 2003 showed that the feasibility-level design in the Phase II portion of the project would not provide sufficient channel capacity (level of flood protection) to remove the Phase II area from Federal Emergency Management Agency (FEMA) flood insurance requirements. At the same time, it was determined that the Phase I design was more than adequate to meet FEMA flood protection requirements.

The reanalysis of the hydraulic design for the Phase II portion of the project was completed in December 2003. Based on this reanalysis, design refinements were proposed to the Phase II design in order to meet the minimum FEMA certifiable 100-year level of flood protection. These design refinements are located in the upper basin of the project area. There are no proposed design refinements in the lower basin.

A LRR was completed in 2004. The purpose was (1) to update economic, environmental, and other information so that decision makers can verify that the proposed design changes to the authorized South Sacramento Streams project remain consistent with its authority, (2) to show that the project continues to be economically justified, technically sound, and environmentally acceptable, and (3) to address deficiencies in the hydraulic engineering analysis in the feasibility study. Some of the authorized work was revised as part of the 2004 LRR which included channel deepening and widening in the upper basin. The 2004 LRR included the Florin Creek portion of the South Sacramento Streams Project.

An EA the South Sacramento County Streams Project Design Refinements was completed in December 2004. This EA (1) described the existing environmental resources in the project area as compared to the 1998 EIS/EIR, (2) evaluated the environmental effects of the proposed design refinements on those resources, and (3) if the effects were different from the potential effects in the 1998 Environmental Impact Statement/Environmental Impact Report, proposed mitigation measures to avoid, minimize, or reduce any adverse environmental effects to less-than-significant levels. This EA fulfilled the requirements of the National Environmental Policy Act (NEPA).

Information on environmental impacts can be found in the EIS/EIR (March 1998). Mitigation for threatened and endangered species was provided at banks and locations approved by the U.S. Fish and Wildlife and/or the California Department of Fish and Wildlife Fifty-nine Impacts to the Burrowing Owl have been fully mitigated for on County of Sacramento owned property managed by Stone Lakes National Wildlife Refuge. Vernal pool and Valley Elderberry Longhorn Beetle credits were purchased at Conservation Resources, LLC. Giant Garter Snake credits were purchased at Byte Ranch CB. Ecosystem restoration, a required mitigation, provided 215 acres of wildlife habitat including open water wetlands, riparian, and grassland cover on four sites in the Sacramento River Wastewater Treatment Plant (SRWTP) buffer lands. The restoration is maintained by SRWTP. The 2,500 acre Bufferland area surrounding the SRWTP provides opportunities to enhance and expand wetland, riparian vegetation, and other habitat. Prescribed buffer land Operation, Maintenance, Repair, Replacement, and Rehabilitation requirements are maintained by the Sacramento County and will ensure that the project facilities will function as designed.

In June 2005, construction of the North Beach Lake Levee (West of UPRR to Sacramento River) was initiated and completed in 2006. In July 2006, the Morrison Creek Levee Improvements (East of UPRR to Franklin Boulevard) was initiated. Completion of the final segment at the UPRR crossing is scheduled for early 2013. The Unionhouse Creek Levee Improvement was constructed by SAFCA this year and is not considered part of the South Sacramento Streams project.

An EA/IS was completed by the Corps in July 2011 for the lower reach of Morrison Creek along the UPRR known as Section 2A.

To date, most of the project downstream of Franklin Boulevard has been completed as shown in Figure 2.

The future work shown in Figure 2 is either ongoing or potentially scheduled for work by the local sponsor. The work along lower Morrison Creek is currently under construction as a Corps project. The work along Florin Creek up to Hwy. 99, the primary subject of this review plan, is a project being developed by the Corps. The sponsor has informally requested portions of the project be removed, which includes the work along Unionhouse Creek and the work along upper Morrison Creek, Elder Creek and Florin Creek above Hwy. 99. A PACR may be prepared to request that remaining unconstructed features of the authorized project be reclassified as "deferred" based on lack of required cooperation from the local sponsor.

The estimated current total project cost is $93 million. The cost to construct the Florin Creek improvements is approximately $4-6 million. Morrison Creek is included in the stated cost estimate of the Florin Creek improvements.

C. Project Scope and Work Products. As discussed in the previous section, the Corps will construct flood risk reduction features along Florin Creek between Franklin Blvd. and Hwy. 99. This project is currently in the design phase and is scheduled for construction in 2013. Following the 2004 LRR, additional investigations considering refined hydraulic analysis and risk analysis were conducted and reported in the 2009 Hydraulic Design Documentation Report (DDR). In November 2011, the City of Sacramento completed a thorough hydraulic model of the South Sacramento Streams project, which revealed that channel improvements of Florin Creek, considering off-site storage, is a preferred approach to the dual floodwall approach proposed in the 2009 Hydraulic DDR. The results of the City of Sacramento study and the 2009 Hydraulic DDR are being combined and analyzed by Wood Rodgers to determine the appropriate hydraulic modeling for the project. The revised modeling will be used for project design and development.

The improvements within this segment of Florin Creek between Franklin Boulevard and Highway 99 are expected to consist primarily of channel improvements to contain the predicted flood waters considering off-site storage facilities.

The 2004 Supplemental EA for the South Sacramento County Streams Project, Design Refinements, provides the environmental documentation for the Florin Creek project.

The products for review include a DDR, Plans and Specifications, an OMRR&R manual, an economic update, and a potential PACR to descope remaining authorized elements should they no longer be economically viable or no longer have non-federal sponsor support.

Design of the Florin Creek improvements will be completed by Pacific Civil & Structural Consultants (PCSC), a joint venture of MGE Engineering (MGE) and Wood Rodgers (WRI). PCSC will develop design drawings, specifications, design documentation report (DDR) cost estimates and preparation of an Engineering Considerations and Instructions for Field Personnel document (ECIFP). The USACE 2009 Hydraulic DDR is being updated with new information for analyses. Cost estimating will be completed by a sub consultant Mr. Albert Meyer. This work will complete the final design of the project and includes the following specific tasks:

1. Surveying;
2. Utility and Field Data Collection;
3. Potholing;
4. Development of final construction plans and specifications;
5. Preparation of a Design Documentation Report;
6. Preparation of a Engineering Considerations and Instructions for Field Personnel document; and;
7. Cost estimating

The economic update may only economically justify completion of only select portions of the South Sacramento County Streams project. During or following the economic update it will be determined if a PACR is warranted for project close out. This document will address the requirements of ER 1105-2-100, Appendix G, paragraph G-16 for PACR. It will present the residual risk and the changes between the authorized project and what will actually be constructed. If a PACR is necessary it will be approved by the SPD Commander and will not require Congressional reauthorization.

The local sponsor is not expected to provide any in-kind contributions.

3. SCOPE OF REVIEW.

The scope of this RP is for the review of a DDR, Plans and Specifications, an OMRR&R, economic update, and a potential PACR. An Environmental Assessment/Initial Study (EA/IS) for the Florin Creek project is not required at this time.

Pacific Civil & Structural Consultants quality control plan consists of multiple reviews of all contract documents by the engineers supervising the work, as well as "Independent Quality Control Review". PCSC's documents will then undergo a quality assurance review by Sacramento District.

A. DISTRICT QUALITY CONTROL/QUALITY ASSURANCE

All work products, reports, evaluations and assessments shall undergo necessary and appropriate DQC/DQA. This review is managed by the home district in accordance with the Major Subordinate Command (MSC) and district Quality Management Plans and includes seamless quality checks and reviews, supervisory reviews, PDT including input from the Local Sponsor. To ensure specific discipline efforts are on target with regard to compliance with policy and criteria and an acceptable level of quality, sub-products will be technically coordinated and reviewed before they are integrated into the overall project.

The design contractor, PCSC, is responsible for quality control of its own products and will include review by personnel not involved with development of the product. A Quality Assurance review will be conducted on the contractor's products by Sacramento District.

1. General. DQC for decision and implementation documents covered by EC 1165-2-214 is managed by the home district in accordance with the MSC and district Quality Management Plans. All draft products will be reviewed within the district as they are developed by the PDT to ensure they meet project and customer objectives, comply with regulatory and engineering guidance, and meet customer expectations of quality. Work products will be forwarded to the appropriate Branch Chiefs of disciplines directly involved with the development of the document. The Branch Chiefs will determine the most appropriate person to carry out the review of the document.

2. Products for Review. All work products and reports, evaluations, and assessments shall undergo necessary and appropriate DQC/DQA, including NEPA documents. 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.

3. Documentation of DQC. Relevant DQC's records will be documented using Dr-Checks, to be done for reviewing during each ATR event and the ATR team will provide comments as to the adequacy of the DQC effort for implementation documents.

Issues of concern are identified early and throughout the iterative process with the Vertical Team engagement and appropriately timed and scoped review including District QC, MSC, QA, technical (including IEPR, where necessary) policy and legal reviews. Seamless feasibility studies depend on ensuring that all disciplines involved are resourced and that all current pertinent data for analysis is readily available.

4. Contractor DQC

Pacific Civil & Structural Consultant's (PCSC) quality control plan consists of multiple reviews of all contract documents by the engineers supervising the work, as well as an Independent Technical Review (ITR) performed by staff not directly involved in the design of the project under review. The supervising personnel responsible for internally reviewing the various design components are listed in the table below. In addition, the firms performing the ITR on each component are also indicated in the table below. Comments as a result of internal reviews will be discussed and resolved with the responsible designers. ITR comments will be documented by red-marked comments on the documents in addition to completing an ITR Comment/Response Log spreadsheet. After the designer reviews and responds to the ITR comments in writing within the same spreadsheet, the ITR reviewers will conduct a backcheck to ensure resolution of all comments.

Design Component	Design Firm	ITR Firm	QC/QA Supervising Reviewer
Civil	MGE	WRI	Steve Hawkins, P.E.
Structural	MGE	WRI	Robert Sennett, S.E.

Pacific Civil & Structural Consultants (PCSC) is a joint venture of MGE Engineering (MGE) and Wood Rodgers (WRI).

B. AGENCY TECHNICAL REVIEW

The RMO will determine the ATR review panel. For Planning documents, the FRM-PCX shall have an ATR role should a PACR document be prepared after the economic update. For the ATR of the Engineering documents, the RMC will review the Plans and Specifications.

1. General. In accordance with EC 1165-2-214, ATR is mandatory for all decision and implementation documents and is undertaken to "ensure the quality and credibility of the government's scientific information." ATR is an in-depth review, managed within USACE, and conducted by a qualified team outside of the home district that is not involved with the day-to-day production of the project/product.

Note that an RTR will be conducted for the economic update and it is analogous to the ATR as described herein except there will be no ATR manager or the use of Dr. Checks.

An ATR Manager from outside the home MSC shall be designated by the RMO for the ATR process. The proposed ATR Manager will have expertise in project planning for implementation documents and design/construction for decision documents. The ATR Manager is responsible for providing information necessary for setting up the review, communicating with the Study Manager and Technical Manager, providing a summary of critical review comments, collecting grammatical and editorial comments from the ATR team (ATRT), ensuring that the ATRT has adequate funding to perform the review, facilitating the resolution of the comments, and certifying that the ATR has been conducted and resolved in accordance with policy. ATR will be conducted for project planning, environmental compliance, economics, hydraulic design, civil design, geotechnical engineering and cost engineering.

