



REPLY TO  
ATTENTION OF

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

*Handwritten signature and date: J. Mar 2013*

CESPD-PDC


MEMORANDUM FOR Commander, Sacramento District US Army Corps of Engineers,  
ATTN: Mr. William Doyle(CESPK-ED-DC)

Subject: Review Plan Approval for Napa River/Napa Creek Flood Protection Project

1. The enclosed updated Review Plan for the Napa River/Napa Creek Flood Protection Project, dated 31 October 2012, 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 USACE Risk Management Center (RMC). The RMC 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](mailto:Karen.G.Berresford@usace.army.mil).

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

Encl  
Review Plan

  
MICHAEL C. WEHR  
BG, EN  
Commanding

# **Napa River/Napa Creek Flood Protection Project**

## **Review Plan**



**Prepared by:  
Sacramento District**

**Napa, California**

**October 31, 2012**



**US Army Corps  
of Engineers®**

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**REVIEW PLAN**  
**NAPA RIVER/ NAPA CREEK FLOOD PROTECTION PROJECT**  
**NAPA, CALIFORNIA**

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**REVIEW PLAN**

**NAPA RIVER/NAPA CREEK FLOOD PROTECTION PROJECT**

**NAPA, CALIFORNIA**

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**1. PURPOSE AND REQUIREMENTS**

**A. Purpose.** This document outlines the Review Plan for the Napa River Flood Protection Project. It focuses on Napa Flood Control Project features as they relate to plans, specification, OMRR&R manuals, design document reports, and reviews during construction. It was developed in accordance with Engineering Circular (EC) *Civil Works Review Policy* 1165-2-209, dated 31 January 2010, defines the procedures for ensuring the quality and credibility of U.S. Army Corps of Engineers (USACE) decision, implementation, and operations and maintenance documents and work products.

**B. Requirements.** EC 1165-2-209 outlines three requirements to the review process. These are a district quality control/quality assurance review (DQC), an agency technical review (ATR), and an independent external peer review (IEPR). Depending on which requirement is performed, the reviews will investigate the quality of workmanship which in itself minimizes the risk for failure. External reviews for the Napa Project would focus primarily on minimizing the risk to flooding.

(1) District Quality Control. DQC is the review of basic science and engineering work focused primarily on fulfilling the project quality requirements for the Napa Project, the requirements of which are defined in the PMP, P2 Project No. 105469. The DQC is managed in the Sacramento District and may be conducted by in-house staff as long as the reviewers are not doing the work involved in the study, including contracted work that is being reviewed. Basic quality control tools include a Quality Management Plan providing for seamless reviews, quality checks and reviews; supervisory reviews; and Project Delivery Team (PDT) reviews. Additionally, the PDT is responsible for a complete review of all design and specification milestone packages in order to assure overall integrity, which could include changes and recommendations to design and specification submittal before approval of the ATR report by the District Commander. DQC efforts will include the necessary expertise to address compliance with published Corps policy. The district quality manuals will prescribe specific procedures for the conduct of DQC efforts including documentation requirements and maintenance of associated records for internal audits to check for proper DQC implementation.

(2) Agency Technical Review. EC 1165-2-209 characterizes the ATR effort 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 the design effort. 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. For each ATR event, the ATR event shall review relevant DQC records and provide written comment in the ATR report as the apparent adequacy of the DQC effort. ATR teams will be comprised of senior USACE personnel (Regional Technical Specialists (RTS), subject matter experts, etc.) and may be supplemented by outside experts as appropriate. To assure independence, the leader of the ATR team shall be from outside the home MSC (district). EC 1165-2-209 requires that DrChecks (<https://www.projnet.org/projnet/>) be used to document all ATR comments, responses, and associated resolution accomplished.

At this level of review, any necessary National Environmental Policy Act (NEPA) documents and other environmental compliance products, or any other services provided by the local sponsor(s) shall be reviewed by the ATR team. At this time there aren't any anticipated.

The ATR is mandatory for any and all decision and implementation documents which shall include, but not be limited to any structural, civil, mechanical, or hydraulic designs; any evaluation alternatives; any recommendations made; any formal cost estimates provided; any NEPA documentation; any impacts to structures or features of a structure whose performance involves potential life safety risks; any changes to the current operation of a project; any ground disturbances; any effect to cultural resources, historic properties, or survey markers; and anything that would trigger regulatory permitting such as Section 404 or stormwater permitting.

The review plan outlines the proposed approach to meeting this requirement for the Napa Project, Designs and Specifications, OMRR&R Manual and Cost Estimate packages. An ATR is required for all implementation documents for the Napa Project.

(3) Type II IEPR (SAR) Review. EC 1165-2-209 characterizes the IEPR effort as an external review process that was originally added to the existing Corps review process via EC 1105-2-408. A SAR is required for most future implementation documents for Napa for the following reasons.

a) The Napa Project (Napa River) is of critical safety importance where there is a concern for public safety; significant safety controversy; or a high level of complexity.

b) The Napa Project (Napa River) could be of a threat to human life if not implemented correctly. Unnecessary flooding could cause major damage to property in the event of the overtopping of banks.

c) A SAR is required for a significant threat to human life due to hurricane or severe storm risks; or near flooding potential. The City of Napa in the past has experienced flooding causing loss of life and property damage associated with the Napa River (excludes Napa Creek).

(4) Policy and Legal Compliance Review (PLCR). PLCR is not required for the Napa Project for the following reason:

PLCR applies to Section 905(b) programs/analyses, feasibility reports, limited and general reevaluation reports, post authorization change reports, and other reports supporting project authorization and budget decisions. The Napa Project is authorized under the Flood Control Act of 1965 (Public Law 89-298). Napa Creek was added to the project authorization by the Flood Control Act of 1976 (Public Law 94-587).

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

**Table 1-1. Summary of Reviews for the Napa Project (Requirements As Noted in the Civil Works Review Policy, EC 1165-2-209).**

<b>Review Type</b>	<b>Acronym</b>	<b>Management</b>	<b>Applicable</b>	<b>Notes:</b>
Review Plan Approval	RPA	-	Required	Approved by: MSC Commander
Public Review Plan Approval	-	MSC	Required	Posted only after Commander's approval
District Quality Con.	DQC	SPK	Required	Review during design process
Agency Technical Review	ATR	RMO	Required	Review during design process
Safety Assurance Review	IEPR	HQUSACE	Required <sup>1</sup>	Review during design process and during construction
Policy and Legal Compliance Review	PLCR	MSC, RMO, HQUSACE	Not Required	
Planning Center of Expertise	FRM	FRM @ RMO	Not Required	Required for decision documents only
Certification of Agency Technical Review	Certification of ATR	MSC	Required	After all successful reviews are completed

<sup>1</sup> – For Napa River, excludes Napa Creek.

## **2. PROJECT INFORMATION**

**A. Introduction and Purpose.** The Napa River originates approximately 30 miles north of the city near Mt. Saint Helena. The river winds its way through the City of Napa and eventually empties into the Mare Island Strait which flows into the tidal marshlands and sloughs of San Pablo Bay. Many residential dwellings, businesses, and industrial buildings are located along the Napa River within the city limits. Fourteen serious floods have occurred on the Napa River within the city limits beginning in 1942 and culminating in 1997. The most serious flood occurred in February of 1986 which claimed the lives of three people and caused \$100 million in damages (1986 dollars). The Federal Government first became involved with the Napa River in 1938 when preliminary examinations and surveys were conducted. The Flood Control Act of 1944 followed. However funds were never appropriated. In 1975 the Federal Government issued a General Design Memorandum (GDM) and an Environmental Impact Statement (EIS). The GDM proposed general flood control design features and recreational additions. The GDM was opposed by voters by referendum election in 1976 and again in 1977. Following the 1986 flood, the Napa County Flood Control District requested the project be reactivated.

In 1995 general flood features were proposed to manage major flood events, and in 1998 a Supplemental General Design Memorandum (SGDM) was approved as a basis of design for the Napa Project. The project covers a reach of approximately 7 miles along the Napa River and Napa Creek (see Figure 1). The project consists of flood control features such as excavation of marsh plains and floodplains, construction of new setback levees and floodwalls, a large dry bypass diverting flood flows, and construction of three new pump stations. The project also includes recreation features, including several miles of new recreation trails. The project has been under construction since 2000, and approximately half of the project has been completed. There are two ongoing construction contracts, and 7 future contracts remaining to design and construct. As such, there are several sets of plans and specifications to complete the project.



One of these features was a channel bypass through the city which would divert flood flows around a portion of the city. The next scheduled implementation document for the Napa Project is final plans and specifications for the Napa Dry Bypass. The dry bypass feature will be 1,300 feet in length and would begin at McKinstry Street and the Napa River and would terminate back at the Napa River past First Street (see Figure 2). An energy dissipation structure is planned just downstream of McKinstry Street to reduce the velocity and energy forces of the flows within the dry bypass so as not to cause additional flooding or damage to infrastructure prior to re-entering the Napa River. At the top of the bypass will be floodwalls and two floodgates where McKinstry Street enters/exits the bypass. The bypass feature is noted as the left-most arrow denoted by the words “Bypass Excavation and Oxbow Floodwalls and Bypass Pump Station, Scheduled for 2011-17, Corps Project” on the map provided in Figure 1. There appear to be two roads parallel to Soscol Avenue located between Soscol and the Napa River. McKinstry Street is visible in Figure 2 as the road closest to the river. As a reference, the other thoroughfare is the bridge belonging to the Napa Valley wine train.

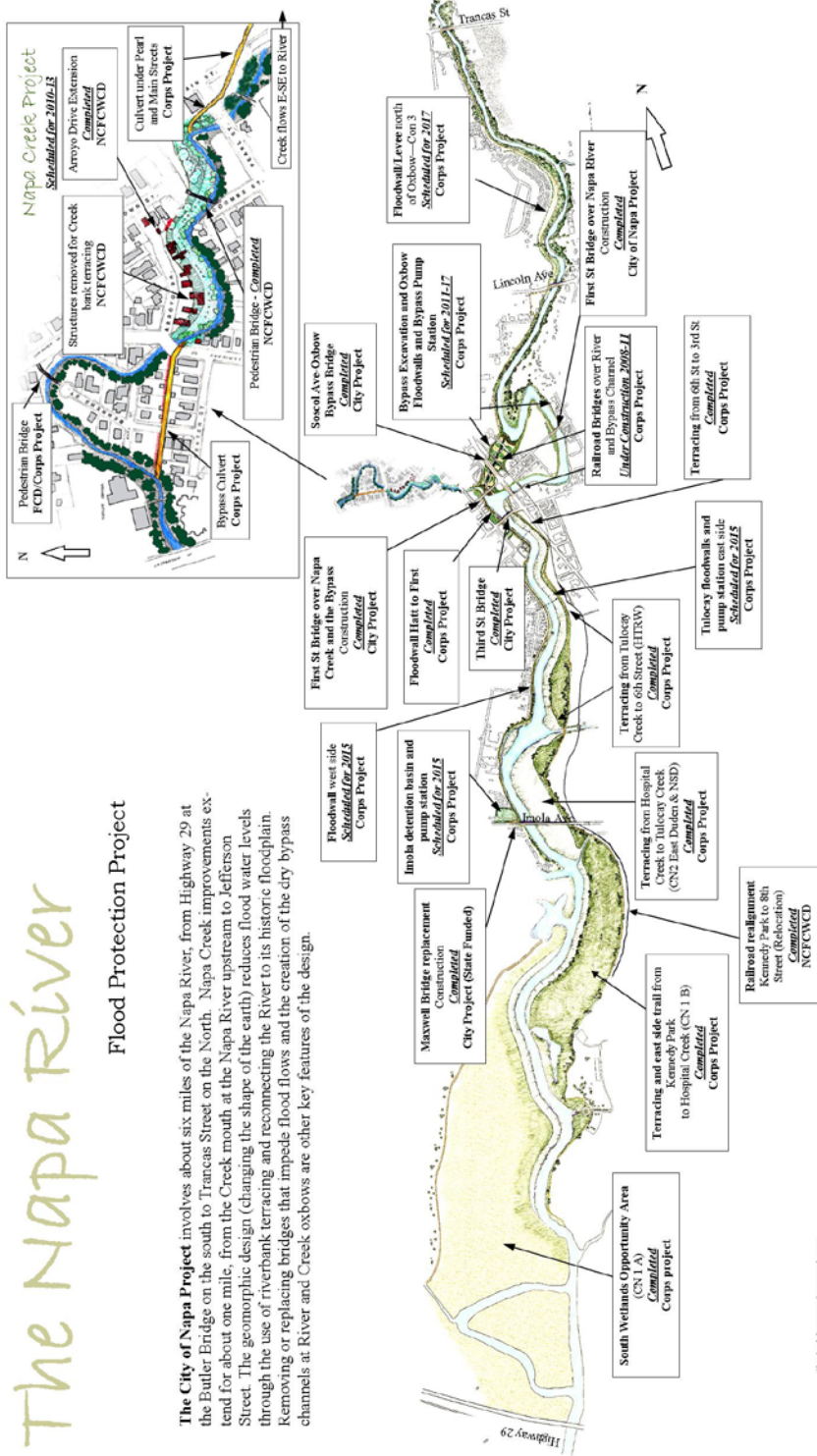
Documentation of another kind related to future costs and benefits are necessary for any Corps project per ER 1105-2-100. The document is more commonly referred to as a Limited Reevaluation Report (LRR). In addition, EC 11-2-200 specifies that an economic update will be required for projects under construction when the date of the economic analysis is more than 5 years old. An LRR determines the economic feasibility, and/or incremental justification of continuing or adding to the project. It provides an interim response to the original authority (Napa River was enacted as part of the Flood Control Act of 1965 under P.L. 89-298, from Edgerley Island to Trancas Street and Napa Creek was added to the project authorization by the Flood Control Act of 1976 (P.L. 94-587)). Although LRR’s can relook at the entire project and evaluate new alternatives, the Napa project has designated features that now require reevaluation. Since an economic update had not been conducted since fiscal year 1998, the Sacramento District undertook the task of beginning an LRR process. The preliminary task under the LRR was determining what was left to construct which was reevaluated with respect to design and cost in order to provide an economic update.

