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

7 Mar 2013

REPLY TO
ATTENTION OF

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.

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

Encl
Review Plan

MICHAEL C. WEHR
BG, EN
Commanding

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

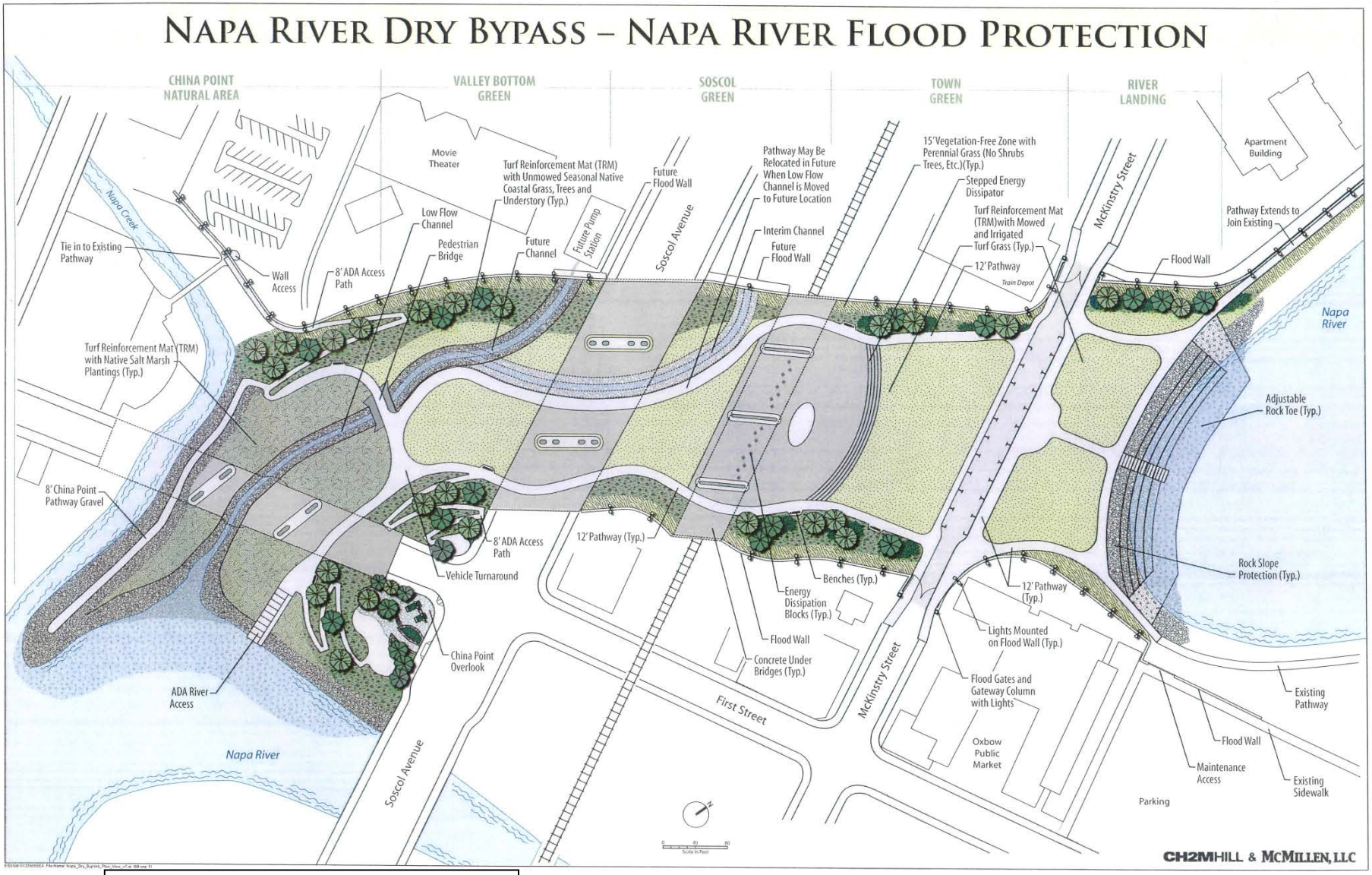

Figure 2. Details of the Napa Dry Bypass – a Napa River Project Feature.

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	The team utilizes the following criteria to determine the appropriate level of review. The team has final approval on the level of review. **Level 1** review is for highly complex models where there could be a high risk of incident that could result in major impacts. **Level 2** review is for models of lesser complexity than Level 1 models with lower risk of impacts that could still result in impacts. **Level 3** review is for routine and non-complex models that have a minor impact. **Level 4** 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.

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 finaled 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[1]	Estimated	$100,000
Design Package	ATR[2]	Estimated	$18,500
Design Package	SAR[3]	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
TOTAL		**Estimated**	**$481,000**

[1] – The DQC review included the 35%, 65, 95 and 95% backcheck review for the Napa Dry Bypass
[2] – The ATR review included the 65%, 95, and 95% backcheck review for the Napa Dry Bypass
[3] – 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 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 2nd 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

REVIEW PLAN

NAPA RIVER/NAPA CREEK FLOOD PROTECTION PROJECT

NAPA, CALIFORNIA

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.

