DEPARTMENT OF THE ARMY
SOUTHWESTERN DIVISION, CORPS OF ENGINEERS
1100 COMMERCE STREET, SUITE 831
DALLAS TX 75242-1317

REPLY TO
ATTENTION OF

CESWD-PDP

12 DEC 2012

MEMORANDUM FOR Commander, Ft. Worth District

SUBJECT Dallas Floodway Feasibility Study, Environmental Impact Statement and Trinity River Corridor Projects Comprehensive Review Plan, Part I and II.

1. Reference: EC 1165-2-209, Civil Works Review Policy, 31 Jan 2010; and Change 1, 31 Jan 2012.

2. The subject review plan, prepared in accordance with reference 1, has been reviewed by my staff and coordinated with the Risk Management Center and Flood Risk Management Planning Center of Expertise. The decision documents addressed in Part I will undergo Type I Independent External Review (IEPR). Documents and products addressed in Parts I and II will undergo IEPR Type II Safety Assurance Review for the implementation products.

3. Therefore, the Dallas Floodway Feasibility Study, Environmental Impact Statement and Trinity River Corridor Projects Comprehensive Review Plan, Parts I and II, are hereby approved for execution of review efforts on the decision and implementation documents. The Comprehensive Review Plan must be posted to the District website within two business days of receipt of this approval notice.

4. The point of contact for this action is Lanora Wright at Lanora.Wright@usace.army.mil, office phone 469-487-7032 or Mr. Michael Jordan at Michael.Jordan@usace.army.mil, office phone 469-487-7065.

Thomas W. Kula

THOMAS W. KULA
Brigadier General, USA
Commanding

Encl

CF:
(CESWF-PER-E, R. Newman)

REVIEW PLAN

PART I
Dallas Floodway Feasibility Report and
Environmental Impact Statement
Dallas, Texas

Fort Worth District

MSC Approval Date: *12 December 2012*
Last Revision Date: *07 November 2007*

US Army Corps
of Engineers ®

REVIEW PLAN

Dallas Floodway Feasibility Report and Environmental Impact Statement

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1. PURPOSE AND REQUIREMENTS

a. Purpose. This Review Plan defines the scope and level of peer review for the Dallas Floodway Feasibility Study and integrated Environmental Impact Statement (EIS) being conducted by the U.S. Army Corps of Engineers (USACE). The study authority is Section 5141 of the Water Resources Development Act of 2007. This Review Plan is Part I of a two part Comprehensive Review Plan for the Trinity River Corridor Project (TRCP) in Dallas, Texas. Part II contains the scope and level of peer review for the TRCP projects in the design and construction phase including Dallas Floodway Extension, the Dallas Floodway Levee System 100-year Improvements, Section 408 packages, Interior Drainage facility improvements, and the Irving Levee System 100-year Improvements.

b. References

(1) Change 1, 31 Jan 2012 to Engineering Circular (EC) 1165-2-209, Civil Works Review Policy, 31 Jan 2010
(2) EC 1105-2-412, Assuring Quality of Planning Models, 31 Mar 2011
(3) Engineering Regulation (ER) 1110-1-12, Quality Management, 30 Sep 2006
(4) ER 1105-2-100, Planning Guidance Notebook, Appendix H, Policy Compliance Review and Approval of Decision Documents, Amendment #1, 20 Nov 2007
(5) Project Management Plan for the Dallas Floodway Feasibility Study, May 5, 2010
(6) District Quality Management Plan
(7) Dallas Floodway FCSA, May 5, 2010
(8) Implementation Guidance for Section 5141 of WRDA 2007 – Dallas Floodway, Dallas, TX 01 Dec 09
(9) ER 1165-2-119, Modifications to Completed Projects, 20 Sep 1982
(10) CECW-PB Memorandum, 17 Nov 2008, Clarification Guidance on the Policy and Procedural Guidance for the Approval of Modifications and Alternations of Corps of Engineers Projects
(11) Army Regulation 15-1, Committee Management, 27 Nov 1992, Federal Advisory Committee Act Requirements
(12) National Academy of Sciences, Background Information and Confidential Conflict of Interest Disclosure, BI/COI Form 3, May 2003
(13) CECW-CP Memorandum dated 8 February 2012, subject: U.S. Army Corps of Engineers Civil Works Feasibility Study Program Execution and Delivery

c. Requirements. This review plan was developed in accordance with EC 1165-2-209, which establishes an accountable, comprehensive, life-cycle review strategy for Civil Works products by providing a seamless process for review of all Civil Works projects from initial planning through design, construction, and operation, maintenance, repair, replacement and rehabilitation (OMRR&R). The EC outlines four general levels of review: District Quality Control/Quality Assurance (DQC), Agency Technical Review (ATR), Independent External Peer Review (IEPR), and Policy and Legal Compliance Review. In addition to these levels of review, decision documents are subject to cost engineering review and certification (per EC 1165-2-209) and planning model certification/approval (per EC 1105-2-412).