The remaining features left to evaluate under the LRR are what remains to be added to this review plan from an engineering standpoint with respect to design and construction. Future features have yet to be added to this plan, and thus this plan is a living document with design or construction features continually added as they become funded. The features which remain to be added are floodwalls, levees, and 3 planned pump stations from Imola Avenue to halfway between Lincoln and Trancas Streets.

# The Napa River

## Flood Protection Project

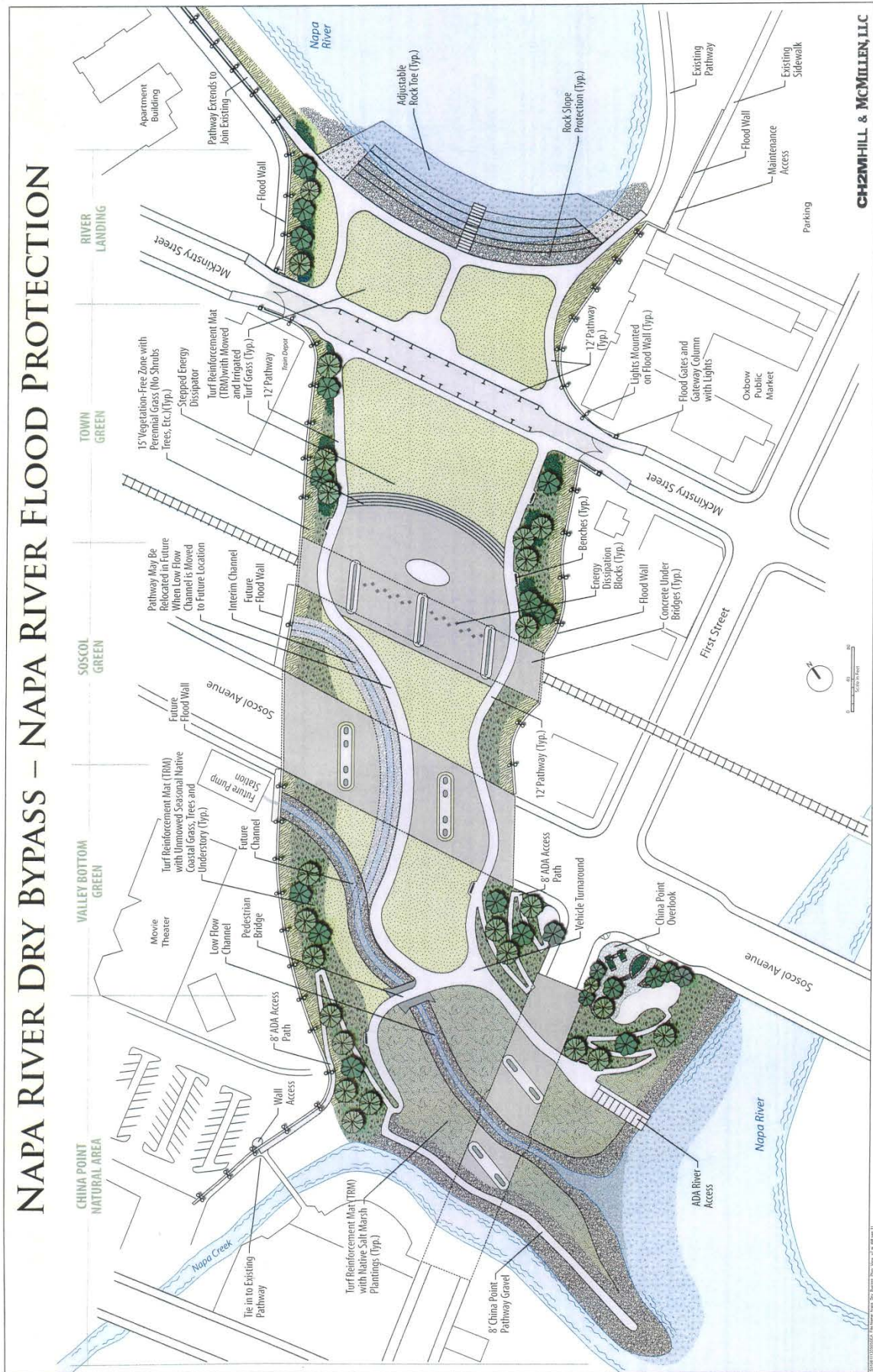
The **City of Napa Project** involves about six miles of the Napa River, from Highway 29 at the Butler Bridge on the south to Francas Street on the North. Napa Creek improvements extend for about one mile, from the Creek mouth at the Napa River upstream to Jefferson Street. The geomorphic design (changing the shape of the earth) reduces flood water levels through the use of riverbank terracing and reconnecting the River to its historic floodplain. Removing or replacing bridges that impede flood flows and the creation of the dry bypass channels at River and Creek oxbows are other key features of the design.



All available are subject to change.

Figure 1. The Various Features of the Napa Flood Protection Project.

# NAPA RIVER DRY BYPASS – NAPA RIVER FLOOD PROTECTION



CH2MHILL & MCMILLEN, LLC

Figure 2. Details of the Napa Dry Bypass – a Napa River Project Feature.

### 3. WORK PRODUCTS

**A. General.** What remains to be covered under this review plan are documents/products for the Napa River/Napa Creek Project including plans and specifications for future construction contracts, ongoing and future construction contracts, and operation and maintenance manuals. The remaining design work includes final design (plans and specifications) for the dry bypass, setback levees and floodwalls, and three pump stations. The next implementation document to begin final design is the Napa Dry Bypass Plans and Specifications.

**Table 3-1. Anticipated Implementation Products for the Napa River Flood Protection Project in the Anticipated Order of Occurrence**

Work Product	Notes
Bypass Design	
Oxbow Bank Protection Design	
Contract C3 Design	Floodwall and levees north of Oxbow
Contract C2 East Design	Floodwall and trail design
Tulocay and Imola Pump Station Designs	
Bypass construction	
Oxbow Construction	
C2 East Construction	
Tulocay and Imola Pump Station Construction	
Bypass Pump Station Design	
C3 Construction	
Bypass Pump Station Construction	

For future reviews, additional appendices will be added to this review plan at the corresponding timeline.

### 4. SCOPE OF REVIEW

**A. General.** The scope of this review plan will describe anticipated review activities for all current and remaining implementation documents for the Napa Project, but will be primarily focused on the next scheduled document, which are the plans and specifications for the Dry Bypass construction contract. This review plan and product specific review appendices will be updated to address more details of the review of other implementation documents (current and future plans and specifications, current and future construction contracts, and operation and maintenance manual) as the schedule and funding of these documents is more clearly defined. These features will be added in the appendix as they become available. Table 4-1 provides and identifies the level of review activities for future implementation documents.

**B. District Quality Control (DQC).** DQC is an internal review process inherent in most products implemented within the COE. Generally the DQC is implemented during the development process as a check of adequacy for the work product. The DQC is carried out by staff familiar with the work product, but not responsible for the work product or managing the A-E contract which could include supervisors, team leaders, work leaders, designated individuals from qualified personnel to senior staff. DQC shall be applied toward all current and future Napa products including plans and specifications for levees and floodwalls, and the operation and maintenance manual. The quality assurance team for Napa will be



composed of PDT members, the local sponsor, and other professionals throughout the Sacramento district who are not Napa PDT members.

**C. Agency Technical Review (ATR).** The ATR is managed outside of the home office which is responsible for the work product. The ATR is mandatory for implementation products on a case-by-case basis. The review team (ATRT) shall be made up of subject matter experts capable of reviewing a work product for adequacy, completeness, and with respect to matters pertaining to life, safety, and property. An ATR shall be applied toward all current and future Napa products including plans and specifications for levees and floodwalls, and the operation and maintenance manual.

**D. Safety Assurance Review (SAR).** The Water Resources Development Act of 2007 included two separate requirements for review by external experts. The first, Section 2034, required independent peer review of project studies under certain conditions. The second requirement, Section 2035, required a Safety Assurance Review (SAR) for design and construction activities for hurricane and storm damage reduction, and flood damage reduction projects which pose a hazard to life safety.

All future implementation documents (including the upcoming Napa Dry Bypass P&S) including design/construction of levee and/or floodwall features, will recommend a SAR level review.

Table 4-1 is a summary of the status of the future documents needed for implementation for the Napa Project.

**Table 4-1. Documents Needed for the Napa Flood Control Project as it Relates to the Level of Review Necessary Prior to Implementation. A Check Mark Indicates the Level of Review Needed for a Particular Document.**

Document	DQC	ATR	SAR
Plans and Specifications	√	√	
Plans and Specifications for Levees/Floodwalls	√	√	√
Construction of Levees/Floodwalls			√
Operation and Maintenance Manual	√	√	√

**E. Timing & Sequence of Reviews.** The Napa Dry Bypass plans and specifications will be contracted by an A&E firm. The contracting process follows the Corps guideline of requiring the A-E design team to conduct its own quality control plan. In summary, the A-E quality control plan shall consist of providing the Corps with a list of review team personnel independent of the design team and the qualifications which dictate the member as a contributing reviewer. In the timing and the sequence of the work completion provided below, the A-E’s quality control team (denoted by the acronym ITRT for Independent Technical Review Team) will be submitting comments to the COE. The DQC, ATRT’s and IEPR’s review timing will coincide with the Corps PDT and the ITRT’s review period as described below.

**F. Model Certification.** If a model is needed, the process and the requirements for certification of models are provided herein. Model certification shall occur prior to the use of the model(s) and can occur at any point in the submittal timeline above depending on its need.

The criterion identified for model certification is technical soundness. Technical soundness reflects the ability of the model to represent or simulate the processes and/or functions it is intended to represent. The performance metrics for this criterion are related to theory and computational correctness. In terms of the theory, the certified model should: 1) be based on validated and accepted “state of the art” theory;

2) incorporate Corps policies and requirements; 3) properly incorporate the conceptual theory into the software code; and, 4) clearly define the assumptions inherent in the model. In terms of computational correctness, the certified model should: 1) employ proper functions and mathematics to estimate functions and processes represented; and, 2) properly estimate and forecast the actual parameters it is intended to estimate and forecast. Other criteria for certification are efficiency, effectiveness, usability and clarity in presentation of results. A certified model will stand the tests of technical soundness based on theory and computational correctness, efficiency, effectiveness, usability and clarity in presentation of results.

As of the publication of this document it is unknown which models might be employed in the future, if any, for the remaining work at Napa. The current models being employed on the bypass are hydraulic models able to provide estimates of water velocities and flow characteristics such as the height of the flow and whether the flow is subcritical or supercritical. A synopsis of each model being employed for the bypass is provided.

**RMA2:** a two-dimensional depth averaged finite element hydrodynamic numerical model, it computes water surface elevations and horizontal velocity components for subcritical, free-surface two-dimensional flow fields.

The model computes a finite element solution of the Reynolds form of the Navier-Stokes equations for turbulent flows. Friction is calculated with the Manning's or Chezy equation, and eddy viscosity coefficients are used to define turbulence characteristics. Both steady and unsteady (dynamic) problems can be analyzed.

RMA2 is a general-purpose model designed for far-field problems in which vertical accelerations are negligible and velocity vectors generally point in the same direction over the entire depth of the water column at any instant of time. It expects a vertically homogeneous fluid with a free surface.

**FESWMS:** has the capability to model hydraulic structures including bridges, roadway embankments, culverts, weirs, and drop-inlet spillways. In the finite element network, bridges and roadway embankments are represented with a collection of two-dimensional elements, which overlay the plan view of these structures. However, since culverts, weirs, and drop-inlet spillways are difficult to characterize with elements, these structures are modeled with either one or two node points, with these nodes representing points of inflow and outflow. An exception to this modeling technique occurs when a culvert spans a large channel or is large in comparison to the size of the defined floodplain elements; in this instance, the user should consider modeling the culvert with two-dimensional elements.