At the conclusion of ATR, 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 organization affiliations, and include a short paragraph on both the credentials and relevant expertise of each reviewer;
- Include the charge to reviewer;
- Describe the nature of their review and their findings and conclusions;
- Identify and summarize each unresolved issues (if any); and
- Include a verbatim copy of each reviewers comments (either with or without specific attributions), or represent the views of the group as a whole, including any disparate and dissenting views.

2. The ATRT will be comprised of individuals that have not been involved in the development of the implementation and decision documents and will be chosen based on expertise, experience, and/or skills. The members will roughly mirror the composition of the PDT and wherever possible, reside outside of the South Pacific Division region. It is anticipated that the team will consist of about eight reviewers. The ATRT members have been identified at the time the review is conducted and will be presented in appendix.

B. General descriptions of ATR disciplines are as follows:

a. Hydrologic and Hydraulic Engineering: The team member should be a registered professional 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 can be used for this project. A certified flood plain manager is recommended but not required.

b. **Geotechnical Engineering:** The team member should be a registered professional engineer. Team member will be experienced in levee & floodwall design, post-construction evaluation, and rehabilitation.

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

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

e. **NEPA Compliance:** The team member should have experience in NEPA compliance activities and preparation of EA/EIS for Civil Works projects.

f. **Civil Engineering:** The team member should be a registered professional engineer. Team member will be experienced in levee & floodwall design, post-construction evaluation, and rehabilitation, earthwork operations, and construction phasing. 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

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

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

3. Review

a. ATRT responsibilities are as follows:

1. Reviewers shall review documentation to confirm that work was done in accordance with established professional principles, practices, codes, and criteria and for compliance with laws and policy

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

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

4. Review comments shall contain these principal elements:
   - a clear statement of the concern
   - the basis for the concern, such as law, policy, or guidance
   - significance for the concern
   - specific actions needed to resolve the comment

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

PDT Team responsibilities are as follows:

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

ATRT members shall discuss any "non-Concur" responses prior to submission with the PDT and ATRT Leader.

4. Resolution of Issues

a. Reviewers shall back check PDT responses to the review comments and either close the comment or attempt to resolve any disagreements. Conference calls shall be used to resolve any conflicting comments and responses. A "face-to-face" resolution of issues is encouraged between the PDT and reviewers.

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

5. Documentation. Generated comments shall be documented in DrChecks model review documentation database. DrChecks is a module in ProjNet suite of tools developed

and operated at ERDC-CERL. (www.Projnet.org). A clear audit trail shall be established.

Significant unresolved ATR concerns that are documented by the RMO will be forwarded through the MSC to the HQUSACE RIT, including basic research of USACE guidance and an expression of desired outcome, for further resolution in accordance with the policy issue resolution process described in either ER 1110-2-12 or Appendix H, ER 1105-2-100, as appropriate. HQUSACE may choose to defer the issue to the policy compliance review process or address it directly. At this point, the ATR documentation for the concern may be closed with a notation that the concern has been elevated for resolution by HQUSACE.

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

C. INDEPENDENT EXTERNAL PEER REVIEW

IEPR is divided into two types; Type I IEPR applies to decision documents, while Type II applies to implementation documents.

1. Type I IEPR. Type I IEPR is conducted on project decision documents. The need for the Type I IEPR for the Florin Creek project has been found to be not warranted. We have coordinated the decision regarding the Type I IEPR with the SPD FRM-PCX and they have concurred that the Type I IEPR is not warranted at this time. Should a PACR be prepared following the results of an economic update, further coordination will be conducted with the FRM-PCX to determine if a Type I IEPR is necessary. This is based on the facts that (1) the project is already authorized for construction, the decision document for that action being the 1998 feasibility report and (2) a potential PACR will not recommend construction but will recommend closeout and "deferral" of the remaining project features. A Type I IEPR will be conducted on the PACR as warranted. When the decision is made, the Review Plan will be updated and rerouted for approval.

2. Type II IEPR. Type II IEPR (also known as a Safety Assurance Review) shall be conducted for all projects addressing hurricane and storm risk management of flood risk management, or any other project where the Federal action is justified by life safety, or the failure of the project would pose a significant threat to human life. Factors to consider for conducting a Type II review of a project or components of a project are given in the following table.

Decision on Type II IEPR

EC 1165-2-214 Criteria	South Sacramento County Streams, Florin Creek Project
The project involves the use of innovative materials or techniques where the engineering is based on novel methods, presents complex challenges for interpretations, contains precedent-setting methods or models, or presents conclusions that are likely to change prevailing practices.	The project involves the use of standard construction methods for channel improvement. The engineering activities do not include any type of new, innovative materials or techniques where the engineering is based on novel methods, present complex challenges for interpretations, contain precedent-setting methods or models or present conclusions that are likely to change prevailing practices.
The project design requires redundancy, resiliency, and robustness a. Redundancy. Redundancy is the duplication of critical components of a system with the intention of increasing reliability of the system, usually in the case of a backup or failsafe. b. Resiliency. Resiliency is the ability to avoid, minimize, withstand, and recover from the effects of adversity, whether natural or manmade, under all circumstances of use. c. Robustness. Robustness is the ability of a system to continue to operate correctly across a wide range of operational conditions (the wider the range of conditions, the more robust the system), with minimal damage, alteration or loss of functionality, and to fail gracefully outside of that range.	The project design does require redundancy, resiliency, and robustness.
The project has unique construction sequencing or a reduced or overlapping design construction schedule; for example, significant project features accomplished using the Design-Build or Early Contractor Involvement delivery systems	The project does not include unique construction sequencing or a reduced or overlapping design construction schedule.

From the above discussion, it is concluded by the PDT that a Type II IEPR (SAR) is required for the plans and specifications.

The engineering division PDT members identified the necessary skill sets required for the SAR. The PDT has determined that three SAR team members will be required due to the scope of the designs. The selection of IEPR review panel members will be made up of independent, recognized experts from outside of the USACE in the appropriate disciplines. The team shall

consist of a geotechnical expert with experience in design and construction, structural engineer with experience in floodwalls, and either another geotechnical engineer or general civil engineer with significant experience with earthwork construction quality assurance and flood control projects. IDIQ contract with an AE firm will be utilized for SAR team The AE will select suitable reviewers according to the National Academy of Science policy which sets the standard for "independence" in the review process. The PDT determined that reviews conducted on the plans and specifications and design documentation report will be necessary.

According to guidance set forth in EC 1165-2-214, Appendix E, paragraph 5, it is expected that the SAR reviewers will review the plans and specifications and DDR prior to beginning construction and review construction activities at midpoint of construction and prior to final inspection.

The SAR team shall perform reviews in accordance with milestones identified in the Review Plan. The SAR is an extension (not a replacement) of the ATR requirements; however, the intent of the SAR is to complement the ATR and to avoid impacts to program schedules and cost. The SAR is a strategic level review and every effort should be made to avoid having the SAR duplicate the ATR.

Points of contact for the SAR include:

a. Sacramento District	Mr. Paul Hsia 916-557-6648
b. RMO (South Pacific Division)	Mr. Boni Bigornia 415-503-6567

Products for SAR Review. Products for review consist of Construction P & S and DDR.

Documentation of SAR Review: Type II IEPR comments and responses pertaining to the design and construction activities will be summarized in a review report to be reviewed and approved by the MSC and posted on the District website. The Sacramento District Chief of Engineering is responsible for coordinating with the RMO, for attending review meetings with the SAR review panel, communicating with the agency or contractor selecting panel members, and for coordinating the approval of the final report with the MSC Chief of Business Technical Division.

After receiving the report from the peer review panel, 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 District's responses shall be submitted to the MSC for final MSC Commander approval and the report and responses will be made available to the public on the District's website.

4. MODEL CERTIFICATION

The planning and engineering computational models anticipated to be employed have either been developed by or for the USACE. The HH&C CoP model being used is HEC-RAS. Model certification and approval for all identified engineering models will be coordinated through the RMC as needed. Planning models will be coordinated through the FRM-PCX. Models that are potentially to be used are:

Planning Models

Model Title and Use	Approved Status
HEC-FDA: This model, developed by the Corps' Hydrological Engineering Center, will assist the PDT in applying risk analysis methods for flood damage reduction studies as required by, EM 1110-2-1419. This program: • Provides a repository for both the economic and hydrologic data required for the analysis • Provides the tools needed to understand the results • Calculates the Expected Annual Damages and the Equivalent Annual Damages • Computes the Annual Exceedence Probability and the Conditional Non-Exceedence Probability • Implements the risk-based analysis procedures contained in EM 1110-2-1619 • Evaluates possible benefits of non-structural measures such as flood proofing by analyzing the relationships among flow (discharge), water-surface elevation, and flood frequency (probability) for the building site.	The current working version is HEC_FDA 1.2.5.
Various Habitat Evaluation Procedure (HEP) models. As habitat changes through time, either by natural or human-induced processes, we can quantify the overall suitability through time by integrating the areal extent-suitability product function over time. Thus, we can quantitatively compare two or more alternative management practices of an area with regards to those practices affecting species in that area. Furthermore, HEP allows us to quantify the effects of mitigation or compensation.	The Ecosystem Restoration Planning Center of Expertise (PCX) will need to certify or approve the HEP model used for the study. The PDT will coordinate with the Ecosystem PCX during the study for certification approval requirements.
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 on a range of decision variables.	This model has been certified.

Engineering Models

Model Title and Use	Approved Status
NAVD88 superseded NAVD29 existing vertical datum for Corps projects.	Approved
MCACES or MII: This is a cost estimating model that was developed by Building Systems Design Inc.	Approved
HEC-RAS: The function of this model is to complete one-dimensional hydraulic calculations for a full network of natural and manmade channels. HEC-RAS major capabilities are: • User interface • Hydraulic Analysis • Data storage and Management • Graphics and reporting	HHC&C CoP Preferred Model

5. PUBLIC REVIEW

The Sacramento District has worked closely with the Central Valley Flood Protection Board, SAFCA and the City and County of Sacramento on all aspects of the design of the project. Public concerns at the beginning of the feasibility study focused on increasing downstream flood protection, preserving natural channels, improving channel maintenance, and hydraulic effects in the lower basin and Sacramento-San Joaquin Delta. These issues were discussed with the non-Federal sponsor, other agencies, and local interests. The Corps considered these issues when identifying resources and evaluating the environmental effects of the alternatives. In October 1997, the draft EIS/EIR was released for public and agency review. Public hearings were held in October 1997.

The EA for the approved 2004 LRR has been found to be adequate NEPA documentation for the Florin Creek project. Therefore, no further public review will be conducted.

The approved Review Plan will be posted to the Sacramento District's public website http://www.spk.usace.army.mil/Media/USACEProjectPublicNotices.aspx. Any public comments on the Review Plan will be collected by the Corps' Office of Water Project Review and provided to the Sacramento District for resolution and incorporation if needed.

6. CONDUCT OF REVIEW

A. Project Delivery Team

The PDT is comprised of those individuals directly involved in the development of the decision document. Individual contact information and disciplines are presented in appendix B.