Quality Control Manager	**Years Experience**	**Responsible Field**
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

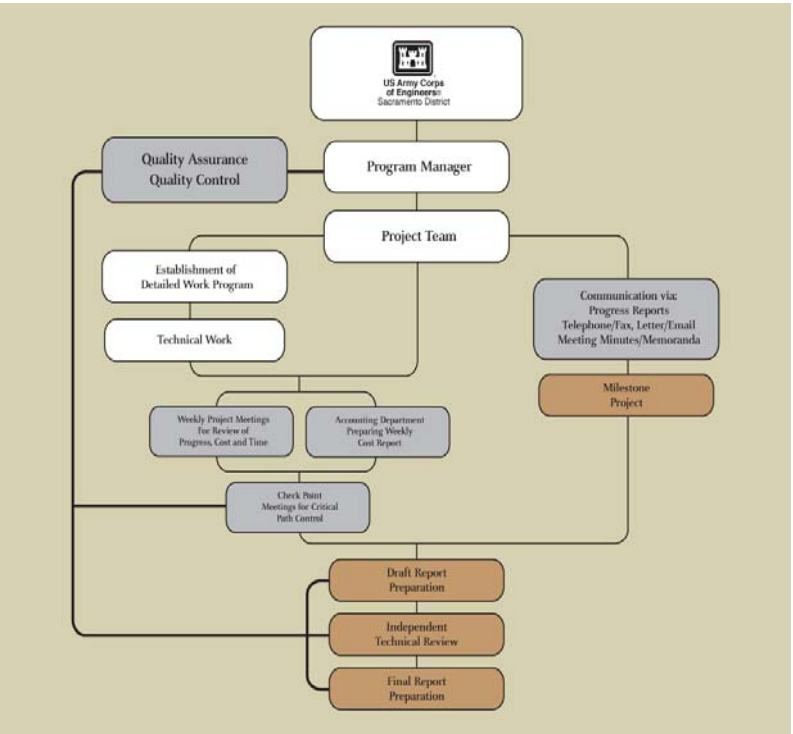
2.1 Management Philosophy

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

Engineering Division

Project Manager:
Dave Cook
Office Phone: 916-557-7890 Email: 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

Technical Oversight:
Will Hall
Office Phone: 916-557-6646 Email: William.Hall@usace.army.mil

Project Engineer/Civil Engineer:
William Doyle
Office Phone: 916-557-7429 Email: william.a.doyle@usace.army.mil

Hydraulic Engineer:
Mike Lin
Office Phone: 916-557-7967 Email: mike.c.lin@usace.army.mil

Geotechnical Engineer:

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

Environmental:

Jeff Koschack
Office Phone: Email: 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

Project Manager:

Mort McMillen, PE
Office Phone: (208) 342-4214 Cell Phone: (208) 830-1394 Fax: (208) 342-4216 Email: morton.mcmillen@mcmillen-llc.com

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

Hydraulic / Hydrology:

Dan Axness, PE
Office Phone: (208) 342-4214 Cell Phone: (208) 869-9918 Fax: (208) 342-4216 Email: dan.axness@mcmillen-llc.com

Quality Control Manager:

Steve Spickelmier
Office Phone: (208) 342-4214 Fax: (208) 342-4216 Email: steve.spickelmier@mcmillen-llc.com

Administration Assistant:

Meg Floyd
Office Phone: (208) 342-4214 Fax: (208) 342-4216 Email: meg.floyd@mcmillen-llc.com

Operations Engineering Products	Required Review	SPD Requirement
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

REVIEW PLAN

NAPA RIVER/NAPA CREEK FLOOD PROTECTION PROJECT

NAPA, CALIFORNIA

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,)	☐	☒	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?	☐	☒	These are flood protection features. No possible CAP spinoffs.
3	Are the review costs identified?	☒	☐	
	For District Quality Control (DCQ)?	☒	☐	
	ATR?	☒	☐	
	Independent External Peer Review (IEPR)?	☒	☐	
4	Does the RP identify seamless DQC technical review (8.4), including supervisory oversight of the technical products? (See Appendix C paragraph 8.5)	☒	☐	
5	Does the RP identify the recommended review comment content and structure? (See Appendix C paragraph 8.5.4)	☒	☐	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)	☒	☐	Located in 6. Type II IEPR (SAR) Review, Section C., third paragraph, 3rd sentence.
7	If issues remain, does the RP must identify an appropriate dispute resolution process? (See Appendix C paragraph 8.6)	☒	☐	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)	☒	☐	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)	☒	☐	
10	Does the RP identify the requirement that without-project hydrology will be certified by the Feasibility Scoping Meeting? (See Appendix C paragraph 8.5.8)	☐	☒	No, this section of the RP applies to Decision Documents
11	Does the RP fully address products developed by contractors? (See Appendix C paragraph 8.10)	☒	☐	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)	☒	☐	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)	☐	☒	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	☐	☒	No, this section of the RP applies to Decision Documents

	Item	Yes	No	Comment
	Milestones)			
15	Does the RP identify the report approval process, and if there is a delegated approval authority?	☐	☒	No, this section of the RP applies to Decision Documents
16	Does the RP reference CESPD milestones, along with PGN milestones?	☐	☒	No, this section of the RP applies to Decision Documents

Revised 10May10

REVIEW PLAN

NAPA RIVER/NAPA CREEK FLOOD PROTECTION PROJECT

NAPA, CALIFORNIA

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)

Name/Title/Organization	Discipline	Phone
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

Name/Title/Organization	Discipline	Phone
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

Name	Discipline
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

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

REVIEW PLAN

NAPA RIVER/NAPA CREEK FLOOD PROTECTION PROJECT

NAPA, CALIFORNIA

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.

All Teams	Submittal	Team Required	Estimated Completion Date
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.

REVIEW PLAN

NAPA RIVER/NAPA CREEK FLOOD PROTECTION PROJECT

NAPA, CALIFORNIA

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.

All Teams	Submittal	Team Required	Estimated Completion Date
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.

REVIEW PLAN

NAPA RIVER/NAPA CREEK FLOOD PROTECTION PROJECT

NAPA, CALIFORNIA

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 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 envolved jobsites which have been in confined urban areas as well as environmentaly 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 whithin 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 utlizes 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
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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).

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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.