Should a model be required that has not been previously certified, the certification process listed above shall be employed. In addition, a separate review plan is being prepared for limited reevaluation report (LRR). Part of the review plan will cover this requirement for hydraulic certification. The following level of certification shall be followed should a model be needed

**Table 4-2. Corps of Engineers Model Certification Process**

Exhibit 1 Certification Process for Existing Models	
Step 1	Proponent identifies model to be used for a national, regional, or local application.
Step 2	Proponent submits model and documentation to an appropriate Corps certifying team.
Step 3	<p>The team utilizes the following criteria to determine the appropriate level of review. The team has final approval on the level of review.</p> <p><b>Level 1</b> review is for highly complex models where there could be a high risk of incident that could result in major impacts.</p> <p><b>Level 2</b> review is for models of lesser complexity than Level 1 models with lower risk of impacts that could still result in impacts.</p> <p><b>Level 3</b> review is for routine and non-complex models that have a minor impact.</p> <p><b>Level 4</b> review is for current frequently used models that were developed by Corps Districts, Corps Labs and other agencies and contractors that have withstood historical informal reviews. The capabilities and limitations of these models are generally well understood. The review of frequently used existing products will include examination of the individual product’s review documentation to determine if the product warrants certification without a level 1 or 2 review.</p>

**G. Meeting Reports.** Meeting reports will be prepared for significant meetings with the client and agencies. If the A-E is the responsible party/ individual for a meeting, they will ensure that the report is prepared. Any meeting, at which decisions are made, action items are assigned, or agreements reached must be documented. All actions will be noted in the meeting report.

**H. Value Engineering Studies.** The Corps' current policy requires that value engineering (VE) studies be performed on all USACE projects or project elements with a programmed cost of \$2,000,000 or more unless a determination can be made that a study would not be cost effective. A VE study shall be performed on the earliest document available that satisfies the functional requirements of the project or project element and includes a comprehensive (M-CACES) cost estimate. The milestone is achieved on the date that the VE study is approved by the Chief of Engineering Division. A VE study has been conducted for the Napa Creek and Bypass features during the 35% design phase.

## 5. AGENCY TECHNICAL REVIEW PLAN

For designs and specifications, the ATR is managed by the RMO. For this project, the RMO will identify individuals to perform the ATR. The Sacramento District can provide suggestions on possible reviewers.

**A. General.** An ATR manager shall be designated by the RMO for the ATR process. The proposed manager will have expertise in design and construction. The ATR leader shall provide the following.

Information necessary to team members on the project, the schedule, and the information necessary to conduct a proper review.

Setting up the communication with the PDT, for providing a summary of critical review comments, collecting grammatical and editorial comments from the ATR team.

Ensuring that the ATR team 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.

The ATR will be conducted for hydrology and hydraulic design, civil design, structural design, and geotechnical engineering. Safety assurance factors will be addressed by the engineering reviewers.

**B. Agency Technical Review Team (ATRT).** The ATRT will be comprised of individuals that have not been involved in the development of the decision document and will be chosen based on expertise, experience, and/or skill. The members will roughly mirror the composition of the PDT and wherever possible, reside outside of the District Office (MSC, per EC Section 9(1)(a)). In general, the review team members will each have a minimum of 10 years of experience and education in their respective discipline. A statement of qualifications is required for acceptance of review team members. The ATRT members will be identified by the lead RMO at the time the review is conducted and will be presented in Appendix B. The Sacramento District, or SPD, may nominate ATRT members.

If other disciplines/functions are needed to be involved in the project, they shall have similar general experience and educational backgrounds.

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

- (1) The technical lead will notify the ATR leader when the document has been posted for review.
- (2) The team will use DrChecks to document the ATR process. The technical lead will facilitate the creation of a project portfolio in the system which allows PDT and ATR members access. An electronic version of the design and/or drawings will be posted at <ftp://ftp.usace.army.mil/pub/> at least one business day prior to the comment period.
- (3) PDT members and the ATR lead will notify the technical lead as to when comments in the system are final.
- (4) A revised electronic version of the report and appendices with comments incorporated shall be posted at <ftp://ftp.usace.army.mil/pub/> for use during back checking of the comments, or be posted in DrChecks.

**D. Review.**

ATRT responsibilities are as follows:

Reviewers shall review preliminary drawings and the scope of work to gain an understanding of the project. Comments on preliminary drawings and scope shall be submitted into DrChecks.



Reviewer's 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.

Grammatical and editorial comments shall be provided, particularly for the specification portion of the package submittal. However, these comments should not be submitted into DrChecks. Grammatical comments should be submitted to the ATR leader via electronic mail using email or the track changes feature in the MS Office compatible document or as a hard copy mark-up. The ATR leader shall provide these comments to the technical lead.

Review comments shall contain these principal elements.

- A clear statement of concern
- The basis for the concern, such as principle, policy, or guidance
- Significance for the concern
- Specific actions or recommendations to resolve the comment
- The "Critical" comment flag in DrChecks shall not be used unless the comment is discussed with the ATR leader first.

PDT responsibilities are as follows:

Depending on the responsibility for the work effort, either the PDT or the A-E shall review comments provided by the ATRT in DrChecks and provide responses to each comment using "Concur, Non-Concur, or For Information." 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.

PDT members shall contact ATRT members, either by telephone or email, to discuss any "Non-Concur" responses prior to submission.

#### **E. Resolution.**

ATRT Reviewers shall back check PDT responses and either close the comment or attempt to resolve any disagreements. Telephone calls shall be used to resolve any conflicting comments and responses.

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 rebuttal, clarification, or additional information, or because the comment was advisory, primarily based on individual judgment or opinion, or editorial. If the reviewer and responder cannot resolve a comment, it should be brought to the attention of the ATR leader. If the ATR leader cannot resolve, the ATR leader and the PDT technical lead will attempt to resolve. ATRT members will keep the ATR leader informed of problematic comments. The vertical team will be informed of any unresolved comments, policy variations, or other issues that may cause them concern during HQ review. A comment may also be closed when it has been addressed or deferred to the policy compliance review process by HQUSACE.

**F. Certification.** ATR certification is required for the final designs and specifications (see Appendix A for ATR certification statement). A summary report of all comments and responses will be available throughout the design process.

## **6. TYPE II IEPR (SAR) REVIEW**

**A. General.** Independent External Peer Review (IEPR) is the most independent level of review, and is applied to cases that meet certain criteria and are such that a critical examination by a qualified team outside of USACE is warranted. As such, the most likely process for obtaining this review is the procurement of an outside review team through USACE CT.

A Type II IEPR SAR shall be conducted on design and construction activities for hurricane, storm risk management, and flood risk management, including projects where potential hazards pose a significant threat to human life. In addition, other factors determine whether a Type II SAR is needed. These include, or applies, to the following.

Flood risk management projects

Risk informed decision where the failure of the project poses a significant threat to human life

The project design requires redundancy and robustness

**B. Review Teams and Panels.** IEPR panels will be made up of independent, recognized experts (outside of USACE) in the appropriate disciplines, representing a balance of areas of expertise suitable for the review being conducted. Panel members will be selected using the National Academies of Science (NAS) policy for selecting reviewers. The IEPR panel will conduct the review of the design and/or construction activities prior to the initiation of physical construction and, until construction activities are completed, periodically thereafter on a regular schedule. The IEPR panel will consider the assurance of public health, safety, and welfare when conducting reviews. The Review Management Office for Type II IEPR reviews is the USACE Risk Management Center (RMC).

### **C. Resolution.**

SAR Reviewers shall back check PDT responses and either final the comment or attempt to resolve any disagreements. Telephone calls shall be used to resolve any conflicting comments and responses. A report shall be kept of comments/resolutions by the IEPR team. The review team will prepare the final IEPR review report which shall be provided to the PDT technical lead upon completion of the review process. The comments/resolutions log shall be provided as a part of the IEPR review report.

A reviewer may final 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 rebuttal, clarification, or additional information, or because the comment was advisory, primarily based on individual judgment or opinion, or editorial. If the reviewer and responder cannot resolve a comment, it should be brought to the attention of the IEPR leader. If the IEPR leader cannot resolve, the leader and the PDT technical lead will attempt to resolve. IEPR members will keep the IEPR leader informed of problematic comments. The vertical team will be informed of any unresolved comments, policy variations, or other issues that may cause them concern during HQ review. A comment may also be finalized when it has been addressed or deferred to the policy compliance review process by HQUSACE.

All review panel comments in the review report shall be reviewed by a team leader that represents the group and review comments for conflicts among members. The team lead is to seek consensus, but where there is a lack of consensus, note the non-concurrence and why. A comment resolution meeting shall take place, if needed, to decide upon the best remediation of issues and resolution of comments. A suggested report outline is an introduction, the composition of the review team, a summary of the review during design, a summary of the review during construction, any lessons learned in both the process and/or design and construction, and appendices for conflict of disclosure forms, for comments to include any appendices for supporting analyses and assessments of the adequacy and acceptability of the methods,

models, and analyses used. All comments in the report will be finalized by the panel prior to their release to USACE for each review plan milestone.

#### **D. Team Selection.**

A contractor can be used to carry out the requirements of a Type II - IEPR panel, including the selection of members for the Type II- IEPR panel. Type II IEPR panels established by USACE personnel may require compliance with the Federal Advisory Committee Act and should only be established after consultation with local counsel. Unlike Type I – IEPR panels, competition for Type II – IEPR contractors may not be limited to OEOs. The solicitation for such a contract should include the minimum professional requirements for panel members, but should not be so narrowly written that only specific persons may be selected.

### **7. PUBLIC REVIEW**

The public will have the opportunity to review the Napa Review Plan. Public dissemination of the documents will be posted at a USACE web site for a minimum of 45 days after the review plan has been finalized and approved by the commander. Comments received by the public during the posting period could impact the schedule depending on the severity of the issues in question. The web site will note that the public can seek comments from scientific or professional societies. A compilation of all comments shall be forwarded to the ATR team leader within 2 weeks of receipt, will be forwarded to the external SAR teams, and may ultimately be forwarded to the design and/or construction team for inclusion as part of the overall work if deemed necessary. Upon completion of the review, comments shall be consolidated in a matrix and addressed, if needed. A comment resolution meeting shall take place, if needed, to decide upon the best remediation of issues and resolution of comments. A summary of the comments and resolutions will be included in the document. Upon completion of the Type II IEPR, the review report, the comments, the responses, etc., shall be posted to the USACE web site for a minimum of 45 days. The posting shall occur within 30 days of receipt of the information from the IEPR team.

### **8. REVIEW COSTS**

The current estimated cost for all reviews (DQC, ATR, SAR) for the remaining project is estimated at \$481,000, not including construction reviews. The estimate includes the cost to review plans, specifications, and DDR. SAR costs during construction will be negotiated and awarded prior to award of the construction contract.

**Table 8-1. Actual and Estimated Costs for Review of the Dry Bypass Design Feature with Respect to Design and OMRR&R Manual, and the Estimated Cost of Reviewing the Oxbow Floodwalls, Including Complete Project Review with SAR.**

Product	Type of Review	Cost (Est. or Actual)	Cost
Design Package	DQC <sup>1</sup>	Estimated	\$100,000
Design Package	ATR <sup>2</sup>	Estimated	\$18,500
Design Package	SAR <sup>3</sup>	Actual	\$52,297
OMRR&R	DQC	Estimated	\$15,000
OMRR&R	ATR	Not Yet Conducted	\$15,000
OMRR&R	SAR	Actual	\$10,247
Oxbow Floodwalls Designs	DQC	Estimated	\$100,000
Oxbow Floodwalls Designs	ATR	Estimated	\$20,000
Oxbow Floodwalls Designs + Project Review	SAR	Estimated	\$150,000
<b>TOTAL</b>		<b>Estimated</b>	<b>\$481,000</b>

<sup>1</sup> – The DQC review included the 35%, 65, 95 and 95% backcheck review for the Napa Dry Bypass

<sup>2</sup> – The ATR review included the 65%, 95, and 95% backcheck review for the Napa Dry Bypass

<sup>3</sup> – The SAR review included the 95% and 95% backcheck review for the Napa Dry Bypass

Costs that are estimated are derived through lists which were created during the review. For example, an electronic DQC list was found for the 65% DQC review that listed 9 disciplines at a total cost of \$32,000. The \$100,000 estimate was derived considering that there were 3 reviews and a backcheck for the 95% submittal prior to the final.

Reviews for future contracts are forthcoming and are unknown at this time and thus are estimated. As costs are developed/estimated they will be included in the appendix for the feature details described.

## 9. POINTS OF CONTACT

**A. Project Delivery Team.** The PDT is comprised of those individuals directly involved in the scoping and the review of the design package. Individual contact information and disciplines are presented in Appendix B. All work products associated with this project will undergo review by the PDT for a determination of adequacy.

**B. Vertical Team.** The Vertical Team includes District management, Division Support Team (DST), and Regional Integration Team (RIT) staff. Specific points of contact for the Vertical Team can be found in Appendix B. Currently Karen Berresford is the district support team lead for the vertical team. Her contact information is [Karen.g.berresford@usace.army.mil](mailto:Karen.g.berresford@usace.army.mil) at 415-503-6557.

**C. IEPR.** The SAR review by an external review team not affiliated with the COE will require a procurement contract that will require CT's review and approval. At the time of this publication it is unknown which entity will be providing support to USACE. An IEPR is not estimated will be needed until approximately the 2<sup>nd</sup> quarter of 2011.

