## HAMILTON CITY, CALIFORNIA LIMITED REEVALUATION REPORT

#### SACRAMENTO DISTRICT



**APRIL 2010** 

#### REVIEW PLAN HAMILTON CITY, CALIFORNIA LIMITED REEVALUATION REPORT

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#### HAMILTON CITY, CALIFORNIA LIMITED REEVALUATION REPORT

#### 1. PURPOSE AND REQUIREMENTS

**A. Purpose.** This document is the Review Plan for the Hamilton City Limited Reevaluation Report (LRR). The study process is anticipated to culminate in an implementation document that will not require additional Congressional authorization. It is anticipated that the LRR will be approved by SPD under a delegated approval authority.

Engineer Circular (EC) 1165-2-209, *Civil Works Review Policy*, dated 31 January 2010, defines the quality control review processes for Civil Works products. It distinguishes between technical review performed by in-district (District Quality Control, DQC) and out-of-district resources (formerly Independent Technical Review, ITR, now Agency Technical Review, ATR). It also addresses requirements for Independent External Peer Review (IEPR); this is the most independent level of review and is applied in cases that meet certain criteria.

- **B. Requirements.** EC 1165-2-209 outlines requirements for three review approaches (DQC, ATR, and IEPR). This Review Plan addresses all three approaches and coordination with the appropriate Planning Centers of Expertise (PCXs). The authorized project addressed by the LRR includes both flood risk management (FRM) and ecosystem restoration purposes. Although the majority of the total project costs will be allocated to ecosystem restoration, the primary purpose of the LRR is to update monetary flood damage reduction benefits, as well as to address design and cost refinements for structural features that are more typical of flood damage reduction projects, such as levees and interior drainage facilities. Therefore, the FRM-PCX was identified as the primary PCX for coordination of this Review Plan.
- (1) District Quality Control. DQC is the review of basic science and engineering work products focused on fulfilling the project quality requirements defined in the 2004 Project Management Plan (PMP) for the project (to which this Review Plan is appended). DQC is managed in the home 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 the Major Subordinate Command (MSC) and District Quality Management Plans (QMPs) providing for seamless review, quality checks and reviews, supervisory reviews, Project Delivery Team (PDT) reviews, etc. Additionally, the PDT is responsible for a complete reading of the report to assure the overall integrity of the report, technical appendices and recommendations before approval by the District Commander. A Quality Control Plan (QCP) is included in the 2004 PMP for the Pre-construction Engineering and Design (PED) phase of the project that addresses DQC by the District; DQC is not addressed further in this Review Plan. DQC is required for this project.
- (2) Agency Technical Review. ATR is an in-depth review managed within USACE and conducted by a qualified team outside of the home district that is not involved in the day-to-day production of a project/product. The purpose of this review is to ensure the proper application of clearly established criteria, regulations, laws, codes, principles and professional practices. The

ATR team reviews the various work products and assures that all the parts fit together in a coherent whole. ATR teams will be comprised of senior USACE personnel (Regional Technical Specialists (RTS), etc.) and may be supplemented by outside experts as appropriate. To assure independence, the leader of the ATR team shall be from outside the home MSC. This Review Plan outlines the proposed approach to meeting this requirement for the LRR. ATR is required for this LRR.