B. Vertical Team

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

C. Review Management Organization

The management of a review effort is a critical factor in assuring the level of independence of the review effort and is a critical factor in assuring the level independence of the review, as required by law, USACE policy, or both. With the exception of District Quality Control/Quality Assurance, all reviews shall be managed by an office outside the home district and shall be accomplished by professionals that are not associated with the work that is being reviewed. The USACE organization managing a particular review effort is designated the RMO for that effort. The RMO is the South Pacific Division, as represented by the District Support Team (DST) for the Sacramento District, until such time that the RMC is sufficiently staffed-up.

D. Review Plan Points of Contact

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

1. District Study Planner (PACR) — Ms. Karin Lee
2. District Technical Manager (Implementation/SAR) — Mr. Paul Hsia
3. District Environmental Manager — Mr. Mario Parker
4. District Chief, Engineering Div — Mr. Rick Poeppelman
5. Project Manager — Mr. Marshall Marik
6. MSC/RMO Point of Contact: — Ms. Karen Berresford
7. FRM-PCX Point of Contact: — Mr. Eric Thaut, PCX Manager

Review Plan Points of Contact			
District Study Planner (Economic Update and Potential PACR)	Karin Lee	916-557-7987	Karin.Lee@usace.army.mil
District Environmental Manager	Mario Parker	916-557- 6701	Mario.G.Parker@usace.army.mil
District Chief, Engineering Div	Rick Poeppelman	916-557-7301	Rick.L.Poeppelman@usace.army.mil
Project Manager	Marshall Marik	916-557-7698	Marshall.A.Marik@usace.army.mil
MSC/RMO Point of Contact:	Karen Berresford	415-503-6557	Karen.G.Berresford@usace.army.mil
FRM-PCX Point of Contact:	Eric Thaut, PCX Manager	415-503-6852	Eric.W.Thaut@usace.army.mil

7. Value Engineering Study.

A VE study has been conducted after the 65% plans and specifications review in March 2013.

The Value Engineering team performed a Value Engineering Study on the Florin Creek portion of the South Sacramento County Streams project. The team executed the following:

- Identified, evaluated, and classified project alternatives and functions.
- Developed a FAST (Function Analysis Systems Technique) diagram based on the classification and evaluation of each function.
- Proposed remedial alternatives for each function.
- Evaluated the plausibility of each proposal and selected the most viable proposals for submittal.
- Provided documentation for alternative on original design and VE proposals, cot comparison, savings and justifications for the selected proposals.

The Value Engineering Team identified 5 proposals which have been accepted:

- Detention basins (upstream and in project area)
- Reduce channel friction by replacing erosion control seeding w/shotcrete/concrete
- Establish a project flow capacity
- Raise the banks between Persimmon Ave. and La Mancha Way
- Leave Trees in Place

8. APPROVALS

The PDT will carry out the Review Plan as described. The Study or Technical manager will submit the Review Plan to the RMO. Engineering documents will be submitted to the RMC and Planning documents submitted to SPD for review and recommendation for approval respectively. After the RMO review and recommendation, the PDT District Planning and Engineering Chief's will forward the Review Plan to the MSC for commander approval. Formal coordination with the RMO will occur through the PDT District Planning Division Chief and the District Engineering Division Chief. The Review Plan is a "living document" and shall be updated as needed. The RMO shall be provided an electronic copy of any revised approved Review Plan. The PDT shall follow their DST's guidance for processing revised Review Plans.

9. FUNDING & SCHEDULE

A. Funding

1. The District PDT shall provide labor funding by cross charge labor codes. The Project Manager will work with the ATR manager 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.
2. The team leader shall provide organization codes for each team members and a responsible financial point of contact (CEFMS responsible employee) for creation of labor codes.
3. Reviewers shall monitor individual labor code balances and alert the Project Manager to any possible funding shortages.

B. Schedule and Cost

1. Throughout the development of the documents, the team will conduct seamless review to ensure USACE high standards of quality control.

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

3. An ATR will be conducted on all documents (RTR will be conducted on the economic update).

4. The overall review process known at this time will follow approximate timeline and have the potential costs as indicated in the following table. Actual dates will be scheduled once the period draws closer. All products produced for these milestones will be reviewed, including those produced by contractors.

5. The proposed schedule and estimated costs of the reviews are shown in the table below.

Proposed Review Schedule and Estimated Costs

Title and Activity	Date	Cost in $'s
Geotechnical Studies		
Accident Prevention Plan DQC	Aug 2012	5,000
ATR	Aug 2012	8,000
Draft Geotechnical Appendix to the DDR DQC	Oct 2012	5,000
ATR	Oct 2012	8,000
Geotechnical Data Submittal DQC	Dec 2012	5,000
ATR	Dec 2012	8,000
Final Geotechnical Appendix to the DDR DQC	Dec 2012	5,000
ATR	Dec 2012	8,000
IEPR	Dec 2012	20,000
Hydraulic Modeling Studies		
Revise Existing Conditions Model & Floodplains DQC	Apr 2013	5,000
ATR	Apr 2013	8,000
Revise Future Conditions Model & Floodplains DQC	Sep 2013	5,000
ATR	Sep 2013	
Final Floodplain Report IEPR	Sep 2013	20,000
Cost Engineering		
MCACES Cost Estimate DQC		
ATR		
IEPR		20,000
Design Studies		
35% P&S DQC	Mar 2013	10,000
65% P&S DQC	Mar 2013	10,000
ATR	May 2013	15,000
P&S SAR	June 2013	30,000

Value Engineering Study	May 2013	20,000
90% P&S DQC	June2013	10,000
ATR	June2013	15,000
P&S (BCOES)	June2013	5,000
100% P&S DQC	Aug 2013	10,000
ATR	Aug 2013	8,000
Draft O&M Manual DQC	Aug 2013	10,000
ATR	Aug 2013	
IEPR	Sep 2013	
Economic Update		
Economic Appendix DQC	Oct 2013	5,000
RTR	Oct 2013	8,000
Planning Studies		
PACR DQC	Nov 2013	5,000
ATR	Nov 2013	10,000
IEPR	Nov 2013	10,000
Total DQC (Complete Design Review)		$90,000
Total ATR (Complete Design Review)Total DQC (Complete Design)		$78,000$90,000
Total IEPR Engineering -Design and Construction (SAR)Total ATR		$82,000$78,000
Total IEPR Engineering -Design and Construction (SAR)		$82,000

APPENDICES

APPENDIX A

REVIEW DOCUMENTATION FORMS

SOUTH SACRAMENTO COUNTY STREAMS, FLORIN CREEK, CALIFORNIA

COMPLETION OF DISTRICT QUALITY CONTROL

JOINT REVIEW PLAN

COMPLETION OF QUALITY CONTROL ACTIVITIES. The District has completed the District Quality Control (DQC) for a Joint Review Plan in compliance with EC-1165-2-214 for the South Sacramento County Streams, Florin Creek, California Project. This Review Plan documents planned quality control activities on implementation and decision documents in compliance with the requirements of EC-1165-2-214 and inherent with the risk and complexity of the project. Certification is hereby given that all DQC activities associated with development of the Review Plan have been completed.

Engineering Technical Reviewer, Paul Hsia	Date
Project Manager, Marshall Marik	Date
Engineering Design Section B Chief, Rick Torbik	Date
Engineering Design Branch Chief, Eric Nagy	Date
Planning Technical Reviewer, Melissa Hallas	Date
Flood Risk Reduction Section Chief, Michael L. Dietl	Date
Water Resources Branch Chief, Mark Cowan	Date

SOUTH SACRAMENTO COUNTY STREAMS, FLORIN CREEK, CALIFORNIA

COMPLETION OF DISTRICT QUALITY CONTROL

POST-AUTHORIZATION CHANGE REPORT AND ECONOMICS APPENDIX

COMPLETION OF QUALITY CONTROL ACTIVITIES. The District has completed the DQC Review in compliance with EC-1165-2-214 for the South Sacramento County Streams, Florin Creek, California Project. Certification is hereby given that all quality control activities, appropriate to the level of risk and complexity inherent in the project, associated with project development and District Quality Control (DQC), as defined in the Quality Control Plan and Review Plan (RP), have been completed.

GENERAL FINDINGS. Compliance with established policy, principles and procedures, utilizing justified and valid assumptions, was verified. This included review of assumptions; methods, procedures and materials used in analyses; alternatives evaluated; the appropriateness of data used and level of data obtained; and the reasonableness of the results, including whether the project meets the customer's needs consistent with law and existing Corps policy. Documentation of the quality control process is contained in the project file.

DQC Lead, Melissa Hallas	Date
Project Manager, Marshall Marik	Date
Section Chief, Michael Dietl	Date
Branch Chief, Mark Cowan	Date

SOUTH SACRAMENTO COUNTY STREAMS, FLORIN CALIFORNIA

PLANNING POST-AUTHORIZATION CHANGE REPORT

COMPLETION OF AGENCY TECHNICAL REVIEW

The Agency Technical Review (ATR) has been completed for the South Sacramento County Streams, Florin Creek, California Project Post-Authorization Documentation Report. 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 DrChecks[sm].

SIGNATURE _____ Date _____

Name
ATR Team Leader
Office Symbol/Company

SIGNATURE _____ Date _____

Marshall Marik
Project Manager
CESPK-PM-C

_____ _____

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 _____ Date _____

Rick Poeppelman
Chief, Engineering Division
CESPK-ED

SIGNATURE _____ Date _____

Alicia E. Kirchner
Chief, Planning Division
CESPK-PD

SOUTH SACRAMENTO COUNTY STREAMS, FLORIN CREEK, CALIFORNIA

ENGINEERING, DESIGN AND COST STUDIES

COMPLETION OF AGENCY TECHNICAL REVIEW

The Agency Technical Review (ATR) has been completed for the Engineering, Design and Cost Studies for the South Sacramento County Streams, Florin Creek, California Project. 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 DrChecks[sm].

SIGNATURE _____ Date _____

ATR Team Leader
CENWP-EC-DC

SIGNATURE _____ Date _____

Marshall Marik
Project Manager
CESPK-PM-C

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 _____ Date _____

Rick Poeppelman
Chief, Engineering Division
CESPK-ED

SIGNATURE _____ Date _____

Alicia E. Kirchner
Chief, Planning Division
CESPK-PD

APPENDIX B

TEAMS

APPENDIX C

REVIEW PLAN CHECKLIST
FOR IMPLEMENTATION DOCUMENTS

Date: NOVEMBER 2012
Originating District: SACRAMENTO DISTRICT
Project/Study Title: SOUTH SACRAMENTO COUNTY STREAMS, SACRAMENTO, CALIFORNIA
PWI #:
District POC: Mr. Paul Hsia
PCX Reviewer:

Please fill out this checklist and submit with the draft Review Plan when coordinating with the appropriate RMO. For DQC, the District is the RMO; for ATR of Dam and Levee Safety Studies, the Risk Management Center is the RMO; and for non-Dam and Levee Safety projects and other work products, SPD is the RMO; for Type II IEPR, the Risk Management Center is the RMO. Any evaluation boxes checked 'No' indicate the RP possibly may not comply with EC 1165-2-214 and should be explained. Additional coordination and issue resolution may be required prior to MSC approval of the Review Plan.