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

SPK Point of Contact: William Doyle, 916-557-7429

RMO Point of Contact: Colin Krumdieck, 720-215-5545

Vertical Team Contact: Karen Berresford, 415-503-6505

## **10. APPROVALS**

The PDT will carry out the Review Plan as described. The technical lead will submit the Review Plan to the RMO for review and recommendation for approval. After RMO review and recommendation, the PDT District Technical Lead will forward the Review Plan to the respective MSC for approval. Formal coordination with the RMO will occur through the PDT District Technical Lead.

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**REVIEW PLAN**

**NAPA RIVER/NAPA CREEK FLOOD PROTECTION PROJECT  
NAPA, CALIFORNIA**

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**APPENDIX A  
A-E CONTRACTOR STATEMENT OF TECHNICAL REVIEW**

**COMPLETION OF QUALITY ASSURANCE REVIEW, AGENCY TECHNICAL REVIEW AND  
INDEPENDENT TECHNICAL REVIEW  
NAPA RIVER/NAPA CREEK FLOOD PROTECTION PROJECT, CALIFORNIA  
FINAL PLANS AND SPECIFICATIONS**

The District has completed the (*type of product*) of (*project name and location*). Notice is hereby given that (1) a Quality Assurance review has been conducted as defined in the Quality Assurance Plan and (2) an agency technical review that is appropriate to the level of risk and complexity inherent in the project, has been conducted as defined in the project's Quality Management Plan, and (3) an Independent External Peer Review (IEPR) was performed with respect to life safety issues. The IEPR was performed by an outside entity made up of independent, recognized experts selected using the National Academies of Science (NAS) policy for selecting reviewers. During the ATR review, compliance with established policy principles and procedures, utilizing justified and valid assumptions, was verified. This included review of: assumptions, methods, procedures, and material used in analyses, alternatives evaluated, the appropriateness of data used and level obtained, and reasonableness of the result, including whether the product meets the customer's needs consistent with law and existing Corps policy. The review also assessed the DQC documentation and made the determination that the DQC activities employed appear to be appropriate and effective. The agency technical review was accomplished by (*A-E*). The IEPR was accomplished by (*Entity*). All comments resulting from QA, ATR, and IEPR have been resolved.

\_\_\_\_\_  
(Signature)  
QA Review Team Leader

\_\_\_\_\_  
Date

\_\_\_\_\_  
(Signature)  
Project Manager

\_\_\_\_\_  
Date

## **CERTIFICATION OF AGENCY TECHNICAL REVIEW**

A summary of all comments and responses are provided. Significant concerns and the explanation of the resolution are as follows:

(Describe the major technical concern(s), possible impact(s), and resolution(s), if any, below. If unable to provide below, please attach.)

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

\_\_\_\_\_  
(Signature)  
Principal, A-E Contractor

\_\_\_\_\_  
Date

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**REVIEW PLAN**

**NAPA RIVER/NAPA CREEK FLOOD PROTECTION PROJECT  
NAPA, CALIFORNIA**

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**APPENDIX B  
ACRONYMS AND ABBREVIATIONS**

<b><u>Term</u></b>	<b><u>Definition</u></b>	<b><u>Term</u></b>	<b><u>Definition</u></b>
AAR	After Action Review	RIT	Regional Integration Team
A-E	Architect-Engineer (company)	RMO	Regional Management Office
ATR	Agency Technical Review	RTS	Regional Technical Specialists
ATRT	Agency Technical Review Team	SPD	South Pacific Division
EC	Engineering Circular	USACE	U.S. Army Corps of Engineers
EM	Engineering Manual	USPS	U.S. Postal Service
COE	Corps of Engineers	WRDA	Water Resources Development Act
DDR	Design Documentation Report		
DQC	District Quality Control		
FACA	Federal Advisory Committee Act		
FRM	Flood Risk Management		
HQ	Headquarters		
IEPR	Independent External Peer Review		
ITR	Independent Technical Review		
ITRT	Independent Technical Review Team		
	Microcomputer Aided Cost		
MCACES	Engineering System		
	Management Services Center		
MSC	(district)		
MS	Microsoft Computer Software		
NEPA	National Environmental Policy Act		
OEO	Outside Eligible Organization		
OMB	Office of Management and Budget		
PCX	Planning Center of Expertise		
PDT	Project Delivery Team		
PM	Project Manager		
PMP	Project Management Plan		
QMP	Quality Management Plan		



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**REVIEW PLAN**

**NAPA RIVER/NAPA CREEK FLOOD PROTECTION PROJECT  
NAPA, CALIFORNIA**

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**APPENDIX C**

**Contract No. W91238-10-D-0012 Task Order 0002 Napa Dry Bypass  
Plans and Specifications for the Napa River Flood Protection  
Project, Napa, CA**

**Project Management and Design Quality Control Plan**

September 17, 2010

**Client:** U.S. Army Corps of Engineers – Sacramento District **Project Manager:** Morton McMillen, McMillen, LLC **QA/QC Manager:** Steve Spickelmier, McMillen, LLC

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## SECTION 1.0 PROJECT BACKGROUND AND DESCRIPTION

McMillen, LLC's (McMillen) team members use the Quality Management (QM) Plan procedures set forth in CESPD R 1110-1-8 as applicable for A-E consulting firms, particularly Appendix C for Planning Studies and Appendix D for Engineering Studies. The team will approach our review procedures using the same procedures that are employed by the U.S. Army Corps of Engineers (USACE), including Independent Technical Review (ITR) teams that are identified by the QM Managers according to the type of study and review requirements. With the combined depth of available personnel on the team, we are able to field ITR teams that consist of varied individuals according to the specific needs of the review effort.

Our senior quality management team for this contract will include Paul Larson, PE, Steve Spickelmier, George Robison, PhD, Ken Green, PE and Ken Schnieder, AIA, LEED. Our QM Managers will be responsible for identifying the teams for each task order compiled from individuals that are independent and do not have either work responsibilities or supervisory responsibilities related to the study team. They will also be responsible for ensuring that Quality Control (QC) Certification takes place. From the onset of each task order, the QM managers will identify a Review Team Leader, who will be responsible for developing a Quality Control Plan (QCP) for the study. This QCP will include a statement of the plan objectives, a statement of the guidelines that will be followed for the review, a roster of the study team and review team members, a list of expected documents, a milestone list and schedule, and any deviations that are expected from typical or previously approved QCPs.

As the prime contractor and Program Manager, McMillen will hold all subconsultants to the same high level of quality that is expected by the USACE, and that we demand from our own staff. In order to achieve this objective, subconsultants will act as integral parts of both the study team and the review team.

The McMillen Team's quality assurance and control program is designed to:

- Actively include all levels of project management in the quality assurance and control program.
- Ensure that quality assurance and control is an integral part of the project and not simply an "end of job" review.
- Consider quality objectives and standards as equal or superior to budget and schedule considerations in all project management decisions.
- Ensure that developed scopes of work are technically complete and workable considering budgetary and scheduling constraints.
- Review adequacy of budgets and schedules for performing the work.
- Commit necessary resources to achieve the project objectives set by the USACE.
- Ensure frequent communication on progress of the work, problems, and accomplishments.
- Provide periodic review of project performance related to the planned schedule and budget goals.
- Fulfill commitments to quality, integrity, and propriety.
- Assure credibility and credentials of project personnel.
- Establish a quality assurance project plan for work on assignments that include field or laboratory investigations.
- Audit all work assignments.

- Assist personnel with appropriate training for work assignments.
- Ensure that all data are scientifically valid, defensible, representative, and of known and acceptable precision and accuracy.
- Anticipate, identify, and avoid potential problems in completing the scope of work.
- Require in-house peer review of work assignment performance.

The McMillen Team contains an excellent group of very experienced professionals that make up our Quality Control Managers.

<b>Quality Control Manager</b>	<b>Years Experience</b>	<b>Responsible Field</b>
Paul Larson, PE	19	Structural Design
Steve Spickelmier	40	Civil Design
George Robison, PhD	25	Hydraulic Design
Ken Green, PE	40	Geotechnical Design
Ken Schneider, AIA, LEED	16	Electrical Design

## SECTION 2.0 DESIGN MANAGEMENT OVERVIEW

### 2.1 Management Philosophy

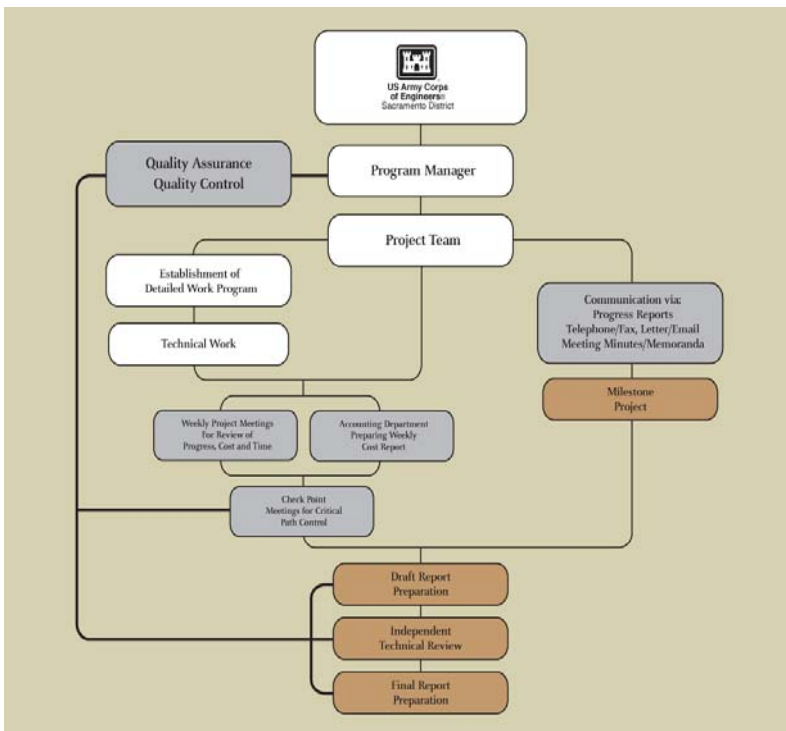
Quality Assurance and Quality Control are given a very high priority at McMillen. We are committed to assuring a high quality of service and products at every level of the team and every aspect of each task order. Our internal Quality Assurance and Quality Control (QA/QC) procedures, are consistent with the requirements and recommendations described in ER 1110-112 (Quality Management), and ER 1110-2-1150 (Engineering and Design for Civil Works Projects). We tailor our QA/QA plans to meet the Corps requirements as outlined within this plan.

### 2.2 Management Approach

The McMillen management approach to ensuring that quality control and quality assurance are integrated into each task order is summarized as follows:

- 1 Our quality control requirement is applied to all task orders, regardless of size.
- 2 Quality control consists of normal supervision, review by the project engineer, and independent or peer review at designated stages.
- 3 Quality control shall be a deliberate process, and will be planned and carried out under the supervision of the project manager, from inception through completion.
- 4 When subconsultants are involved on the project, special arrangements shall be made to

coordinate the subconsultants' Design Quality Assurance Plan with our quality control plans and efforts.



The McMillen Team's proposed program management organization and structure is shown in Figure 1 (Team Management Plan). This figure identifies the relationships between the Sacramento District, the Team's Program Manager, Project Team members, Quality Managers and our scheduling and timeline management, cost management, quality management and product preparation, review and finalization.

**Figure 2-1 Team Management Plan**



## SECTION 3.0 PROJECT TEAM

### 3.1 Organization

- The Corps Project Management Team is comprised of Bert Brown and Dave Cook.
- McMillen Team is comprised of the following subconsultants:
  - o CH2M Hill (Electrical, Landscape Architect, Architect, and Geotechnical)
    - o Towill (Survey & Mapping)

Task assignments of project team members are outlined in Section 5 of this document.