- (3) Quality Control and Agency Technical Review of Contractor Products. In accordance with SPD Regulation 1110-1-8, SPD Quality Management Plan, Section 6.13, contractors shall be responsible for quality control of their work in order to maintain contractor responsibility. The LRR will not include any contractor products.
- (4) Independent External Peer Review. IEPR is the most independent level of review, and is applied in cases that meet certain criteria where the risk and magnitude of the proposed project are such that a critical examination by a qualified team outside of USACE is warranted. Type I IEPR is conducted on project studies. IEPR is managed by an outside eligible organization (OEO) that is described in the Internal Review Code Section 501(c)(3), is exempted from Federal tax under Section 501(a), of the Internal Revenue Code of 1986; is independent; is free from conflicts of interest; does not carry out or advocate for or against Federal water resources projects; and has experience in establishing and administering IEPR panels. The scope of review will address all the underlying planning, engineering, including safety assurance, economics, and environmental analyses performed, not just one aspect of the project. The IEPR will be on the technical aspects of the project, rather than agency and Administration policies. This Review Plan explains why IEPR is not required for this LRR.
- (5) Policy and Legal Compliance Review. In addition to the technical reviews, decision documents will be reviewed throughout the study process for their compliance with law and policy. These reviews culminate in Washington-level determinations that the recommendations in the reports and the supporting analyses and coordination comply with law and policy, and warrant approval or further recommendation to higher authority by the Chief of Engineers. Guidance for policy and legal compliance reviews is addressed further in Appendix H, ER 1105-2-100. Technical reviews described in EC 1165-2-209 are to augment and complement the policy review processes by addressing compliance with published Army polices pertinent to planning products, particularly polices on analytical methods and the presentation of findings in decision documents, DOC and ATR efforts are to include the necessary expertise to address compliance with published planning policy. Counsel will generally not participate on ATR teams, but may at the discretion of the district or as directed by higher authority. When policy and/or legal concerns arise during DQC or ATR efforts that are not readily and mutually resolved by the PDT and the reviewers, the District will seek issue resolution support from the MSC and HQUSACE in accordance with the procedures outlined in Appendix H, ER 1105-2-100. IEPR teams are not expected to be knowledgeable of Army and administration polices, nor are they expected to address such concerns. An IEPR team should be given the flexibility to bring important issues to the attention of decision makers. Legal review will be conducted concurrent with ATR of the LRR.
- (6) Planning Center of Expertise (PCX) Coordination. EC 1165-2-209 outlines PCX coordination in conjunction with preparation of the Review Plan. This Review Plan was coordinated with the PCX for Flood Risk Management (FRM-PCX). The FRM-PCX determined that review by the PCX was not required prior to approval of the Review Plan by SPD because the LRR does not include reformulation or recommendations for changes from the authorized plan.

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- (7) Review Plan Approval and Posting. In order to ensure the Review Plan is in compliance with 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 and the FRM-PCX.
- (8) Safety Assurance Review (SAR). In accordance with Sections 2024 and 2035 of WRDA 2007, EC 1165-2-209 requires that all projects addressing flooding or storm damage reduction undergo a SAR (Type II IEPR) during design and construction. The LRR will reference the Design Documentation Report (DDR) for all engineering information (other than a hydraulic analysis specific to an issue regarding cost allocation). Therefore, engineering reviews are being performed for the DDR and the Plans and Specifications, in accordance with the 2004 PMP for PED and the June 2008 QCP for design, rather than for the LRR. Similarly, SARs will be conducted based on the detailed engineering information included in the DDR and the Plans and Specifications, rather than the descriptive information included in the LRR, and during construction, in accordance with EC 1165-2-209.

#### 2. STUDY INFORMATION

- **A. Implementation Document.** The Hamilton City Limited Reevaluation Report is being prepared to update the project economics for the Hamilton City, California project that was authorized by Congress in WRDA 2007 for the purposes of flood damage reduction and ecosystem restoration. The economic update is required by Corps guidance because more than three fiscal years have elapsed since the release of the Report of the Chief of Engineers in December 2004 (ER 1105-2-100, Appendix D, Amendment 1, paragraph D-4.b.). The current proposed project is the same as the recommended plan in the Feasibility Report that was authorized in the Water Resources Development Act of 2007, except for design refinements. No significant changes have occurred within the project area since completion of the Feasibility Report. Consequently, there was no need for reformulation of the authorized project. The main text of the LRR will be only approximately 12 pages in length, with an economic appendix that will be approximately 28 pages long. The LRR itself will contain no engineering analysis (except for a hydraulic analysis specific to a cost allocation issue) or detailed cost estimates, but will reference the 60% draft Design Documentation Report (DDR) that is being prepared concurrently with the LRR. ATRs of the DDR and associated Plans & Specifications (P&S), are being conducted at the 35%, 60% and 90% stages, but ATR of the DDR and P&S will not be certified prior to review and ATR certification for the LRR. In addition, a Value Engineering study has been completed for the design phase of the project.
- **B. Project Description.** The authorized project would decrease flood risks and restore the ecosystem of the Sacramento River floodplain near the town of Hamilton City. The town and project are located on the western bank of the river in Glenn County, California, about 85 miles north of the city of Sacramento. The authorized project would replace private levees providing a low level of protection with 6.8 miles of new levee, which would be set back from the riverbank in agricultural areas. About 1,500 acres of agricultural land in the setback area would be restored through planting of native riparian and other floodplain vegetation.
- **C. Study Scope.** In addition to updating the project economics based on current price levels, the current discount rate, and the detailed design, the LRR will also summarize differences between the current design and the recommended plan described in the Feasibility Report. The design differences will be summarized to document that no change in project purposes, scope, or significant environmental effects has occurred subsequent to project authorization. Engineering

information and analysis regarding the current design will be provided in the Design Documentation Report, which will be referenced by the LRR. The LRR will also address an issue regarding cost allocation that was identified in the ASA(CW)'s transmittal of the Report of the Chief of Engineers to Congress in 2006.