REQUIREMENT	REFERENCE	EVALUATION
1. Is the Review Plan (RP) a stand alone document?	EC 1165-2-214, Appendix B Para 4a	Yes ☒ No ☐
a. Does it include a cover page identifying it as a RP and listing the project/study title, originating district or office, and date of the plan?		a. Yes ☒ No ☐
b. Does it include a table of contents?		b. Yes ☒ No ☐
c. Is the purpose of the RP clearly stated and EC 1165-2-214 referenced?	EC 1165-2-214 Para 7a	c. Yes ☒ No ☐
d. Does it reference the Project Management Plan (PMP) of which the RP is a component including P2 Project #?	EC 1165-2-214 Para 7a (2)	d. Yes ☒ No ☐
e. Does it include a paragraph stating the title, subject, and purpose of the work product to be reviewed?	EC 1165-2-214 Appendix B Para 4a	e. Yes ☒ No ☐
f. Does it list the names and disciplines in the home district, MSC and RMO to whom inquiries about the plan may be directed?*	EC 1165-2-214, Appendix B, Para 4a	f. Yes ☒ No ☐

**Note: It is highly recommended to put all team member names and contact information in an appendix for easy updating as team members change or the RP is updated.*		
2. Documentation of risk-informed decisions on which levels of review are appropriate.	EC 1165-2-214, Appendix B, Para 4b	Yes ☒ No ☐
a. Does it succinctly describe the three levels of peer review: District Quality Control (DQC), Agency Technical Review (ATR), and Independent External Peer Review (IEPR)?	EC 1165-2-214 7a	a. Yes ☒ No ☐
b. Does it contain a summary of the CW implementation products required?	EC1165-2-214 Para 15	b. Yes ☒ No ☐
c. DQC is always required. The RP will need to address the following questions:	EC1165-2-214 Para 15a	
i. Does it state that DQC will be managed by the home district in accordance with the Major Subordinate Command (MSC) and district Quality Management Plans?	EC1165-2-214 Para 8a	i. Yes ☒ No ☐
ii. Does it list the DQC activities (for example, 30, 60, 90, BCOE reviews, etc)	EC 1165-2-214 Appendix B (1)	ii. Yes ☒ No ☐
iii. Does it list the review teams who will perform the DQC activities?	EC 1165-2-214 Appendix B 4g	iii. Yes ☒ No ☐
iv. Does it provide tasks and related resource, funding and schedule showing when the DQC activities will be performed?	EC 1165-2-214 Appendix B Para 4c	iv. Yes ☒ No ☐
d. Does it assume an ATR is required and if an ATR is not required does it provide a risk based decision of why it is not required? If an ATR is required the RP will need to address the following questions:	EC1165-2-214 Para 15a	d. Yes ☒ No ☐
i. Does it identify the ATR District, MSC, and RMO points of contact?	EC 1165-2-214 Para 7a	i. Yes ☒ No ☐
	EC 1165-2-214	ii. Yes ☒ No ☐

ii. Does it identify the ATR lead from outside the home MSC?	Para 9c EC 1165-2-214 Appendix B 4g	iii. Yes ☒ No ☐
iii. Does it provide a succinct description of the primary disciplines or expertise needed for the review (not simply a list of disciplines)? If the reviewers are listed by name, does the RP describe the qualifications and years of relevant experience of the ATR team members?*	EC 1165-2-214 Appendix C Para 3e	iv. Yes ☒ No ☐
iv. Does it provide tasks and related resource, funding and schedule showing when the ATR activities will be performed?	EC 1165-2-214 Para 7d (1)	v. Yes ☒ No ☐
v. Does the RP address the requirement to document ATR comments using Dr Checks?		
**Note: It is highly recommended to put all team member names and contact information in an appendix for easy updating as team members change or the RP is updated.*	EC1165-2-214 Para 15a	e. Yes ☒ No ☐
e. Does it assume a Type II IEPR is required and if a Type II IEPR is not required does it provide a risk based decision of why it is not required including RMC/ MSC concurrence? If a Type II IEPR is required the RP will need to address the following questions:	EC 1165-2-214 Para 7a	i. Yes ☒ No ☐
i. Does it provide a defensible rationale for the decision on Type II IEPR?	EC 1165-2-214 Appendix B Para 4a	ii. Yes ☒No ☐
ii. Does it identify the Type II IEPR District, MSC, and RMO points of contact?	EC 1165-2-214 Appendix B Para 4k (4)	iii. Yes ☒ No ☐
iii. Does it state that for a Type II IEPR, it will be contracted with an A/E contractor or arranged with another government agency to manage external to the Corps of Engineers?	EC 1165-2-214 Appendix B, Para 4k(1) & Appendix E, Para's 1a & 7	iv. Yes ☒ No ☐
iv. Does it state for a Type II IEPR, that the selection of IEPR review panel members will be made up of		

independent, recognized experts from outside of the USACE in the appropriate disciplines, representing a balance of expertise suitable for the review being conducted?	EC 1165-2-214 Para 6b (4) and Para 10b	v. Yes ☒ No ☐
v. Does it state for a Type II IEPR, that the selection of IEPR review panel members will be selected using the National Academy of Science (NAS) Policy which sets the standard for "independence" in the review process?	EC1165-2-214 Appendix E, Para 7c(1)	vi. Yes ☒ No ☐
vi. If the Type II IEPR panel is established by USACE, has local (i.e. District) counsel reviewed the Type II IEPR execution for FACA requirements?	EC1165-2-214 Appendix E, Para 5a EC1165-2-214 Appendix E Para 2	vii. Yes ☒ No ☐ viii Yes ☒ No ☐
vii. Does it provide tasks and related resource, funding and schedule showing when the Type II IEPR activities will be performed?		
viii. Does the project address hurricane and storm risk management or flood risk management or any other aspects where Federal action is justified by life safety or significant threat to human life?		ix Yes ☒ No ☐
Is it likely? Yes ☒ No ☐ *If yes, Type II IEPR must be addressed.*		
ix. Does the RP address Type II IEPR factors?		
Factors to be considered include:		
• Does the project involve the use of innovative materials or techniques where the engineering is based on novel methods, presents complex challenges for interpretations, contains precedent setting methods or models, or presents conclusions that are likely to change prevailing practices?		
• Does the project design require redundancy, resiliency and robustness		

• Does the project have unique construction sequencing or a reduced or overlapping design construction schedule; for example, significant project features accomplished using the Design-Build or Early Contractor Involvement (ECI) delivery systems. *Is it likely? Yes ☒ No ☐* *If yes, Type II IEPR must be addressed.* g. Does it address policy compliance and legal review? If no, does it provide a risk based decision of why it is not required?	EC 1165-2-214, Para 14	g. Yes ☒ No ☐
3. Does the RP present the tasks, timing, and sequence of the reviews (including deferrals)?	EC 1165-2-214, Appendix B, Para 4c	Yes ☒ No ☐
a. Does it provide and overall review schedule that shows timing and sequence of all reviews? b. Does the review plan establish a milestone schedule aligned with the critical features of the project design and construction	EC 1165-2-214, Appendix C, Para 3g EC 1165-2-214, Appendix E, Para 6c	a. Yes ☒ No ☐ b. Yes ☒ No ☐
4. Does the RP address engineering model certification requirements?	EC 1165-2-214, Appendix B, Para 4i	Yes ☒ No ☐
a. Does it list the models and data anticipated to be used in developing recommendations? b. Does it indicate the certification /approval status of those models and if certification or approval of any model(s) will be needed? c. If needed, does the RP propose the appropriate level of certification??? /approval for the model(s) and how it		a. Yes ☒ No ☐ b. Yes ☒ No ☐ c. Yes ☒ No ☐

will be accomplished?		
5. Does the RP explain how and when there will be opportunities for the public to comment on the study or project to be reviewed?	EC 1165-2-214, Appendix B, Para 4d	Yes ☒ No ☐
a. Does it discuss posting the RP on the District website? b. Does it indicate the web address, and schedule and duration of the posting?		a. Yes ☒ No ☐ b. Yes ☒ No ☐
6. Does the RP explain when significant and relevant public comments will be provided to the reviewers before they conduct their review?	EC 1165-2-214, Appendix B, Para 4e	Yes ☐ No ☐ Not applicable for Engineering Design but only for the EIS.
a. Does it discuss the schedule of receiving public comments? b. Does it discuss the schedule of when significant comments will be provided to the reviewers?		a. Yes ☐ No ☒ Not applicable for Engineering Design but only for the EIS previously reviewed. b. Yes ☐ No ☒ previously reviewed and comments were completed. No significant comments are expected for Engineering. Update will incorporate EC -1165-2-214.
7. Does the RP address whether the public, including scientific or professional societies, will be asked to nominate professional reviewers?*	EC 1165-2-214, Appendix B, Para 4h	Yes ☐ No ☐
a. If the public is asked to nominate professional reviewers then does the RP provide a description of the requirements and answer who, what, when, where, and how questions?		a. Yes ☐ No ☐

* Typically the public will not be asked to nominate potential reviewers		
8. Does the RP address expected in-kind contributions to be provided by the sponsor?	EC 1165-2-214, Appendix B, Para 4j	Yes ☒ No ☐
a. If expected in-kind contributions are to be provided by the sponsor, does the RP list the expected in-kind contributions to be provided by the sponsor?		a. Yes ☒ No ☐
9. Does the RP explain how the reviews will be documented?		Yes ☒ No ☐
a. Does the RP address the requirement to document ATR comments using Dr Checks and Type II IEPR published comments and responses pertaining to the design and construction activities summarized in a report reviewed and approved by the MSC and posted on the home district website?	EC 1165-2-214, Para 7d	a. Yes ☒ No ☐
b. Does the RP explain how the Type II IEPR will be documented in a Review Report?	EC 1165-2-214 Appendix B Para 4k (14)	b. Yes ☒ No ☐
c. Does the RP document how written responses to the Type II IEPR Review Report will be prepared?	EC 1165-2-214 Appendix B Para 4k (14)	c. Yes ☒ No ☐
d. Does the RP detail how the district/PCX/MSC and CECW-CP will disseminate the final Type II IEPR Review Report, USACE response, and all other materials related to the Type II IEPR on the internet?	EC 1165-2-214 Appendix B Para 5	d. Yes ☒ No ☐
10. Has the approval memorandum been prepared and does it accompany the RP?	EC 1165-2-214, Appendix B, Para 7	Yes ☒ No ☐

APPENDIX D

CESPD SUPPLEMENTAL REVIEW PLAN CHECKLIST

Review Plan: SOUTH SACRAMENTO COUNTY STREAMS, FLORIN CREEK, CALIFORNIA

Date of review:

Reviewed by:

References: CESPD R 1110-1-8, Appendix C, Planning; EC 1165-2-214, Civil Works Review Policy

Note: Any "No" answer requires explanation in the comment field.