### 3.2 Client

U.S. Army Corps of Engineers, Sacramento District 1325 J Street Sacramento, CA 95814-2922

#### Contracting Division

Contracting Officer:

**Carolyn Mallory, CECT-SPK**

Office Phone: 916-557-5203 Email: [Carolyn.E.Mallory@usace.army.mil](mailto:Carolyn.E.Mallory@usace.army.mil)

#### Engineering Division

Project Manager:

**Dave Cook**

Office Phone: 916-557-7890 Email: [Dave.C.Cook@usace.army.mil](mailto:Dave.C.Cook@usace.army.mil)

Project Manager – Napa Wine Train Project:

**Bert Brown**

Office Phone: 916-557-6632 Email: [Bert.A.Brown@usace.army.mil](mailto:Bert.A.Brown@usace.army.mil)

Technical Oversight:

**Will Hall**

Office Phone: 916-557-6646 Email: [William.Hall@usace.army.mil](mailto:William.Hall@usace.army.mil)

Project Engineer/Civil Engineer:

**William Doyle**

Office Phone: 916-557-7429 Email: [william.a.doyle@usace.army.mil](mailto:william.a.doyle@usace.army.mil)

Hydraulic Engineer:

**Mike Lin**

Office Phone: 916-557-7967 Email: [mike.c.lin@usace.army.mil](mailto:mike.c.lin@usace.army.mil)

Geotechnical Engineer:

**Jane Bolton**

Office Phone: (916) 557-7637 Email: [Jane.M.Bolton@usace.army.mil](mailto:Jane.M.Bolton@usace.army.mil)

Environmental:

**Jeff Koschack**

Office Phone: Email: [jeff.a.koschack@usace.army.mil](mailto:jeff.a.koschack@usace.army.mil)

### **3.3 Project Development Team**

#### McMillen

Contract Manager:

**Mara McMillen**

Office Phone: (208) 342-4214 Cell Phone: (208) 869-4007 Fax: (208) 342-4216 Email: [mara.mcmillen@mcmillen-llc.com](mailto:mara.mcmillen@mcmillen-llc.com)

Project Manager:

**Mort McMillen, PE**

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Structural Engineer:

**Chris Boyd, PE**

Office Phone: (208) 342-4214 Cell Phone: (208) 819-0808 Fax: (208) 342-4216 Email: [chris.boyd@mcmillen-llc.com](mailto:chris.boyd@mcmillen-llc.com)

Hydraulic / Hydrology:

**Dan Axness, PE**

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Quality Control Manager:

**Steve Spickelmier**

Office Phone: (208) 342-4214 Fax: (208) 342-4216 Email: [steve.spickelmier@mcmillen-llc.com](mailto:steve.spickelmier@mcmillen-llc.com)

Administration Assistant:

**Meg Floyd**

Office Phone: (208) 342-4214 Fax: (208) 342-4216 Email: [meg.floyd@mcmillen-llc.com](mailto:meg.floyd@mcmillen-llc.com)

Principal-in-Charge:

**Mark Bowen**

Office Phone: (208) 345-5314 Fax: (208) 472-4755 Email: [Mark.Bowen@CH2M.com](mailto:Mark.Bowen@CH2M.com)

Geotechnical Engineer:

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Architect:

**Chas Filanowicz**

Office Phone: (208) 340-7913 Fax: (208) 472- 4755 Email: [cfilanow@ch2m.com](mailto:cfilanow@ch2m.com)

Surveyor:

**Frank Borges**

Office Phone: (925) 682-6975, Ext 205 Cell Phone: (925) 872-3857 Fax: (925) 682- 6390 Email:  
[frank.borges@towill.com](mailto:frank.borges@towill.com)

## **SECTION 4.0 PROJECT COMMUNICATION**

All communication will be coordinated through Mort McMillen, Project Manager. If Mort cannot be reached his assistant, Meg Floyd can be contacted. These communications include internal communication, contacts with client, consultants, and agencies; requests for data, meetings, or other information; and project documents (changes to scope/budget, meeting minutes, project memorandums and reports).

The intent by coordinating this communication is to reduce redundancy in discussing project issues and obtaining project information. Therefore, when direct contact between McMillen team members and outside sources is required, it will not be restricted, except to keep Mort McMillen informed in advance of who will be contacted, and of the information gathered from outside sources.

### **4.1 Client Communications**

Communications with the USACE, Sacramento District will primarily be handled by Mort McMillen. Monthly written project status reports will be prepared and emailed to the Bert Brown, Dave Cook and Will Doyle.

### **4.2 Internal Communication**

Mort McMillen will discuss project accomplishments to date, existing status, and upcoming work tasks with the McMillen project team as needed.

### **4.3 Contract Changes**

Mort or Mara McMillen are the only individuals with authority to issue Contract Addendums, Change Orders, or contract document changes that impact the scope of the project.

### **4.4 Written Communication Correspondence**

All written communication between team members will follow the McMillen standard memorandum format. Mort McMillen will receive copies of all correspondence.

External correspondence will follow the McMillen standard letter format. It will be signed by Mort McMillen or his designee.

### **4.5 E-mail Correspondence**

All e-mail communication between team members will be saved and archived in the project electronic files at project closeout.

#### **4.6 Documentation**

Documentation of project communication shall be in accordance with McMillen's Quality Assurance Procedures as outlined in the Quality Assurance/Quality Control Program.

#### **4.7 Telephone Communications**

Telephone communications of a significant nature will be documented on McMillen's telephone conversation record form and placed in the project files.

#### **4.8 Meetings**

Meetings with the client will be as noted in the attached scope of work (Appendix A). Mort McMillen, as needed, will schedule internal coordination or technical meetings.

#### **4.9 Meeting Reports**

Meeting reports will be prepared for significant meetings with the client and agencies. The McMillen individual responsible for a meeting will ensure that the report is prepared. Any meeting, at which decisions are made, action items are assigned, or agreements reached must be documented. All actions will be noted in the meeting report.

#### **4.10 Confidentiality**

All information being collected or developed that designated as confidential is not to be released outside of McMillen without approval of Mort McMillen. All confidential information requested by outside sources will be carefully reviewed by Mort McMillen prior to release.

#### **4.11 Filing of Correspondence**

Each piece of written correspondence will be placed in the project file in accordance with Section 10 herein.

## **SECTION 5.0 SCOPE OF SERVICES AND TASK ASSIGNMENTS**

The scope of services and deliverables under this delivery order are presented in the detailed Scope of Services included as Appendix A. Specific task assignments are outlined in the budget table in the Scope of Work, Appendix A.

## **SECTION 6.0 SCHEDULE**

The McMillen team uses the Microsoft Project software for developing initial project schedules, and tracking and maintaining the schedule during the course of the project. As shown in Figure 1, our requirements for a weekly meeting of the Project Team enables us to very closely monitor the progress of the project, and to identify any changes in project personnel or resources that may be required to meet project milestones and deliverable targets. It is the responsibility of Mort McMillen to be aware of any issues that may affect the team's ability to meet project schedules. Timely review of intermediate products and deliverables by the Review Team also ensures that project schedules are met. As part of our established project planning process, the Team will develop detailed project schedules that identify task and milestone completion dates. Completion dates for individual tasks are constantly monitored and modifications are made when necessary. Constant communication with our clients is a critical element of compliance with the performance schedules.

The project team has the specialized expertise and depth of staffing to provide the complete range of anticipated services. The project team has the manpower, resources, experience, and management capabilities to respond quickly and competently to the individual tasks as required by the Sacramento District. The team's experienced project manager and highly qualified, dedicated professional staff can ensure quality work, completed on schedule and within budget. The project team has the capacity to readily perform this IDIQ task by virtue of its qualified staff; active quality assurance programs, available equipment, planning tools, and standardized procedures developed during past projects.

A detailed schedule for the USACE, Napa Dry Bypass is attached in Appendix E.

## **SECTION 7.0 QUALITY CONTROL AND INTERNAL TECHNICAL REVIEW**

### **7.1 Independent Technical Review**

McMillen will perform an Independent Technical Review (ITR) of all design products at the 100% stage of completion. As part of this Project Management Plan and Guide, McMillen has developed a Quality Control (QC) Plan for approval after task order award that ensures an independent review of the project. This ITR QC Plan is enclosed as Appendix B. Included within this plan is the following:

- Title and description of the product under review.
- List of the names, disciplines, and firms of product team members.
- List of review team members (by corresponding discipline and firm).
- Schedule for performing the review(s).
- Reviewer qualifications/requirements.

McMillen understands the ITR does not relieve the design team from performing design computation checks and other peer review that is considered to be standard practice. Our team will conduct internal QA/QC reviews of work products and support documentation in accordance with the QA/QC guidelines. The ITR shall focus on: compliance with engineering principles and procedures; appropriateness of design criteria and engineering assumptions; factors of safety; completeness of design and level of detail.

The ITR process shall document each review performed using the standard comment/response process in the Dr. Checks database. Documentation of the ITR will include the following:

- Comments prepared by each review team member as submitted to the product team.
- Responses to each review team comment as prepared by the product team.
- Indication of the final disposition of the review team comment including a back check by the reviewer that the document was revised correctly.
  
- Certification signed by the review team leader indicating the review is complete.

The ITR certification form will be provided electronically. All comments shall be addressed to the satisfaction of the review team, unless otherwise approved by the USACE, prior to submission or delivery of the final product. Mort McMillen will coordinate the incorporation of comments from the ITR and other reviews, in order to make revisions concurrently. Process questions that arise during the ITR shall be forwarded to the Sacramento District Quality Control Manager. The District will perform Quality Assurance (QA) in conjunction with the QC performed by McMillen to insure that an independent review is accomplished and a quality product is prepared.

### **7.2 USACE Sacramento District Quality Control**

McMillen will respond to all comments using the Dr. Checks database made by the Quality Assurance, Agency Technical Review, and Safety Assurance Review teams.



## **SECTION 8.0 HEALTH AND SAFETY**

### **8.1 Assignments**

All McMillen employees and their team members shall protect themselves and their associates from injury or disease resulting from project activities. McMillen employees shall carry out their assignments with the health and safety of those involved as their primary concern. All employees will follow the USACE Safety and Health Requirements Manual (EM 385-1-1) while working in the field. This manual may be found at the following Internet address:

<http://www.hq.usace.army.mil/soh/em385/Section1.htm>

If necessary, we will assign a Health and Safety Coordinator who will advise and assist Mort McMillen to identify anticipated hazards, develop preventative actions, and communicate these hazards and actions to the project team. A Health and Safety checklist will be completed for the project and distributed to the project team.

### **8.2 Preventive Action**

McMillen will develop actions to be implemented during project activities, if required, to eliminate, or minimize, the exposure of the project team and other personnel to anticipated hazards. These may include specific personnel project assignments, safety procedures, monitoring protocols, protective gear (hard hats, safety vests, safety glasses, ear protection, boots, etc.) and emergency and contingency plans and contacts.

Preventive actions include maintaining safe working areas, and exercising caution and safe working practices while in the field. Personnel will be equipped with first aid kits for all field visits. All field team members will be provided with appropriate emergency numbers as well as the location of the nearest emergency medical treatment facility at the start of each site visit. Other preventive measures may be implemented by Mort McMillen as deemed necessary.

## **SECTION 9.0 BUDGET**

### **9.1 Project Budget**

Budgets for tasks are as indicated in the Scope of Work included in Appendix A.

### **9.2 Subconsultants**

All contracts with subconsultants will be administered by Mort McMillen. All subconsultant contracts must be reviewed internally by the contract administrator, as there are mandated terms, disclosures and confidential requirements.

### **9.3 Overtime**

The following policy will apply to the use of overtime on this project:

- Any and all overtime that eventually shows up in an individual's time sheet must be pre-authorized Mort McMillen.
- In accordance with Federal Labor Law, all "exempt" employees will be paid straight time for pre-authorized overtime, and all "non-exempt" employees will be paid time and a half for pre-authorized overtime.

## **SECTION 10.0 PROJECT ADMINISTRATION**

### **10.1 Drawing Requirements and Standards**

The format and standards for the design drawings shall follow the requirements outlined in the USACE Task Order Scope of Work for this contract.

### **10.2 Technical Specifications**

The format and contents of the technical specifications shall follow the requirements outlined in the USACE Task Order Scope of Work for this contract.

### **10.3 Design Documentation Report**

The format and contents of the design documentation report shall follow the requirements outlined in the USACE Task Order Scope of Work for this contract.

### **10.4 Project Filing**

Project files have been established for this project using the file control system shown in Appendix D. There will be a single central project file. It will be maintained at the Boise office of McMillen. All official documents are to go into the project files. This includes things that are received as well as those sent. Examples include:

All correspondence, both internal and external;  Reports from all meetings where decisions are made or agreements are reached;  Phone call recordings; memos and summaries.

### **10.5 Electronic Files**

A subdirectory for the storage of all project electronic files has been set up for this project on the project server as: P:\USACE\Sacramento\IDIQ 2010 Civil Works\TO#002 Napa Dry Bypass.

### **10.6 Invoicing Requirements and Schedule**

Invoices will be prepared monthly per standard practice. Draft invoices are prepared by McMillen's Project Controller, Lori Heilman. All draft invoices are reviewed by Mort McMillen before being finalized and sent to the client. Mort McMillen will review and approve the drafted invoice no later than the end of the month following the month in which the draft invoice is created.

## **SECTION 11.0 PROJECT CLOSE-OUT**

Project closeout will be in accordance with usual standard practice as outlined in the *Project Management Guide*. Mort McMillen will be responsible for the project close-out.

Close-out consists of the following four elements:

- Financial close-out
- Lessons learned
- Updating of marketing qualifications
- Document storage

Copies of all project documentation and documents should be contained in the project files and/or electronic, so they will be available for storage at close-out.

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**REVIEW PLAN**

**NAPA RIVER/NAPA CREEK FLOOD PROTECTION PROJECT**

**NAPA, CALIFORNIA**

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**APPENDIX D**

**Napa River Flood Protection Project  
Limited Reevaluation Report**

*Insert Napa LRR .PDF here (this page left intentionally blank)*

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**REVIEW PLAN**

**NAPA RIVER/NAPA CREEK FLOOD PROTECTION PROJECT**  
**NAPA, CALIFORNIA**

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**APPENDIX E**

**Review Plan Checklist**

(Implementation Only)

**Section II - Implementation Documents**

Review Plan Checklist

For Implementation Documents

**Date:** 5/12/2010

**Originating District:** Sacramento

**Project/Study Title:** Napa River/Napa Creek Flood Protection Project

**PWI #:**

**District POC:** William Doyle, 916-557-7429

**PCX Reviewer:** Not Applicable

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 1165-2-209 and should be explained. Additional coordination and issue resolution may be required prior to MSC approval of the Review Plan.