- **D. Problems and Opportunities.** The authorized project is not being reformulated, so the LRR will not address problems and opportunities other than those previously considered in the 2004 Feasibility Report. The purposes of the authorized project are flood damage reduction and ecosystem restoration.
- **E. Potential Methods.** The authorized project is not being reformulated, so the methods are limited to those included in the authorized project: setback levees, new levees, limited rock erosion protection, limited interior drainage features, fencing, and revegetation with native riparian and associated species.

#### 3. AGENCY TECHNICAL REVIEW PLAN

For this Limited Reevaluation Report, due to the emphasis on flood risk management benefits and structural features, the FRM-PCX will manage ATR and identify individuals to perform ATR.

- **A. General.** An ATR Leader shall be designated by the PCX for the ATR process. The proposed ATR Leader for this LRR is to be determined, but will have expertise in plan formulation. The ATR Leader is responsible for providing information necessary for setting up the review, communicating with the PDT, providing a summary of critical review comments, collecting grammatical and editorial comments from the ATR team (ATRT), ensuring that the ATRT has adequate funding to perform the review, facilitating the resolution of the comments, and certifying that the ATR has been conducted and resolved in accordance with policy. ATR will be conducted for plan formulation, economics, and hydraulic engineering. The LRR will not include any in-kind work by the sponsor. The LRR will reference the Design Documentation Report (DDR) for all engineering and real estate information (other than a hydraulic analysis specific to an issue regarding cost allocation). Therefore, engineering and real estate reviews are being performed for the DDR and the Plans and Specifications, in accordance with the 2004 PMP and the June 2008 QCP, rather than for the LRR.
- **B.** Agency Technical Review Team (ATRT). The ATRT will be comprised of individuals that have not been involved in the development of the implementation document and will be chosen based on expertise, experience, and/or skills. The members will selected from outside of the MSC wherever possible. In general, the review team members will each have a minimum of 10 years education and experience in their respective discipline. A statement of qualifications is required for acceptance of review team members. It is anticipated that the team will consist of three reviewers. The ATRT members will be identified by the lead PCX at the time the review is conducted and will be presented in Appendix B. The Sacramento District or SPD may nominate ATRT members. General descriptions of ATR disciplines are as follows:

Plan Formulation: Team member will be experienced in the civil works process, current planning and policy guidance, post-authorization studies, and multiple-purpose plan formulation that includes ecosystem restoration and cost allocation.

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

Hydraulics: Team member will be an expert in the field of hydraulics, have a thorough understanding of the dynamics of open channel flow systems. The team member will have an understanding of HEC-RAS.

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

- (1) The team will use DrChecks to document the ATR process. The lead planner or project manager will facilitate the creation of a project portfolio in the system to allow access by all PDT and ATRT members. An electronic version of the document, appendices, and any significant and relevant public comments shall be posted in MS Office or Adobe Acrobat compatible format at: <a href="ftp://ftp.usace.army.mil/pub/">ftp://ftp.usace.army.mil/pub/</a> at least one business day prior to the start of the comment period.
- (2) The lead planner shall notify the ATR Leader when the document has been posted. ATRT members shall download and print documents as necessary.
- (3) The PDT shall host a virtual ATR kick-off meeting to orient the ATRT during the first week of the comment period.
- (4) The lead planner shall notify the ATR Leader when all responses have been entered into DrChecks.
- (5) A revised electronic version of the report and appendices with comments incorporated shall be posted at <a href="ftp://ftp.usace.army.mil/pub/">ftp://ftp.usace.army.mil/pub/</a> for use during back checking of the comments.
- (6) PDT members shall contact ATRT members or ATR Leader as appropriate to seek clarification of a comment's intent or provide clarification of information in the report. Discussions shall occur outside of DrChecks but a summary of discussions may be provided in the system.
- (7) Reviewers will be encouraged to contact PDT members directly via email or phone to clarify any confusion. DrChecks shall not be used to post questions needed for clarification.