	Item	Yes	No	Comment
1	Is there a Technical Review Strategy Session identified early in the study process? (See Appendix C paragraph 8.2,)	☐	☒	Project is past the TRSS stage,
2	Are potential Continuing Authority Program (CAP) "spinoffs" identified, along with the appropriate QCP identified for them?	☐	☒	No possible CAP spinoffs.
3	Are the review costs identified?	☒	☐	
	For District Quality Control (DQC)?	☒	☐	
	ATR?	☒	☐	
	Independent External Peer Review (IEPR)?	☒	☐	
4	Does the RP identify seamless DQC technical review (8.4), including supervisory oversight of the technical products? (See Appendix C paragraph 8.5)	☒	☐	
5	Does the RP identify the recommended review comment content and structure? (See Appendix C paragraph 8.5.4)	☒	☐	
6	Does the RP encourage face-to-face resolution of issues between the PDT and reviewers? (See Appendix C paragraph 8.5.5)	☒	☐	
7	If issues remain, does the RP must identify an appropriate dispute resolution process? (See Appendix C paragraph 8.6)	☒	☐	
8	Does the RP require documentation of all significant decisions, and leave a clear audit trail? (See Appendix C paragraph 8.5.6)	☒	☐	
9	Does the RP identify all requirements for technical certifications? (See Appendix C paragraph 8.5.7)	☒	☐	
10	Does the RP identify the requirement that without-project hydrology will be certified by the Feasibility Scoping Meeting? (See Appendix C paragraph 8.5.8)	☐	☒	No, this RP is for the implementation phase.
11	Does the RP fully address products developed by contractors? (See Appendix C paragraph 8.10)	☒	☐	
12	Is the need for a VE study identified, and incorporated into the review process, after the feasibility scoping meeting? (See Appendix C paragraph 8.11)	☒	☐	
13	Does the RP include a Feasibility Alternative Review Milestone, where CESPD buy-in to the recommended	☐	☒	No, this RP is for the implementation phase.

	Item	Yes	No	Comment
	plan is obtained? (See Appendix C paragraph 12.1)			
14	Does the RP identify the final public meeting milestone? (See Appendix C, Enclosure 1, SPD Milestones)	☐	☒	No, this RP is for the implementation phase.
15	Does the RP identify the report approval process, and if there is a delegated approval authority?	☒	☐	
16	Does the RP reference CESPD milestones, along with PGN milestones?	☒	☐	

Revised 10May10

APPENDIX E

CONCURRENCES

Concurrences

Project Manager _____

Date:_____

District Planning and Policy CoP Leader _____

Date:_____

District Counsel _____

Date:_____

DDE (PM) _____

Date:_____

MSC Planning and Policy CoP Leader _____

Date:_____

MSC Counsel _____

Date:_____

APPENDIX F

GLOSSARY of Acronyms and Abbreviations

A-E	Architect – Engineer
ASA(CW)	Assistant Secretary of the Army for Civil Works
ATR	Agency Technical Review
BA	Biological Assessment
CES	Cost Engineering Section
CEQA	California Environmental Quality Act
CESPK	United States Army Corps of Engineers, Sacramento District
CFS	Cubic Feet per Second
CVFCP	Central Valley Flood Control Project
CVFPB	State of California, Central Valley Flood Protection Board
DQC	District Quality Control
DQR	Data Quality Report
DWR	State of California, Department of Water Resources
CX	Corps of Engineers, Center of Expertise
EA	Environmental Assessment
EC	Engineering Circular
EDR	Engineering Document Report
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EM	Engineer Manual
EO	Executive Order
ER	Engineering Regulation
ESA	Endangered Species Act
FCSA	Feasibility Cost-Sharing Agreement
FDR	Flood Damage Reduction
FEMA	United States Federal Emergency Management Agency
FRM-PCX	Flood Risk Management Planning Center of Expertise
GIS	Geographical Information System
GRR	General Reevaluation Report
HH&C	Hydrologic, Hydraulic Consequence
IEPR	Independent External Peer Review
ITR	Independent Technical Review
IWG	Interagency Working Group
IWM	In-Stream Woody Material
LERRDS	Land Easements Relocations Right of Way and Disposal Sites
LF	Linear Feet
MSC	Major Subordinate Command
NED	National Economic Development

NER	National Ecosystem Restoration
NEPA	National Environmental Policy Act
NOAA	U.S. National Oceanic & Atmospheric Administration
O&M	Operation and maintenance
OMB	U.S. Office and Management and Budget
OMRR&R	Operation, Maintenance, Repair, Replacement and Rehabilitation
OEO	Outside Eligible Organization
PAC	Post Authorization Change
PADD	Post Authorization Decision Document
PAPSS	Post Authorization Plan of Study & Strategy
PCA	Project Cooperation Agreement
PDT	Project Delivery Team
PL	Public Law
PM	Project Manager
PMP	Project Management Plan
PPA	Project Partnership Agreement
PRP	Peer Review Plan
QA/QC	Quality Assurance / Quality Control
QMP	Quality Management Plan
RD	Reclamation District
REP	Real Estate Plan
RP	Review Plan
RED	Regional Economic Development
RM	River Mile
SACCR	Schedule & Cost Change Request
SAM	Standard Assessment Methodology
SOS	Scope of Services
SOW	Scope of Work
SPD	South Pacific Division
SRBPP	Sacramento River Bank Protection Project
SRFCP	Sacramento River Flood Control Project
TRSS	Technical Review Strategy Session
USFWS	United States Fish & Wildlife Service
VE	Value Engineering
WRCB	Water Resources Control Board
WRDA	Water Resources Development Act

APPENDIX G

REVIEW PLAN DQC COMMENTS

8 August SPD ATR Comments – Backcheck on South Sacramento Streams Review Plan

Comment: 1. In Sec 1.A, please revise the list of 'related project documents' to include the O&M Manual and PACR (per Sec 2.C. for this draft RP).

Response: The list of "related project documents" has been revised as follows: "The related project documents consist of a Design Documentation Report (DDR), Plans and Specifications, an OMRR&R manual, and a PACR."

Comment: 2. In Sec 1.B, please revise the list of review approaches to include BCOES and Policy & Legal Review, per Sec 7 of EC 1165-2-214.

Response: The list of review approaches has been revised to include BCOES and Legal and Policy Review, per Sec 7 of EC 1165-2-214.

Comment: 3. In Sec 1.D, please revise the text to indicate that the RMO is the RMC, per EC 1165-2-214, App E, Sec 1.b. " The default RMO for flood risk management projects and Type II reviews is the Risk Management Center (RMC). If the RMC and MSC agree that a Type II review does not need to be conducted, the MSC may assume RMO responsibilities for the implementation phase. Any such transfer of responsibility should be mutually agreed upon and mindful of all remaining phases of the project." Please send the draft review plan to the RMC to request their involvement. Please note that the QMS process identifies this coordination step prior to MSC review/ approval (Sec 7.3.1 in QMS link below):

https://kme.usace.army.mil/CE/QMS/Lists/QMSDocumentLibrary/Division

Response: Sec 1.D., has been revised to indicate the following: "The RMO is the RMC, per EC 1165-2-214, App E, Sec 1.b." "If the RMC and MSC agree that a Type II review does not need to be conducted, the MSC may assume RMO responsibilities for the implementation phase. Any such transfer of responsibility should be mutually agreed upon and mindful of all remaining phases of the project."

The draft review plan and list of SPD comments have been forwarded to the RMC requesting their involvement. The RMC verified that they are the RMO for Dam Safety Modification projects and Levee Safety Modification projects. The regulations state that for all other projects the MSC shall serve as the RMO, which in this case, is SPD.

A Regional Technical Review (RTR) for economics and an ATR for all other technical disciplines will be conducted. The Review Plan will be updated to outline the path forward including conducting Regional Technical Reviews for the ERR, ATRs for all technical disciplines, and identifying the type of Planning document needed for the project closeout. The RMO for the ERR or Planning document needed for the project closeout is SPD.

Comment 4. In the last paragraph of Sec 2.B, please explicitly indicate if Morrison

Creek is included in the stated cost estimate of the Florin Creek improvements.

Response: In the last paragraph of Sec 2.B., text has been added stating that Morrison Creek is included in the stated cost estimate of the Florin Creek Improvements.

Comment: 5. In paragraph 2.C, please clarify if the City of Sacramento hydraulic model/study flood risk management measures or the measures developed from the USACE 2009 Hydraulic DDR are being utilized.

Response:

The results of the City of Sacramento study and the 2009 Hydraulic DDR are being combined and analyzed by Wood Rodgers to determine the appropriate hydraulic modeling for the project. The revised modeling will be used for project design and development.

Comment: 6. Please include the QCP from the A/E consultant.

Response: QCP from the A/E consultant has been added as Appendix H.

Comment: 7. In Sec 5, it was concluded that "the need for the Type I IEPR for the Florin Creek project has been found to be not warranted." Please provide confirmation from the FRM-PCX supporting that evaluation. Not constructing and deferral of previously designed project features may result in increased flood risks that need to be evaluated.

Response: The need for the TYPE I IEPR for the Florin Creek project has been found to be not warranted. We have coordinated the decision regarding the Type I IEPR with the SPD FRM-PCX and they have concurred that the Type I IEPR is not warranted at this time. Should a PACR be prepared following the results of an economic update, further coordination will be conducted with the FRM-PCX to determine if a Type I IEPR is necessary. This is based on the facts that (1) the project is already authorized for construction, the decision document for that action being the 1998 feasibility report and (2) a potential PACR will not recommend construction but will recommend closeout and "deferral" of the remaining project features. A Type I IEPR will be conducted on the PACR as warranted. When the decision is made, the Review Plan will be updated and rerouted for approval.

Comment: 8. Please provide rationale for not having an H&H person on the SAR team.

Response: H&H already completed their work before the SARS requirement was issued for Engineering in 2010. An H&H person will be added for the SAR.

Comment: 9. In Sec 6, please identify the specific HH&C CoP models so that we can ensure adequate capabilities are sought on the ATR team.

Response: . The text has been revised in Sec 6 to state that, "The HH&C Cop models being used is HEC-RAS."

Comment: 10. In Sec 9, please summarize the results of the VE study.

Response: The results of the VE study have been summarized and include the 5 proposals that were identified and accepted.

Comment: 11. In the table showing the review schedule and costs in Sec 11.B, please revise BCOE to include Sustainability (BCOES).

Response: BCOE in Sec 11.B has been revised to BCOES

Comment: 12. In App B, tables 1 and 2, please note that DQC members should not also be PDT members.

Response: Jane Bolton has been replaced by someone else in a different branch –Michael Ramsbotham. John Wiest will be listed as QA/QC on the hydraulics portion of the work that PCSC is doing. This is indicated in the table for clarification.

SPD ATR COMMENTS 8 August 2013

Comment: 1. In Sec 1.A, please revise the list of 'related project documents' to include the O&M Manual and PACR (per Sec 2.C. for this draft RP).

Response: The list of "related project documents" has been revised as follows: "The related project documents consist of a Design Documentation Report (DDR), Plans and Specifications, an OMRR&R manual, and a PACR."

Comment: 2. In Sec 1.B, please revise the list of review approaches to include BCOES and Policy & Legal Review, per Sec 7 of EC 1165-2-214.

Response: The list of review approaches has been revised to include BCOES and Legal and Policy Review, per Sec 7 of EC 1165-2-214.