REQUIREMENT	REFERENCE	EVALUATION
<b>1. Is the Review Plan (RP) a stand alone document?</b>	EC 1165-2-209, Appendix B Para 4a	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
<p>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?</p> <p>b. Does it include a table of contents?</p> <p>c. Is the purpose of the RP clearly stated and EC 1165-2-209 referenced?</p> <p>d. Does it reference the Project Management Plan (PMP) of which the RP is a component including P2 Project #?</p> <p>e. Does it include a paragraph stating the title, subject, and purpose of the work product to be reviewed?</p> <p>f. Does it list the names and disciplines in the home district, MSC and RMO to whom inquiries about the plan may be directed?*</p>	<p>EC 1165-2-209            Para 7a</p> <p>EC 1165-2-209            Para 7a (2)</p> <p>EC 1165-2-209            Appendix B            Para 4a</p> <p>EC 1165-2-209,            Appendix B,</p>	<p>a. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>b. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>c. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>d. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>e. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>f. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>
<p><i>*Note: It is highly recommended to put all team</i></p>		



<p><i>member names and contact information in an appendix for easy updating as team members change or the RP is updated.</i></p>	<p>Para 4a</p>	
<p><b>2. Documentation of risk-informed decisions on which levels of review are appropriate.</b></p>	<p>EC 1165-2-209, Appendix B, Para 4b</p>	<p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>
<p>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)?</p> <p>b. Does it contain a summary of the CW implementation products required?</p> <p>c. DQC is always required. The RP will need to address the following questions:</p> <p>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?</p> <p>ii. Does it list the DQC activities (for example, 30, 60, 90, BCOE reviews, etc)</p>	<p>EC 1165-2-209 7a</p> <p>EC1165-2-209</p> <p>Para 15</p> <p>EC1165-2-209 Para 15a</p> <p>EC1165-2-209 Para 8a</p>	<p>ii. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>iii. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>iv. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>

<p>iii. Does it list the review teams who will perform the DQC activities?</p>	<p>EC 1165-2-209 Appendix B (1)</p>	<p>i. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>
<p>iv. Does it provide tasks and related resource, funding and schedule showing when the DQC activities will be performed?</p>	<p>EC 1165-2-209 Appendix B</p>	<p>ii. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>
<p>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:</p>	<p>4g EC 1165-2-209 Appendix B Para 4c</p>	<p>iii. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>
<p>i. Does it identify the ATR District, MSC, and RMO points of contact?</p>	<p>EC1165-2-209</p>	<p>iv. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>
<p>ii. Does it identify the ATR lead from outside the home MSC?</p>	<p>Para 15a</p>	
<p>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?*</p>	<p>EC 1165-2-209 Para 7a</p>	<p>i. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>
<p>iv. Does it provide tasks and related resource, funding and schedule showing when the ATR activities will be performed?</p>	<p>EC 1165-2-209 Para 9c</p>	<p>ii. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>

<p>v. Does the RP address the requirement to document ATR comments using Dr Checks?</p> <p><i>*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.</i></p> <p>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:</p> <p>i. Does it provide a defensible rationale for the decision on Type II IEPR?</p> <p>ii. Does it identify the Type II IEPR District, MSC, and RMO points of contact?</p> <p>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?</p> <p>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</p>	<p>EC 1165-2-209 Appendix B 4g</p> <p>EC 1165-2-209 Appendix C Para 3e</p> <p>EC 1165-2-209 Para 7d (1)</p> <p>EC1165-2-209 Para 15a</p>	<p>iv. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>v. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>e. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>i. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>ii. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>iii. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>iv. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>
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<p>suitable for the review being conducted?</p> <p>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?</p> <p>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?</p> <p>vii. Does it provide tasks and related resource, funding and schedule showing when the Type II IEPR activities will be performed?</p> <p>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?</p> <p><i>Is it likely? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></i></p> <p><i>If yes, Type II IEPR must be addressed.</i></p> <p>ix. Does the RP address Type II IEPR factors?</p> <p>Factors to be considered include:</p>	<p>EC 1165-2-209 Para 7a</p> <p>EC 1165-2-209 Appendix B Para 4a</p> <p>EC 1165-2-209 Appendix B Para 4k (4)</p> <p>EC 1165-2-209 Appendix B, Para 4k(1) &amp; Appendix E, Para's 1a &amp; 7</p> <p>EC 1165-2-209 Para 6b (4) and</p>	<p>v. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>vi. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>vii. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>viii. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>ix. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>
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<ul style="list-style-type: none"> <li>• 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?</li> <li>• Does the project design require redundancy, resiliency and robustness</li> <li>• 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.</li> </ul> <p><i>Is it likely? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></i></p> <p><i>If yes, Type II IEPR must be addressed.</i></p> <p>g. Does it address policy compliance and legal review? If no, does it provide a risk based decision of why it is not required?</p>	<p>Para 10b</p> <p>EC1165-2-209</p> <p>Appendix E, Para 7c(1)</p> <p>EC1165-2-209</p> <p>Appendix E, Para 5a</p> <p>EC1165-2-209</p> <p>Appendix E</p> <p>Para 2</p> <p>EC 1165-2-209</p> <p>Para 14</p>	<p>g. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>
<p><b>3. Does the RP present the tasks, timing, and sequence of the reviews (including deferrals)?</b></p>	<p>EC 1165-2-209, Appendix B,</p>	<p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>

	Para 4c	
<p>a. Does it provide an overall review schedule that shows timing and sequence of all reviews?</p> <p>b. Does the review plan establish a milestone schedule aligned with the critical features of the project design and construction?</p>	<p>EC 1165-2-209, Appendix C, Para 3g</p> <p>EC 1165-2-209, Appendix E, Para 6c</p>	<p>a. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>b. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>
<b>4. Does the RP address engineering model certification requirements?</b>	EC 1165-2-209, Appendix B, Para 4i	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
<p>a. Does it list the models and data anticipated to be used in developing recommendations?</p> <p>b. Does it indicate the certification /approval status of those models and if certification or approval of any model(s) will be needed?</p> <p>c. If needed, does the RP propose the appropriate level of certification??? /approval for the model(s) and how it will be accomplished?</p>		<p>a. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>b. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>c. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>

<b>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?</b>	EC 1165-2-209, Appendix B, Para 4d	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
a. Does it discuss posting the RP on the District website?		a. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
b. Does it indicate the web address, and schedule and duration of the posting?		b. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
<b>6. Does the RP explain when significant and relevant public comments will be provided to the reviewers before they conduct their review?</b>	EC 1165-2-209, Appendix B, Para 4e	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
a. Does it discuss the schedule of receiving public comments?		a. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
b. Does it discuss the schedule of when significant comments will be provided to the reviewers?		b. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
<b>7. Does the RP address whether the public, including scientific or professional societies, will be asked to nominate professional reviewers?*</b>	EC 1165-2-209, Appendix B, Para 4h	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
a. If the public is asked to nominate professional reviewers then does the RP		a. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

<p>provide a description of the requirements and answer who, what, when, where, and how questions?</p> <p>* Typically the public will not be asked to nominate potential reviewers</p>		
<p><b>8. Does the RP address expected in-kind contributions to be provided by the sponsor?</b></p>	<p>EC 1165-2-209, Appendix B, Para 4j</p>	<p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>
<p>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?</p>		<p>a. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>
<p><b>9. Does the RP explain how the reviews will be documented?</b></p> <p>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?</p> <p>b. Does the RP explain how the Type II IEPR will be documented in a Review Report?</p>	<p>EC 1165-2-209, Para 7d</p>	<p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>a. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>b. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>



<p>c. Does the RP document how written responses to the Type II IEPR Review Report will be prepared?</p> <p>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?</p>	<p>EC 1165-2-209 Appendix B Para 4k (14)</p> <p>EC 1165-2-209 Appendix B Para 4k (14)</p> <p>EC 1165-2-209 Appendix B Para 5</p>	<p>c. Yes <input checked="" type="checkbox"/> No</p> <p>d. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>
<p><b>10. Has the approval memorandum been prepared and does it accompany the RP?</b></p>	<p>EC 1165-2-209, Appendix B, Para 7</p>	<p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>

## Appendix A – CW Products and Type of Reviews

There are few absolutes in terms of review and those tend towards higher levels of review rather than lower. All Civil Works products shall get district quality control. All decision and implementation documents shall undergo Agency Technical Review. The law states when peer review is mandatory. Beyond this, the EC requires a risk informed decision be made on each individual study/project to determine the appropriate level of review. This determination will first be made as part of the review plan, which is part of the PMP. But the determination may change based upon changes the product undergoes during its development.

Any deviation from the following requires use of a risk informed decision process.

CW Planning Products	Required Review	SPD Requirement
Reconnaissance Report	DQC, ATR	
Feasibility Study	DQC, ATR, Type I IEPR	
General Reevaluation Report	DQC, ATR, Type I IEPR	
Limited Reevaluation Report	DQC, ATR, Type I IEPR	
Continuing Authorities Project	DQC, ATR, Type I IEPR	
Major Rehab Report (Hydropower, Navigation)	DQC, ATR, Type I IEPR	
Dredge Material Management Plan	DQC, ATR	
Shoreline Management Plan	DQC, ATR, Type I IEPR	
Master Plan	DQC, ATR	
Master Plan Update	DQC	
Operational Management Plan	DQC	
Annual Work Plan	DQC	

Hydrologic Studies*	DQC, ATR	
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\*Data from hydrologic studies must undergo a minimum of DQC and ATR prior to its substantive use in plan formulation studies.

<b>CW Engineering Products</b>	<b>Required Review</b>	<b>SPD Requirement</b>
Engineering Studies (EDR's, DDR's, etc)	DQC, ATR, SAR	
Cost Engineering Products	DQC, ATR	
Engineering Appendices for FS	DQC, ATR, SAR*	
Operation and Maintenance Manuals	DQC, ATR, SAR*, Policy Review	
Major Maintenance Reports	DQC, ATR	
PL 84-99 Project Information Reports	DQC, ATR	
PL 84-99 Rehab Plans and Specs	DQC, ATR, SAR*	
Plan and Specs for Levee and Dam Projects	DQC, ATR, SAR	
Purchase Orders	DQC, ATR	
Field Investigations	DQC, ATR	
Plan and Specs	DQC, ATR	√
Plans & Specs for Levees/Floodwalls	DQC, ATR, SAR*	√
Construction (Levees/Floodwalls)	SAR* (assumes DQC, ATR and IEPR were done in PED)	√
Issue Evaluation Studies	DQC, ATR	
Engineering Investigations	DQC, ATR	

<b>Operations Engineering Products</b>	<b>Required Review</b>	<b>SPD Requirement</b>
Operation and Maintenance Manuals	DQC, ATR, SAR*	√
Major Maintenance Reports	DQC, ATR	
Plan and Specs for Levee or Dam Projects	DQC, ATR, SAR	
Purchase Orders	DQC, ATR	
Field Investigations	DQC, ATR	
Construction		
Plan and Specs	DQC, ATR	
Engineering Investigations	DQC, ATR	
Routine Maintenance/Replacement-in-kind	DQC***	
Periodic Inspections of Completed Projects	DQC, ????	

\* SAR is required for any engineering product with life safety issues.

\*\* Routine maintenance work typically does not require any DQC because the DQC occurs during the development/update of the O&M manual.

\*\*\* Routine maintenance or Replacement-In-Kind tha

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**REVIEW PLAN**

**NAPA RIVER/NAPA CREEK FLOOD PROTECTION PROJECT**

**NAPA, CALIFORNIA**

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**APPENDIX F**

**CESPD SUPPLEMENTAL REVIEW PLAN CHECKLIST**

### CESPD Supplemental Review Plan Checklist

Review Plan: **Napa River/Napa Creek Flood Protection Project Review Plan**

Date of review:

Reviewed by:

References: CESPD R 1110-1-8, Appendix C, Planning; EC 1165-2-209, 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,)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	It is my understanding the TRSS applies to decision documents.
2	Are potential Continuing Authority Program (CAP) “spinoffs” identified, along with the appropriate QCP identified for them?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	These are flood protection features. No possible CAP spinoffs.
3	Are the review costs identified?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
	For District Quality Control (DCQ)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
	ATR?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
	Independent External Peer Review (IEPR)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4	Does the RP identify seamless DQC technical review (8.4), including supervisory oversight of the technical products? (See Appendix C paragraph 8.5)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5	Does the RP identify the recommended review comment content and structure? (See Appendix C paragraph 8.5.4)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Located in 1. Purpose and Requirements, Section B., (1), sentence 5.
6	Does the RP encourage face-to-face resolution of issues between the PDT and reviewers? (See Appendix C paragraph 8.5.5)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Located in 6. Type II IEPR (SAR) Review, Section C., third paragraph, 3 <sup>rd</sup> sentence.
7	If issues remain, does the RP must identify an appropriate dispute resolution process? (See Appendix C paragraph 8.6)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Located in 6. Type II IEPR (SAR) Review, Section C. Resolution
8	Does the RP require documentation of all significant decisions, and leave a clear audit trail? (See Appendix C paragraph 8.5.6)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Located in 4. Scope of Review, Section G. Meeting Reports, and Located in 6. Type II IEPR (SAR) Review, Section C. Resolution
9	Does the RP identify all requirements for technical certifications? (See Appendix C paragraph 8.5.7)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
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)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No, this section of the RP applies to Decision Documents
11	Does the RP fully address products developed by contractors? (See Appendix C paragraph 8.10)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Throughout
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)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Located in 4. Scope of Review, Section H. Value Engineering Studies
13	Does the RP include a Feasibility Alternative Review Milestone, where CESPD buy-in to the recommended plan is obtained? (See Appendix C paragraph 12.1)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No, this section of the RP applies to Decision Documents
14	Does the RP identify the final public meeting milestone? (See Appendix C, Enclosure 1, SPD	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No, this section of the RP applies to Decision Documents

	<b>Item</b>	<b>Yes</b>	<b>No</b>	<b>Comment</b>
	Milestones)			
<b>15</b>	Does the RP identify the report approval process, and if there is a delegated approval authority?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No, this section of the RP applies to Decision Documents
<b>16</b>	Does the RP reference CESP milestones, along with PGN milestones?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No, this section of the RP applies to Decision Documents

Revised 10May10

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## **REVIEW PLAN**

### **NAPA RIVER/NAPA CREEK FLOOD PROTECTION PROJECT NAPA, CALIFORNIA**

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## **APPENDIX G**

### **NAPA DRY BYPASS REVIEW DETAILS**

#### **A. Background**

The Napa River Flood Protection Project includes a feature called the Dry Bypass. This is an open channel bypass which will be excavated through a portion of downtown Napa. The bypass channel is intended to divert higher flows in the Napa River around the existing Oxbow reach of the Napa River. The Corps Supplemental General Design Memorandum (SGDM, 1998) provided the first description of the Dry Bypass feature.