2. REVIEW MANAGEMENT ORGANIZATION (RMO) COORDINATION

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

The RMO will coordinate with the Cost Engineering Directory of Expertise (DX) to ensure the appropriate expertise is included on the review teams to assess the adequacy of cost estimates, construction schedules and contingencies. The Ecosystem (ECO) PCX will be coordinated with regarding environmental issues and models. The Risk Management Center (RMC) will be coordinated with regarding issues of life safety. The RMC will also be responsible for any Type II IEPR (Safety Assurance Review) conducted during project implementation.

3. STUDY INFORMATION

a. Decision Document. A combined Feasibility Report (FR)/Environmental Impact Statement (EIS) will be prepared by the Fort Worth District and forwarded to the ASA(CW) as a decision document. The Draft FR/EIS will be revised to incorporate comments from agencies, the public, and higher authority review. The approval authority for USACE is the Director of Civil Works.

A Record of Decision (ROD) will be prepared and signed by the final decision maker, the ASA(CW), in accordance with 40 CFR 1505.2 to document the USACE final decision or recommendation to Congress on an action requiring an EIS. The ROD will state what the decision was, identify the alternatives considered, identify the environmentally preferred alternative(s), discuss the considerations that were instrumental in making the decision, provide rationale and state whether all practicable means to avoid and minimize environmental harm have or have not been adopted, and discuss mitigation measures included in the recommended plan, along with a summary of any required mitigation monitoring.

b. Study/Project Description. The TRCP encompasses a 20-mile stretch of the Trinity River through the City of Dallas shown in Figure 1. The Dallas Floodway Feasibility Study (and EIS) is a multipurpose study for flood risk management, environmental management, recreation, transportation, and community/economic development in the Trinity River Watershed in the general vicinity shown within the blue circle in Figure 1. The non-Federal sponsor for the Dallas Floodway Feasibility Study is the City of Dallas, Texas (City). Estimated costs for the Feasibility Study are about $40 million, and total project cost is authorized at $459 million. The district is in the process of revising the Project Management Plan (PMP) and Feasibility Cost Share Agreement (FCSA) to align with the Civil Works Transformation initiatives.

The Dallas Floodway Feasibility Study and EIS will be very complex, non-typical USACE feasibility study and will investigate the potential implementation of three major elements, including Interior Drainage Plan (IDP), the Balanced Vision Plan (BVP), and Local Features. In addition to what is being studied by the USACE, the City is implementing a Levee Remediation Plan which could include bringing the levees back to at least a 1% Annual Chance Exceedance (100-year) event so the City can keep their Federal Emergency Management Agency (FEMA) accreditation.

Balanced Vision Plan

The BVP includes the City's plan to implement flood risk management, ecosystem restoration and recreation features defined in the City's report The Balanced Vision Plan for the Trinity River Corridor, Dallas, Texas, report dated December 2003, and amended in March 2004. Section 5141 of Water Resources Development Act (WRDA) of 2007 authorizes USACE to work with the City and construct the BVP provided USACE determines the BVP is "technically sound" and "environmentally acceptable." The current Implementation Guidance requires the flood risk management feature of the BVP to be evaluated for economic justification in accordance with the Principles and Guidelines for Water and Related Land Resources, dated 10 March 1983, and determine whether "reconstruction" of system features is warranted.

Interior Drainage Plan

The City's IDP contains improvements to the existing and construction of new pumping stations (including the Able, Baker, Charlie, Delta, Hampton, Trinity Portland, and Pavaho pump stations), to restore sump capacity to provide protection against the 1% Annual Chance Exceedance (100-year) Event outside the levee, and improve gravity and pressure storm sewers. These features are defined in the reports prepared by the City for the East Levee (Phase I) and the West Levee (Phase II).