Comment: 3. In Sec 1.D, please revise the text to indicate that the RMO is the RMC, per EC 1165-2-214, App E, Sec 1.b. " The default RMO for flood risk management projects and Type II reviews is the Risk Management Center (RMC). If the RMC and MSC agree that a Type II review does not need to be conducted, the MSC may assume RMO responsibilities for the implementation phase. Any such transfer of responsibility should be mutually agreed upon and mindful of all remaining phases of the project." Please send the draft review plan to the RMC to request their involvement. Please note that the QMS process identifies this coordination step prior to MSC review/ approval (Sec 7.3.1 in QMS link below):

https://kme.usace.army.mil/CE/QMS/Lists/QMSDocumentLibrary/Division

Response: Sec 1.D., has been revised to indicate the following: "The RMO is the RMC, per EC 1165-2-214, App E, Sec 1.b." "The default RMO for flood risk management projects and Type II reviews is the RMO for flood risk management projects and Type II reviews is the Risk Management Center (RMC). If the RMC and MSC agree that a Type II review does not need to be conducted, the MSC may assume RMO responsibilities for the implementation phase. Any such transfer of responsibility should be mutually agreed upon and mindful of all remaining phases of the project."

The draft review plan and list of SPD ATR comments have been forwarded to the RMC requesting their involvement. They verified that they are the RMO for Dam Safety Modifications and for all other projects the MSC is the RMO; therefore, SPD is the RMO. SPK has determined that a Type II IEPR is necessary. A fact sheet will assist the FRM-PCX in providing further direction after the H&H analysis is complete. A Regional Technical Review (RTR) for economics and an ATR for all other technical disciplines will be conducted. The Review Plan will be updated to outline the path forward including conducting Regional Technical Reviews for the ERR, ATRs for all technical disciplines, and identifying the type of Planning document needed for the project closeout.

Comment 4. In the last paragraph of Sec 2.B, please explicitly indicate if Morrison Creek is included in the stated cost estimate of the Florin Creek improvements.

Response: In the last paragraph of Sec 2.B., text has been added stating that Morrison Creek is included in the stated cost estimate of the Florin Creek Improvements.

Comment: 5. In paragraph 2.C, please clarify if the City of Sacramento hydraulic model/study flood risk management measures or the measures developed from the USACE 2009 Hydraulic DDR are being utilized.

Response: The USACE 2009 Hydraulic DDR is being updated with new information for analyses. The improvements no longer required for Morrison Creek were part of the initial authorization costs. Project is performing such that remaining Morrison Creek improvements are no longer required.

Comment: 6. Please include the QCP from the A/E consultant.

Response: QCP from the A/E consultant has been added as Appendix H.

Comment: 7. In Sec 5, it was concluded that "the need for the Type I IEPR for the Florin Creek project has been found to be not warranted." Please provide confirmation from the FRM-PCX supporting that evaluation. Not constructing and deferral of previously designed project features may result in increased flood risks that need to be evaluated.

Response: SPK has determined that the IEPR I for Florin Creek and all other previous elements is not warranted since the same construction authority applied to the 1998 Feasibility study and the 2004 LRR. Also, this is requirement came after 1998 Feasibility Report and 2004 LRR were completed. There is no current feasibility report to do an IEPR I ; therefore, we are not doing an IEPR I. An economic update (Economic Reevaluation Report) ERR for Florin Creek will done to determine economic viability for this reach and all other elements. This addresses the ERR only. Future planning documentation to be determined may require follow up based on the economic update and may be subject to IEPR I. The type of Planning document is to be determined but will follow appropriate levels of reviews including Regional Technical Reviews for the ERR, ATR for all technical disciplines, and will also be updated in the review plan to include the path forward.

Comment: 8. please provide rationale for not having an H&H person on the SAR team.

Response: H&H already completed their work before the SARS requirement was issued for Engineering in 2010. An H&H person will be added for the SAR.

Comment: 9. In Sec 6, please identify the specific HH&C CoP models so that we can ensure adequate capabilities are sought on the ATR team.

Response: NAVD 88 and HEC RAS are the HH&C Cop models being used.

Comment: 10. In Sec 9, please summarize the results of the VE study.

1.0 **Response:** The results of the VE study have been summarized and include the 5 proposals that were identified and accepted.

Comment: 11. In the table showing the review schedule and costs in Sec 11.B, please revise BCOE to include Sustainability (BCOES).

Response: BCOE in Sec 11.B has been revised to BCOES

Comment: 12. In App B, tables 1 and 2, please note that DQC members should not also be
PDT members.

Response: Jane Bolton has been replaced by someone else in a different branch –Michael Ramsbotham. John Wiest will be listed as QA/QC on the hydraulics portion of the work that PCSC is doing. This is indicated in the table for clarification.

APPENDIX H

QCP FROM AE CONSULTANT

QUALITY CONTROL PLAN

SOUTH SACRAMENTO COUNTY STREAMS PROJECT

FLORIN CREEK FROM FRANKLIN BOULEVARD TO HIGHWAY 99

Section 2D1

Sacramento County, CA

Contract No. W91238-10-D-0016, Task Order 4 & Modification

Prepared For

US Army Engineer District, Sacramento, CA
1325 J Street
Sacramento, CA 95814

Prepared By

7415 Greenhaven Drive, Suite 100
Sacramento, CA 95831

October 19, 2012

QUALITY CONTROL PLAN

PROJECT DESCRIPTION

The South Sacramento County Streams Flood Damage Reduction Project was authorized by the Water Resources Development Act of 1999. The selected plan described in the Final Feasibility Report (prepared in 1998) includes a combination of flood protection features including raising and extending levees, the installation of floodwalls, and modifications to existing creek channel geometry. Subsequent to the 1998 Feasibility Report, a Limited Reevaluation Report (LLR) was prepared in 2004 to update and verify that information and proposed improvements were still economically, environmentally, and technically acceptable. Following the LLR, additional investigations considering refined hydraulic analysis and risk analysis were conducted and reported in the 2009 Hydraulic Design Documentation Report (DDR). In November 2011, the City of Sacramento completed a thorough hydraulic model of the South Sacramento Streams project. The results of this hydraulic modeling, and the results of additional hydraulic modeling along Florin Creek between Franklin Boulevard and Highway 99, revealed that channel improvements considering off-site storage is a preferred approach to the dual floodwall approach proposed in the 2009 Hydraulic DDR. The design work under this task order include preparing construction plans, specifications, DDR, ECIFP, cost estimates, and other associated work for flood protection improvements from just downstream of Franklin Boulevard (tie into Contract 1B2 improvements) to Highway 99.

The improvements within this segment of Florin Creek between Franklin Boulevard and Highway 99 are expected to consist primarily of channel improvements to contain the predicted flood waters considering off-site storage facilities to be designed and constructed in the future under a separate contract. Specific improvements are expected to consist of deepening and widening of the existing creek channel, channel paving, the construction of floodwalls at the top of channel banks between Persimmon Avenue and Highway 99, modifications to the existing drop structure downstream of Franklin Boulevard, and possible minor modifications to bridges and culverts at street crossings. This task order will complete the final design of this segment of the project and includes the following specific tasks:

1. Surveying;
2. Utility and Field Data Collection;
3. Potholing;
4. Development of final construction plans and specifications;
5. Preparation of a Design Documentation Report (DDR);
6. Preparation of a Engineering Considerations and Instructions for Field Personnel document (ECIFP), and;
7. Cost estimating

Task order deliverables include progress reports, quality control plan, design drawings, specifications, design documentation report, cost estimates, and preparation of an ECIFP.

The above noted scope of work will be completed by Pacific Civil & Structural Consultants (PCSC), a joint venture of MGE Engineering (MGE) and Wood Rodgers (WRI). Cost estimating will be completed by our subconsultant Mr. Albert Meyer.

PROJECT QUALITY CONTROL OBJECTIVES

The objectives of the Quality Control (QC) Plan are to set procedures for assuring and performing the quality functions by which the management, engineering, and incidental work necessary to complete the design assignments are completed in a manner that results in a product that is:

- Designed, detailed, and specified to USACE and industry standards of performance and accuracy;
- Completed per the established schedule;
- Constructed with minimum change orders, no claims; and
- Coordinated and in compliance with the USACE standards, policies, and users.

The provisions within this QC Plan are applicable to PCSC, and its' subcontractors.

PROJECT QUALITY CONTROL PROCEDURES

PCSC's quality control plan consists of multiple reviews of all contract documents by the engineers supervising the work, as well as an Independent Technical Review (ITR) performed by staff not directly involved in the design of the project under review. The supervising personnel responsible for internally reviewing the various design components are listed in the table below. In addition, the firms performing the ITR on each component are also indicated in the table below. Comments as a result of internal reviews will be discussed and resolved with the responsible designers. ITR comments will be documented by red-marked comments on the documents in addition to completing an ITR Comment/Response Log spreadsheet. After the designer reviews and responds to the ITR comments in writing within the same spreadsheet, the ITR reviewers will conduct a backcheck to ensure resolution of all comments.

Design Component	Design Firm	ITR Firm	Supervising Reviewer
Civil Site	MGE	WRI	Steve Hawkins, P.E.
Utility Relocations	MGE	WRI	Steve Hawkins, P.E.
Storm Drain Outfalls	MGE	WRI	Steve Hawkins, P.E.
Structures	MGE	WRI	Robert Sennett, S.E.
Civil Specifications	MGE	WRI	Steve Hawkins, P.E.
Structural Specifications	MGE	WRI	Robert Sennett, S.E.

All calculations, including the results of computer modeling, shall contain the name of the responsible engineer followed by the most recent date of the calculations as well as the handwritten initials of the person responsible for reviewing the calculations.

PROJECT SCHEDULE

The following table presents the project schedule per the Statement of Work dated 14 September 2012 and a contract award date of 27 September 2012.

Task	Completion Date
Progress Reports	10th of Every Month
Task 17: Quality Control Plan	10/6/2012
Task 18: Surveying, Utility and Field Data Collection	N/A
Task 19: Final Construction Plans and Specifications	
35% Concept Plans	11/22/2012
65% Design Submittal	2/28/2013
90% Design Submittal	6/6/2013
100% Design Submittal	8/22/2013
Corrected Final Submittal	10/17/2013
Task 20: Design Documentation Report (DDR) (65%, 90%, & 100%)	Per Task 19
Task 21: ECIFP (90% & 100%)	Per Task 19
Task 22: MCACES II Cost Estimate (65%, 90%, & 100%)	Per Task 19
Task 23: Design Coordination, Meetings, and Project Management Information	N/A
Optional Task 1: Utility Relocation Design	TBD

STANDARDS OF PRACTICE

PCSC, exercising reasonable care and professional competence, will complete deliverables and other elements in accordance with the requirements of the Task Order. As a minimum, the deliverables, including plans, design, calculations, reports, and other documents will be of a quality acceptable to the USACE Contract Manager. The criteria for acceptance will be a product of neat appearance, well organized, technically and grammatically correct, and where appropriate, sealed and signed by the California licensed engineer in responsible charge of the work.

COMMUNICATIONS/COORDINATION

Direct communications between PCSC's engineering staff and the USACE's discipline leaders will be utilized to facilitate the task order efforts. Refer to the table below for the names and contact information of the USACE discipline leaders. Coordination between the PCSC project manager, engineering staff, and USACE technical staff will be facilitated through meetings, phone calls, and emails. Either the project manager or a supervising engineer will attend scheduled meetings and prepare meeting minutes to document discussions and decisions made. All email correspondence will include Cc's to the PCSC project manager and the USACE technical discipline leaders. Telephone calls will be documented with written notes and filed in project binders. Furthermore, an email from the project manager to the USACE technical leaders will serve to document important decisions or discussions resulting from telephone discussions.