The dry bypass design will incorporate a modified entrance invert set at above most tides, yet intended to only convey flows that are greater than approximately the 2-year event. This allows most low flows to continue through the oxbow reach of the Napa River (the segment of river which conveys common river flows). By maintaining commonly occurring flows in the oxbow, water quality impacts and concerns with siltation in the oxbow are minimized. The dry bypass channel will be 1,300 feet in length with a channel bottom width that ranges from 200 feet to 300 feet.

The Corps of Engineers' plan is to direct the design work of the dry bypass to an outside Architect-Engineering firm, while the Corps would maintain oversight of the design process through periodic reviews. Those reviews are covered in more detail in section B. below.



## B. Timeline

The timeline and the sequence of work completion for the Napa Dry Bypass is shown in Table F-1. Reviews will coincide with work completion so as not to delay the completion schedule.

**Table G-1. Design and Specification Review Timeline for PD, ATR, SAR, and BCOE Teams for the Napa Dry Bypass Design Work to Include Plans and Specifications.**

All Teams	Submittal	Team Required	Estimated Completion Date
Bypass Design Package (including plans, specifications, and design documentation review)	35% P&S Review	DQC/QA	20 Jan 2011
	65% P&S Review	DQC/QA, ATR, SAR	20 Jun 2011
	100% P&S Review	DQC/QA, ATR, SAR, BCOE	28 Oct 2011
	100% Final Backcheck Review	DQC/QA, ATR, SAR, BCOE	23 Mar 2012
	RTA Submittal		11 May 2012
OMRR&R	Draft Manual Submittal		May 12, 2012
	Review Complete	DQC/QA, ATR, SAR	June 2, 2012
	Final Manual Submittal		July 4, 2012

**Table G-2. Models Used and Subject Matter Experts for the Design of the Napa Bypass.**

Models Used	Review Required	Estimated Completion Date	SME's
RMA2, FESWMS	ATR/SAR	May 2012	Mike Lin, SPK

## C. ATR Disciplines

General descriptions of ATR disciplines are as follows.

**Hydrology and Hydraulics:** A team member is needed who will be an expert in open channel flow hydraulics and have a thorough understanding of the intricacies of channel flow conditions and bank/erosion protection features.

**Geotechnical:** A team member is needed who will be experienced in flow boundary conditions as the soil or other material interfaces with runoff conditions. This team member will have experience with soil classification systems as it pertains to construction over soil interface. The team member should have experience with foundation conditions for structures and floodwalls.

**Structural:** A team member is needed with experience in reviewing drawings and specifications for concrete structural elements. In particular this team member should have experience in structural elements with respect to concrete channel structures, weir construction, floodwalls, and floodgates.

**Civil Design:** A team member is needed who has a strong understanding of civil works as it applies to earthwork, balancing cut and fill, channel designs, small concrete design work, minor drainage designs, road, and utility relocations.

#### D. Non-ATR Review

Cost Engineering: A review is required on the cost estimate provided with the submittal package, comparing the design package with the estimate provided for accuracy.

#### E ATR Funding.

- (1) The PDT district shall provide labor funding by cross charge labor codes. Funding for travel, if needed, shall be provided. The Napa project manager (PM) will coordinate with the ATR leader to ensure that adequate funding is available and is commensurate with the level of review needed. The current estimate of this review is \$30,000 for the 65% and 100% designs.
- (2) The ATR leader will be responsible for providing organization codes for each team member.
- (3) Reviewers shall monitor individual labor code balances and alert the ATR Leader to any possible funding shortages.

#### F. Value Engineering Study.

A value engineering study was conducted at the 35% design level and issued as a draft in March 2011. A final report is expected in June 2011 after all responses have been provided to the 7 proposals provided.

#### G. Design and Review Teams.

**Table G-3. Project Delivery Team (PDT)**

<b>Name/Title/Organization</b>	<b>Discipline</b>	<b>Phone</b>
Civil Engineer Civil Design Section A CESPK-ED-DC	Lead Civil Engineer & Quality Assurance Lead	(916) 557-7429
Laura Haven CESPK-ED-S	Administration	(916) 557-7651
Jane Bolton Civil Engineer Soil Design Section CESPK-ED-GS	Geotechnical	(916) 557-7637
Mike Lin Civil Engineer Hydraulic Design Section CESPK-ED-DH	Hydraulics	(916) 557-7409
Bert Brown Civil Engineer CESPK-PM-C	Project Manager	(916) 557-6632
Julie Lucido, and Andrew Butler Project Management NCFCWCD	Local Sponsor	(707)253-4366
McMillen LLC Napa Bypass Design A-E Boise, Idaho	Internal QA team	(208) 342-4214

**Table G-4. Quality Assurance/DQC Review Team**

<b>Name/Title/Organization</b>	<b>Discipline</b>	<b>Phone</b>
Marcus Williams Structural Engineer American River Design Sec. CESPK-ED-DR	Structural	(916) 557-6984
Joe Reynolds Cost Engineer Cost Engineering Section CESPK-ED-SC	Cost Engineering	(916) 557-6984
Dennis Potter Construction Branch CESPN-CO	BCOE/QA	(916) 557-7329
Jeff Koschak Environmental CESPK-PD	Environmental	(916) 557-6994
Curtis Payton Geologist Geology Section CESPK-ED-EB	HTRW	(916) 557-7431
Jim Berkland, Civil Engineer Design Section A CE-ED-DC	Civil	(916) 557-7268
Jim Sullivan Landscape Architect Civil Design Section B CESPK-ED-DB	Landscape Architecture, Vegetation Restoration	(916) 557-7281
JJ Baum Water Quality Specialist Environmental Chemistry CESPK-ED-EC	NPDES/SWPPP	(916) 557-6656

**Table G-5. Agency Technical Review Team**

<b>Name</b>	<b>Discipline</b>
Steven Taylor, NWO	Civil Design
Brad Jones, NWO	Geotechnical/Lead
James Chieh, SPL	Hydraulics
Lyle Peterson, NWO	Structures

**Table G-6. Safety Assurance Review Team**

<b>Name</b>	<b>Discipline</b>
David Simpson	Technical Lead
Chao Gong, PE., SE	Civil/Structural Engineering
Alberto Pujol	Geotechnical Engineering
Tom MacDonald	Hydraulics



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## REVIEW PLAN

### NAPA RIVER/NAPA CREEK FLOOD PROTECTION PROJECT NAPA, CALIFORNIA

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## APPENDIX H

### NAPA O&M MANUAL REVIEW DETAILS

#### A. Background

Between 1994 and 2008 the U.S. Army Corps of Engineers undertook a series of flood improvement contracts in Napa, California. Contracts 1A and 1B are areas located at the southern end of the town limits. The designation A was for work conducted on the west side of Napa river, and B was for work conducted on the east side of the river. Contract 1A included work to lower portions of existing levees, excavate a tidal channel, construct a berm around private property, breach two levees to assist in expanding flooding capacity and assist in the redevelopment of historic wetlands, and seed the area with native grasses.

Contract 1B initially included removing existing levees and rebuilding new levees further inland, and later on repairing approximately 600 feet of levee which had been overtopped during previous floods, installing turf reinforced matting, and repairing a paved bicycle trail.

Contracts 2E and 2W are areas located along the bank of the Napa River just downstream of the First Street Bridge. Contract 2W included the construction of the concrete flood wall from Hatt to First Avenues which was completed in 2008. Contract 2E involved terrace grading and is still slated for floodwalls between the terrace and Soscal Avenue in the future.

At this time the Corps is undergoing project turnover with the completion of the O&M manuals for the above contracts.

#### B. Timeline

The timeline and the sequence of work completion for the Napa O&M Manual 1A/1B and the portion of the work completed for 2E and 2W is shown in Table H-1. Reviews will not be concurrent so as to allow completion of reviews and comments prior to the follow-on review.

**Table H-1. Review Timeline for DQC, and ATR Teams for the Napa O&M Manual 1A/1B.**

<b>All Teams</b>	<b>Submittal</b>	<b>Team Required</b>	<b>Estimated Completion Date</b>
PDT (DQC/QA), ATR	100% O&M Review	DQC/QA	1 Sep 2010
	100% O&M Backcheck	DQC/QA	7 Dec 2012
	O&M Review	ATR	15 Feb 2013
	O&M Backcheck	ATR	29 Mar 2013
	Review Certification		19 Apr 2013

**C. ATR Disciplines/Cost Estimate**

ATR disciplines are as follows: Water resources, civil design, environmental, geosciences, operations. As of this printing the ATR review is not complete. The estimate for completion of the review includes the review team and comment responses/corrections by the local Sacramento PDT team. A rough estimate of the cost for review completion is \$80,000.

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## REVIEW PLAN

### NAPA RIVER/NAPA CREEK FLOOD PROTECTION PROJECT NAPA, CALIFORNIA

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## APPENDIX I

### NAPA CREEK REVIEW DETAILS

#### **A. Background**

Napa Creek, a tributary to the Napa River, has a tradition of flooding the historic downtown portion of the town of Napa, California during intense storm events. Although loss of life due to Napa Creek flooding has never occurred, infrequent rising waters through the downtown area have created a loss of income to business owners due to store closures and the ensuing property damage which results in economic setbacks. The Creek improvements include construction of two reinforced concrete bypass box culverts, terrace grading, channel stabilization treatments, channel smoothing treatments, and the removal of the Behrens Street Bridge. Napa Creek designs were completed by an A-E during March of 2010 which took approximately 2 ½ years to complete. The award to begin construction occurred in August of 2010 with American Recovery and Reinvestment Act funding. Expected completion of construction is 2013.

#### **B. Timeline**

The timeline and the sequence of work completion for the Napa Creek is shown in Table I-1. Reviews will coincide with work completion so as not to delay the completion schedule.

**Table I-1. Design, Specifications, Construction, and O&M Manual Review for Napa Creek with respect to DQC, ATR, and SAR Teams for the Napa Creek Design and Construction Work.**

<b>All Teams</b>	<b>Submittal</b>	<b>Team Required</b>	<b>Estimated Completion Date</b>
Construction Reviews for Napa Creek	No Construction Review Planned	See Section C. below	
PDT (DQC/QA), ATR for O&M Manual for Napa Creek	100% Review Complete	DQC/QA	22 Feb 2013
	Final Draft Complete		26 Apr 2013
	Resource Agcy Review		28 June 2013
	ATR Review		28 June 2013
	Review Certification		19 July 2013

**C. Value Engineering Study.**

A value engineering study was conducted at the 35% design level and issued as a draft on December 7, 2007. A final report was delivered on February 6, 2008.



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**REVIEW PLAN**

**NAPA RIVER/NAPA CREEK FLOOD PROTECTION PROJECT**  
**NAPA, CALIFORNIA**

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**APPENDIX J**

**STATEMENT OF QUALIFICATIONS**

Brad Jones – 65% and 100% ATR Lead/Geotechnical (Dry Bypass Review)

Brad Jones is a supervisory civil engineer in the Geotechnical Engineering and Sciences (GES) Branch of the Omaha District Corps of Engineers. Mr. Jones is currently chief of Soils Section A within the GES branch, and supervises a staff of 12 engineers and technicians. Prior to becoming a supervisory civil engineer, Mr. Jones worked as a design engineer in the GES Branch for 20 years. During this period, Mr. Jones worked on a variety of military, civil works and environmental projects.

Mr. Jones has a Bachelor of Sciences degree in Civil Engineering from the University of Nebraska, and a Master of Science degree in Civil Engineering from the University of Nebraska, with emphasis in geotechnical engineering. Mr. Jones is a registered professional engineer in the State of Nebraska.