#### D. Funding

- (1) The PDT district shall provide labor funding by cross charge labor codes. Funding for travel, if needed, will be provided. The lead planner will work with the ATR Leader to ensure that adequate funding is available and is commensurate with the level of review needed. The current cost estimate for this review is \$8,000. Any funding shortages will be negotiated on a case by case basis and in advance of a negative charge occurring.
- (2) The ATR Leader shall provide organization codes for each team members and a responsible financial point of contact (CEFMS responsible employee) for creation of labor codes.
- (3) Reviewers shall monitor individual labor code balances and alert the ATR Leader to any possible funding shortages.

#### E. Timing and Schedule

(1) Throughout the development of this document, the PDT will conduct seamless review to ensure quality.

- (2) ATR will be conducted on the Limited Reevaluation Report. No review milestones or formal draft report are anticipated.
- (3) The timeline for the ATR process for this document is given in the table below. Actual dates will be scheduled once the period draws closer. All products produced for these milestones will be reviewed.

#### **ATR Timeline**

Task	Date
ATR for Limited Reevaluation Report	4th Qtr FY10

#### F. Review

- (1) ATRT responsibilities are as follows:
  - (a) Reviewers shall review the LRR to confirm that work was done in accordance with established professional principles, practices, codes, and criteria and for compliance with laws and policy. Comments shall be submitted into DrChecks.
  - (b) Reviewers shall pay particular attention to one's discipline but may also comment on other aspects as appropriate. Reviewers that do not have any significant comments pertaining to their assigned discipline shall provide a comment stating this.
  - (c) Grammatical and editorial comments shall not be submitted into DrChecks. Comments should be submitted to the ATR Leader via electronic mail using tracked changes feature in the MS Office compatible document or as a hard copy mark-up. The ATR Leader shall provide these comments to the lead planner.
  - (d) Review comments shall contain these principal elements:
    - a clear statement of the concern
    - the basis for the concern, such as law, policy, or guidance
    - significance for the concern
    - specific actions needed to resolve the comment
  - (e) The "Critical" comment flag in DrChecks shall not be used unless the comment is discussed with the ATR Leader and/or the lead planner first.
- (2) PDT responsibilities are as follows:
  - (a) The PDT 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.
  - (b) PD members shall discuss any "non-Concur" responses prior to submission with the PDT and ATRT Leader.

#### G. Resolution

- (1) Reviewers shall back check PDT responses to the review comments and either close the comment or attempt to resolve any disagreements. Conference calls shall be used to resolve any conflicting comments and responses.
- (2) A reviewer may close a comment if the comment is addressed and resolved by the response, or if the reviewer determines that the comment was not a valid technical comment as a result of a rebuttal, clarification, or additional information, or because the comment was advisory, primarily based on individual judgment or opinion, or editorial. If reviewer and responder cannot resolve a comment, it should be brought to the attention of the ATR Leader and, if not resolved by the ATR Leader, it should be brought to the attention of the planning chief who will need to sign the certification. ATRT members shall keep the ATR Leader informed of problematic comments. The vertical team will be informed of any policy variations or other issues that may cause concern during HQ review. A comment may also be closed when it has been addressed or deferred to the policy compliance review process by HQUSACE.
- **H. Certification.** ATR certification is required for the LRR. No pre-conference documents or formal draft report will be prepared. See Appendix A for ATR certification statement. A summary report of all comments and responses will follow this statement and accompany the report throughout the approval process.

#### 4. INDEPENDENT EXTERNAL PEER REVIEW PLAN

The Hamilton City LRR will present the results of a limited reevaluation undertaken to update the economics (benefits and costs) for a project that was authorized by Congress in WRDA 2007. The Hamilton City LRR is a post-authorization implementation document that will not require a new report of the Chief of Engineers or another authorization by Congress or require a new or revised environmental impact statement to be prepared. As an implementation document, the main function of the LRR is to verify that the proposed construction project is still within the scope of the existing Congressional authorization, and is still economically justified for budget development purposes. Therefore, Independent External Peer Review (Type I IEPR) is not required for the LRR.

However, all projects addressing flooding or storm damage reduction are required by Section 2035 of WRDA 2007 to undergo a safety assurance review prior to the initiation of physical construction. A safety assurance review (Type II IEPR) will be conducted based on the Design Documentation Report and the Plans and Specifications prior to the initiation of construction.