Discipline Leaders	Discipline	Telephone Number	E-Mail Address
Marshall Marik	Project Manager	(916) 557-7698	Marshall.A.Marik @usace.army.mil
Paul Hsia	Technical Lead	(916) 557-6648	ShanChing.Hsia @usace.army.mil
Joaquin Quenga	Technical Lead	(916) 557-6623	Joaquin.S.Queng a@usace.army.mil

RESUMES

Resumes for the PCSC engineering staff and cost estimating subconsultant assigned to this project follow this page.

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

(Complete one Section E for each key person.)

12. NAME	13. role in this contract	14. YEARS EXPERIENCE a. TOTAL	b. WITH CURRENT FIRM
ROBERT SENNETT, IV, S.E.	Project Manager/Task Order Manager	21	16

15. FIRM NAME AND LOCATION (City and State)

MGE ENGINEERING, INC.

Sacramento, CA 95831

16. EDUCATION (DEGREE AND SPECIALIZATION)	17. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE)
M. Eng./1987/Structural Engineering B.S./1986/Civil Engineering	1990/Civil Engineering/CA #46195 1995/Structural Engineering/CA #3976 2004/Civil & Structural Engineering/OR #16881PE

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*

Mr. Sennett is responsible for supervision of engineering activities at MGE, including management of civil and structures planning and design. His experience includes management of multi-discipline teams responsible for development of complex civil works and transportation projects for federal, state and local agencies. He has an excellent record as a project manager for completion of Delivery Orders under multiple IDIQ contracts for federal agencies including the Sacramento District of the US Army Corps of Engineers.

19. RELEVANT PROJECTS

a.

(1) TITLE AND LOCATION (City and State)

Napa River / Napa Creek Plans Flood Control Project Contract W91238-04-D-0018, USACE, Napa, California

(2) YEAR COMPLETED: PROFESSIONAL SERVICES: On-going; CONSTRUCTION (If applicable):

(3) BRIEF DESCRIPTION (Brief Scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm

IDIQ Contract Project Manager /Delivery Order Manager for a Delivery Order for preparation of plans, specifications and cost estimate for flood control improvements to a reach of Napa Creek through the City of Napa. The proposed improvements include channel widening, construction of overbank flood plain terraces, flood walls and berms, and hydraulic grade control work to create riffles and pools. Responsibilities include civil and structural design, identification of utilities needing relocation, direction of subcontractors, and coordination with the Napa County Flood Protection District, City of Napa, and other project stakeholders. The intermediate and final plans, specifications and estimate are submitted to the Corps of Engineers via the internet. The estimated cost for the Napa Creek improvements is more than $20 million.

b.

(1) TITLE AND LOCATION *(City and State)*

Napa River/Napa Creek Flood Protection Project, Contract 2W, Hatt Building to First Street, USACE, Sacramento District

(2) YEAR COMPLETED: PROFESSIONAL SERVICES: 2006-07; CONSTRUCTION (If applicable): 2008

(3) BRIEF DESCRIPTION (Brief Scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm

IDIQ Contract Project Manager/Delivery Order Manager for preparation of plans and specification for a contract to construct flood walls and associated amenities along the Napa River. The project included 1,600 feet of soldier pile retaining/flood walls, upper setback retaining/flood walls with a pedestrian recreation river walk along the west bank of the Napa River, and amphitheater in the City of Napa. Construction of this $19 million project is substantially complete.

c.

(1) TITLE AND LOCATION (City and State)

Folsom Dam Outlet Modifications – Precast Concrete Bellmouth System, US Army Corps of Engineers, Sacramento District

(2) YEAR COMPLETED: PROFESSIONAL SERVICES: 2004; CONSTRUCTION (If applicable):

(3) BRIEF DESCRIPTION (Brief Scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm

IDIQ Contract Project Manager/Deliver Order Manager for the development of concepts and final structural design and construction specifications (using the SPECTSINTACT software) for the precast concrete bellmouth panels required for the two new conduits and enlargement of the existing eight river conduits. Estimated Construction Cost: $14.4 M.

d.

(1) TITLE AND LOCATION (City and State)

Terminus Dam Modifications – Intake and Conduit Structures, Tulare County, US Army Corps of Engineers, Sacramento District

(2) YEAR COMPLETED: PROFESSIONAL SERVICES: 2003; CONSTRUCTION (If applicable): 2004

(3) BRIEF DESCRIPTION (Brief Scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm

IDIQ Contract Project Manager/Deliver Order Manager for the development of concepts and final structural design and construction specifications (using the SPECTSINTACT software) for intake and conduit structures including design computations, oversight of the preparation of plans using AutoCAD2000. Construction Value: $1,100,000.

e.

(1) TITLE AND LOCATION *(City and State)*

Shasta Lake Dam and Reservoir Enlargement Project, Sacramento

(2) YEAR COMPLETED: PROFESSIONAL SERVICES: 2006; CONSTRUCTION (If applicable):

(3) BRIEF DESCRIPTION (Brief Scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm

Project Structural Engineer responsible for appraisal level evaluations of bridge structures affected by three proposed Dam raise scenarios. Evaluations included preliminary static and dynamic analysis to evaluate proposed improvements and modifications to existing bridges, bridge replacement investigations, and development of preliminary quantities for the purpose of estimating construction costs. The results of the investigations were documented in a technical report.

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

(Complete one Section E for each key person.)

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE	
		A. TOTAL	B. WITH CURRENT FIRM
STEPHEN HAWKINS, P.E.	Civil Engineering	32	1

15. FIRM NAME AND LOCATION *(City and State)*

MGE ENGINEERING, INC. Sacramento, CA

16. EDUCATION (Degree and Specialization)	17. CURRENT PROFESSIONAL REGISTRATION *(State and Discipline)*
B.S./1980/Civil Engineering MBA/1991/Business Administration	1983/Civil Engineer/CA #36556

18. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, etc.)

Mr. Hawkins has broad and extensive experience in all facets of civil engineering, both as an employee and as a consultant. This experience includes planning and administration of projects involving the development of roadway alignments and construction, water resources, storm drainage, sanitary sewer design and construction, and the full range of municipal engineering projects.

19. RELEVANT PROJECTS

a.

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION (If applicable)
Pliocene Ridge Road Rehabilitation, Sierra County	ongoing	

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE — ☒ Check if project performed with SBSA

Project manager and lead civil engineer responsible for the PS&E for the rehabilitation of 2.6 miles of Pliosene Ridge Road. Project included recycling existing asphalt pavement in place with an AC overlay, adding shoulders, construction of retaining walls, new MBGR, concrete headwalls at an existing culvert, and new cross culverts.

b.

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION (If applicable)
American River Common Features, Levee Improvements, Site L9, USACE Sacramento District, CA	2012	

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE — ☒ Check if project performed with SBSA

Task Manager for the installation of a jet grout cut off wall located on the left bank levee of the American River at the Sacramento County Regional Sanitation District Pump Station (Site L9). The 154 foot "window" in the previously constructed slurry cutoff wall is proposed to be closed using the jet grout method along the centerline of the levee crest. The closure wall would have a constant depth of 57 feet with a 1-foot clay cap and will overlap the existing slurry wall by 20-feet at each end. Responsibilities include preparation of plans for the jet grout cutoff wall, utility coordination, and coordination of the joint submission between MGE and another firm that is designing a similar project on an adjacent site.

c.

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION (If applicable)
Mid Valley Levee Rehabilitation Project, Corps of Engineers Mid-Valley Area Phase III Area 3, Sites 9, 10, 11, Contract #W91238-09-R-0023, USACE Sacramento District	ongoing	

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE — ☒ Check if project performed with SBSA

Task manager for the design and preparation of the PS&E to design and construct slurry cutoff walls to mitigate under and through seepage of the levee. The construction methods used were soil bentonite slurry and deep soil mixing. Sites are located along the West bank of the Sacramento River in Yolo County.

d.

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION (If applicable)
"On-Call" Contract, Alameda County Flood Control and Water Conservation District, CA	ongoing	

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE — ☒ Check if project performed with SBSA

MGE project civil engineer for design of improvements to the Eden Landing Pump Station and Construction Support team leader. The 35-year old pump station was completely rehabilitated and included replacement of natural gas pump engines with variable frequency electric controls. Responsibilities include: Field investigation and measurements, review of existing As-Built and repair drawings, evaluation of operational conditions; underground discharge line inspection; and preparation of PS&E for the civil engineering portion of the pump station rehabilitation.

e.

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION (If applicable)
County Road A23 Pavement Evaluation, Sierra County CA	2012	2012

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE — ☐ Check if project performed with SBSA

Project engineer for this project which involved pavement overlay that was showing signs of failure after only two seasons. Sierra County called on MGE under an "as-needed" engineering services contract to evaluate the construction methods and mix design used, and to assist in determining the cause of failure.

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(Complete one Section E for each key person.)

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE	
		a. TOTAL	b. WITH CURRENT FIRM
Jonathan Kors, PE	**Deputy Project Manager & Task Order Manager**	14	8

15. FIRM NAME AND LOCATION (*City and State*)
Wood Rodgers, Inc. (Sacramento, California)

16. EDUCATION (*DEGREE and SPECIALIZATION*)	17. CURRENT PROFESSIONAL REGISTRATION (*STATE AND DISCIPLINE*)
BS, Civil Engineering, 1995	Registered Professional Engineer, Civil, California No. 59538

18. OTHER PROFESSIONAL QUALIFICATIONS (*Publications, Organizations, Training, Awards, etc.*)

Mr. Kors is a registered Civil Engineer with 14 years of experience in water resources engineering design and construction management. Mr. Kors has led teams of engineers in the preparation of plans, specifications, and cost estimates for projects involving the construction of pipelines, levees, pumping plants, hydraulic structures, detention basins, channels, flumes, floodwalls, and miscellaneous water supply, flood control, drainage, and irrigation facilities. Mr. Kors has also been involved in construction management, including construction coordination, administration, inspection, and claims negotiation.

19. RELEVANT PROJECTS

a.

(1) TITLE AND LOCATION (*City and State*)	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION (*If applicable*)
Sacramento Area Flood Control Agency (SAFCA), Natomas Levee Improvement Program - Sutter and Sacramento Counties, CA	2006 - Current	Ongoing

(3) BRIEF DESCRIPTION (*Brief scope, size, cost, etc*) AND SPECIFIC ROLE — ☒ Check if project performed with current firm

Managed four design contracts for the design of 15 miles of levee improvements at the south levee of the Natomas Cross Canal, west levee of the Pleasant Grove Creek Canal, and west levee of the Natomas East Main Drainage Canal. Improvements included the installation of soil-bentonite and soil-cement-bentonite cutoff walls, adjacent levees, levee raises and slope flattening, and the correction of non-compliant levee penetrations and encroachments. Performed alternatives analyses to identify preferred mitigation measures for each levee reach. Prepared detailed planning and final construction level cost estimates. Coordinated with the US Army Corps of Engineers, DWR and Central Valley Flood Protection Board to obtain project approval. Phase 1 construction was completed in 2007 at a cost of $14 million, Phase 1B was completed in September of 2008 at 3.5 million. Phase 2 was completed in December of 2009 at a cost of $24 million. The goal of these projects is to restore 100-year flood protection to the Natomas Basin as soon as possible, and provide 200-year protection shortly thereafter. Also managed Wood Rodgers' efforts in supporting the USACE's Natomas Post Action Change Authorization by developing cost estimates to be used in determining the National Economic Development (NED) Project for the Natomas Basin.

b.