OMAHA DISTRICT STAFF MEMBER RESUME – 65% and 100% ATR Structural Engineer (Dry Bypass Review)

GENERAL INFORMATION:

Lyle E. Peterson  
Structural Engineer, Structural Section, Design Branch  
U.S. Army Corps of Engineers, Omaha District  
CENWD-ED-DF  
Phone: (402) 995-2161

DESIGN EXPERIENCE

Designed reinforced concrete hydraulic structures for flood protection projects, including underground conduits, floodwalls, stilling basins and gatewells. Designed welded steel spillway stoplogs. Designed a railroad bridge. Designed reinforced concrete circular clarifiers, digesters, and miscellaneous structures for a wastewater treatment plant. Designed one-story reinforced concrete masonry buildings, and foundations for pre-engineered metal buildings. Analyzed the Big Bend Dam spillway tainter gates using a 3-dimensional finite element model. Inspected embankments, powerhouses, spillways, outlet structures, and bridges at dam sites. Designed reinforced concrete trenches and manholes for high temperature hot water distribution at an Army post. Designed two steel framed buildings in accordance with 2003 International Building Code, including AISC Seismic Provisions. Extensive experience with commercial software STAADPro for structural analysis. Extensive experience with Corps of Engineers software for retaining wall and sheetpile wall analysis and design.

OTHER WORK RELATED EXPERIENCE

Support provided to NWD for bridge inspection independent reviews and other structural related issues as a technical 13.

SPECIALIZED TRAINING

Bridge Inspection training based on Federal Highway Administration (FHA) “Bridge Inspector’s Training Manual”

EDUCATION

Bachelor of Science in Civil Engineering

PROFESSIONAL REGISTRATION/PROFESSIONAL ASSOCIATION MEMBER

Registered Professional Engineer in Nebraska  
Member of the American Society of Civil Engineers  
Member of the Structural Engineers Association of Nebraska

Steve Taylor, P.E. – 65% and 100% ATR Civil Engineer design reviewer (Dry Bypass Review)

16 years design, management, survey and inspection experience. Diverse background over wide range of projects including industrial, commercial, recreational and residential developments. Lead civil engineer for \$160M, 300 acre heavy industrial project. Highly experienced mountainous roadway and grading design engineer. Project manager for multiple rural residential developments over 500 acres. Design team leader for multiple ongoing commercial projects. Office and field survey experience leading to LSI status. Former public works field inspector for construction of public improvements.

James Chieh, Ph.D., P.E. – 65% and 100% ATR Hydraulics Engineer (Dry Bypass Review)  
Los Angeles District  
Phone: 213-452-3571  
shih.h.chieh@usace.army.mil

James Chieh is a Senior Hydraulic Engineer in the Hydraulics Section of the Engineering Division, Los Angeles District, U.S. Army Corps of Engineers.

Dr. Chieh joined the Los Angeles District in 1995. He worked on various flood control and ecosystem restoration projects from the recon phase to feasibility, and PED phases. He conducted flood frequency analysis, rainfall runoff modeling, channel hydraulic analysis, floodplain analysis, sediment transport analysis, and reservoir routing simulations for various water resources projects. He also conducted groundwater modeling, water budget analysis, and water quality analysis for various habitat restoration and wetland projects. The projects he involved include Seven Oaks Water Conservation Study, San Juan Creek Watershed Study, San Diego Creek Watershed Study, Big Bear Lake Study, Westminster Channel Flood Risk Reduction Study, Flood Plain Awareness Study, Santa Clarita Groundwater Remediation Study (HTRW project), Marina Del Rey and Ballona Creek Study, Santa Margarita Watershed Study, Va Shly'ay Akimel Salt River Phoenix Study, Rio Salado Salt River Phoenix Study, Tres Rios Wetland Phoenix Study, etc. He published and presented technical papers at the ASCE journal and conferences, Inter-Federal Agency conference, and other professional conferences. He served as ITR/ATR member and reviewed various projects on hydrology, hydraulics, sediment yield, sediment transport, flood plain studies, and coastal engineering studies for various Districts of the Corps of Engineers. ATR projects include Yuba River Study, American River Study, Natomas Levee PAC Report, Marysville Ring Levee Study, Espanola Valley General Investigation Study, Napa Salt Marsh Restoration Study, etc.

Prior to working with the Corps of Engineers, Dr. Chieh served as Supervising Engineer for Montgomery Watson and as Senior Engineer for Camp Dresser, and McKee, and Senior Engineer for Ecology and Environment Inc. He received his Bachelor degree in Hydraulic Engineering in Taiwan, and MS degree in the Iowa Hydraulic Research Institute at the University of Iowa. His doctorate degree in hydraulic engineering was received from the State University of New York at Buffalo. He is a licensed Professional Engineer in New York and California.

Because of his working experience and education background, Dr. Chieh was selected as a national expert to join the Inter-agency Performance Evaluation Taskforce to evaluate the Katrina Study Report. He received Civil Work Director General Riley's commendation letter and Commander's Award for Civil Service.

James G. Neubauer, PE, CCE, PM1 – 65% Independent Cost Estimator (non-ATR related)  
Civil Engineer, Senior Cost Engineer, Cost Engineering DX ATR Coordinator  
[James.g.neubauer@usace.army.mil](mailto:James.g.neubauer@usace.army.mil) at 509-527-7332

Since August 2007 Mr. Neubauer has served as the Cost DX ATR Coordinator and a lead cost reviewer. Mr. Neubauer is also the lead instructor in the art of the Cost ATR process, providing training to planners and estimators throughout the Corps. He has served 30 years as a civil engineer with experience in military and civil works construction, project management and cost engineering. Mr. Neubauer is a licensed professional engineer, a certified cost engineer and a certified project manager – level 1. Since 1992, Mr. Neubauer has served as a senior lead cost engineer for Albuquerque District, Europe District and Walla Walla District in both military and civil works. His current reviews include civil works cost estimates, schedules and risk analyses. Mr. Neubauer assisted the development of the current civil works cost Engineer Regulation ER 1110-2-1302, was a main author of the civil works cost Engineering Technical Letter ETL 1110-2-573, the current Cost and Schedule Risk Analysis Guidance, the Abbreviated Risk-Based Contingency model, and the Cost ATR Guidance for the US Army Corps of Engineers. Mr. Neubauer has led many cost ATRs and numerous teams in developing or reviewing multi-billion dollar estimates for the Corps and the Department of Energy.

Joe Reynolds, - 100% Independent Cost Estimator (non-ATR related)

## QUALIFICATIONS

### *Education*

B.S. - Construction Management, 1990, California State University, Sacramento

### *Project Experience*

#### **Corps of Engineers**

- Levee Repairs along Sacramento, San Joaquin, American, and Feather Rivers. Includes both water side and land side construction.
- Levee construction consisting of mass excavation in excess of 300,000 cy's and import & placement of select structural fill
- Estimates/work has involved jobsites which have been in confined urban areas as well as environmentally sensitive areas and conditions.
- Slurry Walls ranging to 110' deep. Various methods including Cement Bentonite, Soil Cement, Cement Bentonite Slag.
- Fish Screen and Fish Bypass Structures
- Alternative s Budget pricing for Martis Creek Dam
- Dam Maintenance estimates of varying types.
- Several "one off" type projects that have not been designed or constructed requiring "outside the box" thinking.
- Preliminary budgets for military runways.
- Major utility renovations at Dugway & Yuma PG's
- Various Pavement Repairs.
- Deep excavation(35') in water table and water control for projects at Hill AFB, UT
- DQC reviews, Risk analysis for various projects within the district.

#### **Private Industry**

- Ground up total estimates for 500 lot subdivisions including infrastructure.
- Estimating for major utility installation projects for various counties and cities
- Road construction projects from the ground up.
- Numerous Design build projects from inception to project completion

## EXPERTISE

*Mr. Reynolds expertise includes: Expert user of MCACES MII estimating software to prepare screening, baseline, fair and reasonable award, and modification estimates. Proficient in estimating civil, structural, mechanical, electrical, and environmental projects. Experienced working collaboratively with USACE Cost Directorate of Expertise (Cost D/X) their requirements for Cost ATR Certification in accordance with current USACE review policies. Proficient user of Microsoft Projects® scheduling software in developing detailed construction and total project schedules.*

## REPRESENTATIVE EXPERIENCE

**2009 - Present, Cost Engineering, U. S. Army Corps of Engineers Sacramento District**, *The candidate serves in a Senior Cost Engineer predominately evolved with civil works projects of varying size. Projects up to \$300million in size to date.*

Chao Gong, PE, SE – Senior Structural Engineer (SAR team)

Current Employment: URS

Areas of Expertise: Hydraulic Concrete Structural Design, Seismic Design and Retrofit, Transportation & Bridges, Industrial Facilities

Years of Experience

With URS: 7

With Other Firms: 15

Mr. Gong is both a registered structural and professional engineer with more than 20 years of experience as an engineer specializing in structural engineering in the U.S. and 10 years structural design/construction experience in China. His work includes structural design with reinforced concrete, pre-stressed concrete, steel, masonry, and wood designs for various types of structures, residential buildings, high-rise buildings, industrial facilities, as well as other civil/municipal structures. He provides structural modeling, linear/nonlinear static, dynamic, seismic retrofit analysis. Mr. Gong utilizes seismic resistant design theory and finite element methods. He is familiar with USACE and Caltrans design manuals; UBC, CBC, ACI, AISC, AASHTO codes and extensively used SAP2000, STRUDL, STAADIII, LARSA, and other structural analysis/design programs.



Thomas MacDonald, Ph.D, PE – Hydraulic Engineer (SAR team)

Current Employment: URS

Areas of Expertise: Hydraulics/Hydrology Sedimentation, Water Resource Engineering, Flood Control Engineering

Years of Experience

With URS: 16

With Other Firms: 19

Dr. MacDonald has more than 30 years experience as a consulting water resources engineer with recognized expertise in hydrology, hydraulics, and sedimentation. Experience includes the planning, analysis, and design of complex projects involving dams, tunnels, channel systems, water supply, flood control, sediment yield and transport, and drainage and sediment control in rural, urban, and wetland areas. Representative experience is summarized below.

Alberto Pujol, PE, GE – Geotechnical Engineer (SAR team)

Current Employment: GEI Consultants

Years of Experience: 30+

Alberto Pujol has been responsible for numerous projects involving the rehabilitation or replacement of existing infrastructure; including levees, dams, pipelines, roads, tunnels, and impoundments. Managing contracts with professional service budgets up to \$25 million, he has directed conceptual and feasibility engineering, planning and execution of investigations, development of construction plans and specifications, preparation of reports, and construction management. He has extensive experience in the supervision of multi-disciplinary teams of engineers and scientists, as well as a strong technical background with emphasis on solving problems and reducing costs.

Mr. Pujol has been responsible for the planning, siting, evaluation, and design of a wide range of water resources projects as well as dam safety evaluations, design of remedial measures, and construction monitoring and support. In addition, he has provided engineering support of construction operations for dams, power plants, and flood control projects, including temporary support of excavations, river diversions, cofferdam design, borrow area operations, material processing, dewatering systems, sediment control, and access roads.

Janice M. Lera-Chan, PE, Level II FE, PM1 Chief of Water Resources Section  
[Janice.M.Lera-Chan@usace.army.mil](mailto:Janice.M.Lera-Chan@usace.army.mil) at 415 503-6743 (O&M Manual Reviewer)

Ms. Lera-Chan received her Bachelor of Science degree in Civil Engineering from U.C. Davis in 1989. She has been with the Corps of Engineers for 18 years. During those 18 years she has worked in Engineering, Planning, and Project Management for San Francisco and Los Angeles Districts. Ms. Lera-Chan began her career as a hydraulic engineer. She worked in Planning where she was given the opportunity to resurrect and manage the Flood Plain Management Service Program. In 2003 Ms. Lera-Chan had opportunity to work as a project manager (PM). She was a PM for three General Investigation Studies and two Continuing Authority Program projects. Since October 2007, Ms. Lera-Chan has served as the Chief of Water Resources Section, San Francisco District and is responsible for the supervision and technical oversight of ten engineers. Ms. Lera-Chan is responsible for the review of products from the section. She has written and assisted in the development of review plans for various studies and participated in the coordination of ATRs. Ms. Lera-Chan is a registered professional engineer in the state of California; certified Level II Facilities Engineer (FE); and a certified project manager - level 1. She is also a graduate of the South Pacific Division Leadership Developmental Program (2007).

Marc Goodhue, PE, Chief of Geo-Sciences Section at [Marc.J.Goodhue@usace.army.mil](mailto:Marc.J.Goodhue@usace.army.mil) , 415 503-6898  
(O&M Manual Reviewer)

Marc Goodhue has served as the Chief of the Geo-Sciences Section since March 2008 and has 10 years experience with the Corps of Engineers, all with the San Francisco District. Prior to being Chief he served as the Civil Technical lead on a major wetland restoration project for two years and as a geotechnical engineer on civil works projects for 5 years. He is a registered professional engineer and has reviewed over 100 routine and periodic levee and dam inspection reports, feasibility reports, and other technical documents related to flood control, dredging, and environmental restoration.