Although Type I IEPR is not required for the LRR for the reasons stated above, the following information is provided to address items on the PCX checklist for review of this Review Plan: The LRR is not expected to contain influential scientific information nor be a highly influential scientific assessment. The LRR is not expected to use novel methods, present complex challenges for interpretation, contain precedent-setting methods or models, or present conclusions that are likely to change prevailing practices. The LRR will not be highly complex in comparison to other Corps studies. However, the total project cost of the project will exceed \$45 million (current estimate: \$61 million). Hamilton City has a population of about 2,000 and most of the town is subject to flooding, so there are public safety concerns. The project has broad support and is not controversial. An environmental impact statement was completed in 2004.

**A. Project Magnitude.** For reasons described in the preceding paragraphs, the magnitude of this

project is determined as moderate.

- **B. Project Risk.** This project is considered to have moderate overall risk. The potential for failure is moderate relative to other Corps projects because the Sacramento River is a major waterway that can experience long periods of sustained high flows, potentially resulting in seepage and erosion problems as well as flooding. However, the structures included in the project are moderate in scale and conventional in design. Due to successful flood-fighting, recent flooding in the project area has been limited to backwater flooding of agricultural lands south of Hamilton City. The 500-year floodplain encompasses the entire town of Hamilton City, including critical structures such as public schools, the fire station, and the waste water treatment plant. Safety assurance is being considered during the development of detailed designs.
- **C. Vertical Team Consensus.** This Review Plan served as the coordination document to obtain vertical team consensus. MSC approval of the plan indicated vertical team consensus.

#### 5. MODEL CERTIFICATION

For the purposes of this RP section, planning models are defined as any models and analytical tools that planners use to define water resources management problems and opportunities, to formulate potential alternatives to address the problems and take advantage of the opportunities, to evaluate potential effects of alternatives and to support decision-making. It includes all models used for planning, regardless of their scope or source, as specified in the following subparagraphs. This RP section does not cover engineering models used in planning which will be certified under a separate process to be established under SET.

The computational models to be employed in the LRR have either been developed by or for the USACE. Planning models to be used for the LRR are:

HEC-FDA (Current working version undergoing review for certification; expected to be certified within the next year). This model, developed by the Corps' Hydrologic Engineering Center, will be used to update the flood damages and benefits for the project.

#### 6. PUBLIC REVIEW

Opportunities for public participation and review were provided during the feasibility study. Although development of the detailed design is being conducted in coordination with local interests, no further participation or review by the general public is anticipated. Therefore, no additional public comments will be available to the ATR team.

#### 7. POINTS OF CONTACT

- **A. Project Delivery Team.** The PDT is comprised of those individuals directly involved in the development of the implementation document. Individual contact information and disciplines are presented in Appendix B. No in-kind services by the non-federal sponsor are anticipated for the LRR.
- **B. Vertical Team.** The Vertical Team includes District management, District Support Team (DST) and Regional Integration Team (RIT) staff as well as members of the Planning of Community of Practice (PCoP). Specific points of contact for the Vertical Team can be found in Appendix B.

**C. PCX.** The appropriate PCX for this document is the Flood Risk Management Planning Center of Expertise located at SPD. This Review Plan was submitted to the FRM-PCX Program Manager for review and comment on March 19, 2009. Because the LRR is not anticipated to include reformulation or recommendations for changes from the authorized plan, the FRM-PCX Program Manager determined that EC 1105-2-410 did not apply to this Review Plan and that review by the PCX was not required prior to SPD approval of the Review Plan.

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

1. District Point of Contact: Scott Miner, 916-557-6695

2. MSC Point of Contact: Karen Berresford, 415-503-6557

3. FRM-PCX Point of Contact: Eric Thaut, 415-503-6852

#### 8. APPROVALS

The PDT will carry out the Review Plan as described. The lead planner submitted the Review Plan to the FRM-PCX for review on 19 March 2009. The FRM-PCX Program manager determined on 29 March 2009 that coordination of this Review Plan with the PCX was not required. The Review Plan was approved by the South Pacific Division on 14 April 2009.

This Review Plan is a "living document" and may change as the study progresses. The FRM-PCX shall be provided an electronic copy of any approved revised Review Plan. The PDT shall follow the SPD DST's guidance for processing revised Review Plans.

This update of the Review Plan was prepared in April 2010 to incorporate minor changes resulting from the approval of EC 1165-2-209 on 31 January 2010. The study schedule and estimated project cost were also updated. There were no changes in the level of review. Electronic copies of this updated RP will be provided to the FRM-PCX and SPD.