(1) TITLE AND LOCATION (*City and State*)	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION (*If applicable*)
Bear River (East) North Levee Rehabilitation Project - Reclamation District 2103 - Wheatland, CA	2006	2008

(3) BRIEF DESCRIPTION (*Brief scope, size, cost, etc*) AND SPECIFIC ROLE — ☒ Check if project performed with current firm

Responsible for the preparation of construction drawings, specifications, and opinion of probable cost for the first phase of Reclamation District 2103's levee improvements at the north levee of the Bear River. The project involved the installation of 7,250 lineal feet of soil-bentonite-cement slurry cutoff wall and other miscellaneous levee improvements including levee widening and reconstruction of reaches with slope stability concerns. Phase 1 of Project construction was completed in 2007 at a cost of $3.5 million.

c.

(1) TITLE AND LOCATION (*City and State*)	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION (*If applicable*)
USACE, ID/IQ Contract for Support of South Pacific Division - Wide Dams and Levee Safety Programs	2009	N/A

(3) BRIEF DESCRIPTION (*Brief scope, size, cost, etc*) AND SPECIFIC ROLE — ☒ Check if project performed with current firm

Task Order Manager for Wood Rodgers' Periodic Inspection (PI) of San Joaquin River and Duck Creek/Walker Slough Levees within Reclamation District No. 404. Completed USACE Levee Inspection training workshop and performed inspection of levee segments in December of 2009. Currently preparing PI Inspection Report.

d.

(1) TITLE AND LOCATION (*City and State*)	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION (*If applicable*)
Lower Feather River Setback Levee at Star Bend - Levee District No. 1 of Sutter County - Yuba City, CA	2007	2009

(3) BRIEF DESCRIPTION (*Brief scope, size, cost, etc*) AND SPECIFIC ROLE — ☒ Check if project performed with current firm

Project Engineer for the design of a 3,400 foot setback levee and foundation cutoff wall at the right bank of the Feather River at Star Bend. Used the USACE's flood damage assessment software HEC-FDA to estimate inundation reduction for the proposed project and project alternatives during the planning phase of the project. Developed alternatives and analyzed each to determine preferred project. Evaluated improvements to an existing 92 cfs pumping plant and irrigation water delivery system owned and operated by the Tudor Mutual Water Company necessary to convey water beneath the new setback levee alignment. Provided quality control and managements of final plans, specifications, and opinion of probable cost development. Coordinated design components with USACE representatives and project Safety Assurance Review team. The setback levee was constructed in the summer of 2009 at a cost of $8.0 million.

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

(Complete one Section E for each key person.)

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE	
		a. TOTAL	b. WITH CURRENT FIRM
Jonathan Kors, PE	**Deputy Project Manager & Task Order Manager**	14	8

e.

(1) TITLE AND LOCATION (*City and State*)

South Urban Growth Area, Regional Storm Drainage Facilities Project (SLSPA-Phase 1) – City of Woodland, CA

(2) YEAR COMPLETED

PROFESSIONAL SERVICES	CONSTRUCTION (*If applicable*)
2005	2005

(3) BRIEF DESCRIPTION (*Brief scope, size, cost, etc*) AND SPECIFIC ROLE

☒ Check if project performed with current firm

Project Engineer for design of this $8.4 million Regional Storm Drainage Facilities Project. Coordinated the preparation of construction plans, specifications, and an opinion of probable cost for the design of a 360-acre-foot detention basin, approximately two and one half miles of trapezoidal channel, seven reinforced concrete box structures and related drainage facilities to serve the City's South Urban Growth Area. Mr. Kors prepared preliminary engineering for future facilities including pipelines and channels.

f.

(1) TITLE AND LOCATION (*City and State*)

City of Winters, Rancho Arroyo Detention Basin Pump Station - Winters, CA

(2) YEAR COMPLETED

PROFESSIONAL SERVICES	CONSTRUCTION (*If applicable*)
2004	N/A

(3) BRIEF DESCRIPTION (*Brief scope, size, cost, etc*) AND SPECIFIC ROLE

☒ Check if project performed with current firm

Project Engineer for the preparation of plans, specifications, and opinion of probable cost for the construction of a 15-cfs drainage pump station, pond inlet pipe and structure, and miscellaneous water quality improvements at the existing Rancho Arroyo Detention Basin in the City of Winters, California.

g.

(1) TITLE AND LOCATION (*City and State*)

City of Chico, One Mile Dam Replacement Project – Chico, CA

(2) YEAR COMPLETED

PROFESSIONAL SERVICES	CONSTRUCTION (*If applicable*)
2005	2005

(3) BRIEF DESCRIPTION (*Brief scope, size, cost, etc*) AND SPECIFIC ROLE

☒ Check if project performed with current firm

Project Manager for the design of a 40-foot-wide by 8-foot-high replacement dam structure for One Mile Dam on Big Chico Creek. Managed the preparation of plans, specifications, and an opinion of probable cost for the installation of a pneumatically-operated spillway gate at the Sycamore swimming pool on Big Chico Creek in Bidwell Park.

h.

(1) TITLE AND LOCATION (*City and State*)

Yolo County Flood Control & Water Conservation District, Critical Irrigation System Upgrades - Yolo County, CA

(2) YEAR COMPLETED

PROFESSIONAL SERVICES	CONSTRUCTION (*If applicable*)
2004	2005

(3) BRIEF DESCRIPTION (*Brief scope, size, cost, etc*) AND SPECIFIC ROLE

☒ Check if project performed with current firm

Managed the design of three critical irrigation facility upgrades for the Yolo County Flood Control and Water Conservation District, including replacement of the Yolo Central Canal's crossing of County Road 88, repair of the Cottonwood Canal Headgate Structure on the Winter's Canal, and installation of an overshot gate, new flash board structure and catwalk at the Fredericks Flume on the Winters Canal.

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(Complete one Section E for each key person.)

812. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE	
		a. TOTAL	b. WITH CURRENT FIF
Gerardo V. Calvillo, Jr., PE, SE	**Structural Design**	28	2

15. FIRM NAME AND LOCATION (*City and State*)
Wood Rodgers, Inc. (Sacramento, California)

16. EDUCATION (*DEGREE and SPECIALIZATION*)	17. CURRENT PROFESSIONAL REGISTRATION (*STATE AND DISCIPLINE*)
MS, Structural Engineering, Stanford University, 1981 BS, Civil Engineering, University of the Pacific, 1979	Registered Professional Engineer, Structural, Californi No. 2920 Registered Professional Engineer, Civil, California No 36216; Additional Licenses: Arizona, Hawaii, Idaho, Nevada, Oregon, & Texas

18. OTHER PROFESSIONAL QUALIFICATIONS (*Publications, Organizations, Training, Awards, etc.*)
Mr. Calvillo has over 28 years of experience and has served as the Structural Engineer in the development of a variety of public and priv projects throughout California. He has extensive experience as a structural design engineer, including preparation of design preliminarie design calculations, and engineering detailing and specifications. He is thoroughly knowledgeable of building code requirements for structural steel, reinforced concrete, masonry, precast and prestressed concrete, and wood structures, including seismic structural system requirements, varying from steel ductile moment and concrete ductile moment frames to coupled shear walls and braced frames. Mr. Calvillo has also completed new construction and retrofit documents for Bridges, Special Structures, and over 100 significant building design projects.

19. RELEVANT PROJECTS

a.

(1) TITLE AND LOCATION (*City and State*)	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION (*If applicable*)
City of Hollister Wastewater Treatment Facility - Hollister, CA	2008	2008

(3) BRIEF DESCRIPTION (*Brief scope, size, cost, etc*) AND SPECIFIC ROLE — Check if project performed with current firm

Project Structural Engineer for the new City of Hollister Wastewater Treatment Facility. As Project Structural Engineer of Record, he worked with the HSe Inc. wastewater treatment design team to provide structural design solutions and geometri support mechanical equipment and hydraulic flow requirements for the complete wastewater treatment facility. Structural engineering services included preparing construction documents and Wood Rodgers presently providing the construction support services.

b.

(1) TITLE AND LOCATION (*City and State*)	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION (*If applicable*)
City of Lodi Wastewater Treatment Facility - Lodi, CA	2008	2008

(3) BRIEF DESCRIPTION (*Brief scope, size, cost, etc*) AND SPECIFIC ROLE — Check if project performed with current firm

Project Structural Engineer for the new expansion and retrofit addition to the City of Lodi Wastewater Treatment Facility. Project Structural Engineer of Record, he worked with the West Yost & Associates wastewater treatment design team. Structural engineering services included preparing construction documents and Wood Rodgers is currently providing the construction support services.

c.

(1) TITLE AND LOCATION (*City and State*)	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION (*If applicable*)
Cache Creek Casino Wastewater Treatment Facility - Cache Creek, CA	2006	2006

(3) BRIEF DESCRIPTION (*Brief scope, size, cost, etc*) AND SPECIFIC ROLE — Check if project performed with current firm

Project Structural Engineer for the Cache Creek Casino Wastewater Treatment Facility located in Cache Creek CA. As Pr Structural Engineer of Record, he worked with the HSe Inc. wastewater treatment design team to provide structural design solutions and geometries to support mechanical equipment and hydraulic flow requirements for the retrofit and expansion c water treatment capacity. Structural engineering services included preparing construction documents and construction supp for the Recycled Water Pump Station, Chlorine Contact Basin Retrofit, Membrane Bioreactor Tank - Two Process Train System, Operations Building Addition & Retrofit, Pre-Fabricated Blower Building Foundation, Belt Press Screw Conveyo Support Structure, and UV Disinfection Retrofit and Canopy Structure.

(1) TITLE AND LOCATION (*City and State*)	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION (*If applicable*)
Thunder Valley Wastewater Treatment Facility - Roseville, CA	2007	2007

	(3) BRIEF DESCRIPTION (*Brief scope, size, cost, etc)* AND SPECIFIC ROLE	Check if project performed with current firm
d.	Served as the Project Structural Engineer for the services that were provided for the initial and expansion phases during 20(2004, and 2007 for the **Thunder Valley Casino Wastewater Treatment Facility** located in Roseville CA. Structural desi engineering services included preparing construction documents and providing construction support for the following structures; 2002 Scope: Membrane Bioreactor Structure - Three Process Train System; Operations Building Supernatant Outlet Structure; and Recycled Water Pump Station; 2004 Scope: Reverse Osmosis Foundation and Canopy Structure; and Water Softeners Foundation and Canopy Structure; 2007 Scope: Influent Pump Station; Membrane Bioreact Structure - Three Process Train Addition; UV Disinfection System Foundation and Canopy Structure; MCC / Blower Build and Storage Tank Ring Footings.	