# REVIEW PLAN HAMILTON CITY, CALIFORNIA LIMITED REEVALUATION REPORT SACRAMENTO DISTRICT

### APPENDIX A STATEMENT OF TECHNICAL REVIEW

## COMPLETION OF AGENCY TECHNICAL REVIEW HAMILTON CITY, CALIFORNIA LIMITED REEVALUATION REPORT

The Sacramento District has completed the Limited Reevaluation Report for the Hamilton City, California project. Notice is hereby given that 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 Review Plan. During the agency technical review, compliance with established policy principles and procedures, utilizing justified and valid assumptions, was verified. This included review of: assumptions, methods, procedures, and material used in analyses; alternatives evaluated; the appropriateness of data used and level obtained; and reasonableness of the result, including whether the product meets the customers' needs consistent with law and existing Corps policy. The ATR was accomplished by an agency team composed of staff from multiple districts. All comments resulting from the ATR have been resolved.

NAME	Date	
Hamilton City Limited Reevaluation Report		
Agency Technical Review Leader		

#### CERTIFICATION OF AGENCY TECHNICAL REVIEW

A summary of all comments and responses is attached. of the resolution are as follows:	Significant concerns and the explanation
(Describe the major technical concerns, possible impac	ct and resolution)
As noted above, all concerns resulting from the agency fully resolved.	technical review of the project have been
Alicia Kirchner Chief, Planning Division	Date
Sacramento District	

## HAMILTON CITY, CALIFORNIA LIMITED REEVALUATION REPORT

#### SACRAMENTO DISTRICT

#### APPENDIX B

#### PROJECT DELIVERY TEAM

Name	Discipline		
Tom Karvonen	Project Manager		
Scott Miner	Lead Planner		
Timi Shimabukuro	Economics		
Don Lash	Environmental Resources		
Richard Perry	Cultural Resources		
Markus Boedtker	Civil Design		
Lea Adams	Hydraulic Design		
Kurt Friederich	Cost Engineering		
Mary Perlea	Geotechnical Engineering		
Laurie Parker	Real Estate		

#### AGENCY TECHNICAL REVIEW TEAM

Name	Discipline
TBD	ATR Leader/Plan Formulation
TBD	Hydraulics
TBD	Economics

#### **VERTICAL TEAM**

Name	Discipline	Phone	Email
Karen Berresford	District Support Team Lead	415-503-6557	Karen.G.Berresford@usace.army.mil
Ken Zwickl	Regional Integration Team	202-761-4085	Kenneth.J.Zwickl@usace.army.mil

## PLANNING CENTER OF EXPERTISE FLOOD RISK MANAGEMENT

Name	Discipline	Phone	Email
	Program Manager, PCX Flood		
Eric Thaut <sup>1</sup>	Risk Management	415-503-6852	Eric.W.Thaut@usace.army.mil
	Program Manager, PCX		
David Vigh,	Ecosystem Restoration	601-634-5854	David.A.Vigh@usace.army.mil

<sup>&</sup>lt;sup>1</sup> Primary PCX is FRM, who will coordinate with Eco-PCX as appropriate.

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## APPENDIX C ACRONYMS AND ABBREVIATIONS

<u>Term</u>	<u>Definition</u>	<u>Term</u>	<u>Definition</u>
ASA(CW)	Assistant Secretary of the Army	OMRR&R	Operation, Maintenance, Repair,
	for Civil Works		Replacement and Rehabilitation
ATR	Agency Technical Review	OEO	Outside Eligible Organization
CEQA	California Environmental Quality	PCX	Planning Center of Expertise
	Act		
CESPD	Corps of Engineers, South Pacific	PDT	Project Delivery Team
	Division		
		PAC	Post Authorization Change
DQC	District Quality Control	PPA	Project Partnership Agreement
DX	Directory of Expertise	PL	Public Law
EA	Environmental Assessment	QMP	Quality Management Plan
EC	Engineer Circular	QA	Quality Assurance
EDR	Engineering Documentation	QC	Quality Control
	Report		
EIR	Environmental Impact Report	RED	Regional Economic Development
EIS	Environmental Impact Statement	WRDA	Water Resources Development Act
EO	Executive Order		
ER	Ecosystem Restoration		
FDR	Flood Damage Reduction		
FEMA	Federal Emergency Management		
	Agency		
FRM	Flood Risk Management		
GRR	General Reevaluation Report		
IEPR	Independent External Peer Review		
ITR	Independent Technical Review		
MSC	Major Subordinate Command		
NED	National Economic Development		
NER	National Ecosystem Restoration		
NEPA	National Environmental Policy		
	Act		
O&M	Operation and Maintenance		
OMB	Office of Management and		
	Budget		