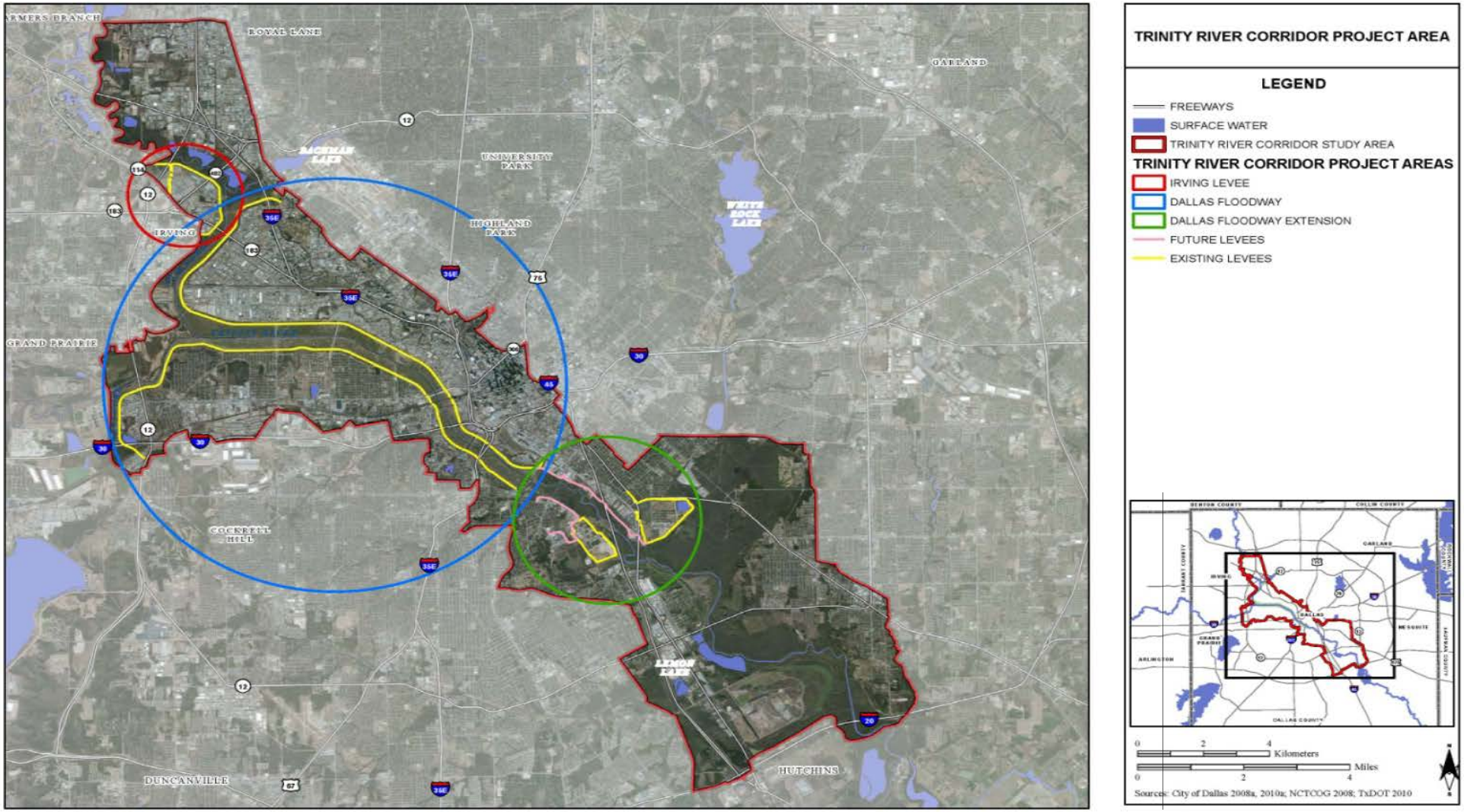

TRINITY RIVER CORRIDOR PROJECT AREA
LEGEND
FREEWAYS
SURFACE WATER
TRINITY RIVER CORRIDOR STUDY AREA
TRINITY RIVER CORRIDOR PROJECT AREAS
IRVING LEVEE
DALLAS FLOODWAY
DALLAS FLOODWAY EXTENSION
FUTURE LEVEES
EXISTING LEVEES
ROYAL LANE
GARLAND
UNIVERSITY PARK
HIGHLAND PARK
IRVING
GRAND PRAIRIE
COCKRELL HILL
DUNCANVILLE
HUTCHINS
0 2 4 Kilometers
0 2 4 Miles
Sources: City of Dallas 2008a, 2010a; NCTCOG 2008; TxDOT 2010

Figure 1

Section 5141 of WRDA 2007 authorizes USACE to review the Interior Levee Drainage Study Phase-I report, dated September 2006 and to work with the City to construct the project provided USACE determines it is "technically sound" and "environmentally acceptable." The authorization does not currently provide for the City's Interior Drainage Study Phase II Report for the West Levee (Charlie, Pavaho, and Delta) to be part of the authorized WRDA Project.

Local Features

The Local Features consists of those items not included in the BVP or IDP, nor authorized by Section 5141 of WRDA 2007, which may be implemented by non-federal entities subject to compliance with Section 408 permit criteria from USACE that states these features would not have adverse effects on the functioning of the Dallas Floodway Levee System. These alterations/modifications may include the Trinity Parkway, Trinity River Standing Wave, the Santa Fe Trestle Trail, the Pavaho Wetlands, the Dallas Horseshoe Project, the Sylvan Avenue Bridge, Jefferson Bridge, Dallas Water Utilities (DWU) Waterlines, the Baker Pumping Station High Power Gas Lines, and the EF-2 Interceptor Line. The local features will be evaluated in a "comprehensive, system-wide analysis" to ensure proposed alterations and modifications will meet USACE engineering and safety standards. Upon completion of this comprehensive, system-wide analysis, non-Federal interests may submit packages for approval under Section 408. Local features, except the Trinity Parkway, will require separate review and approval under Section 408 after the comprehensive analysis. This process is described in Part II of the Comprehensive Review Plan. The Trinity Parkway may require additional evaluation for compatibility with other project elements under Section 408 or it could be incorporated into the review and approval process for the FR/EIS. It is unknown at this stage of the study, which review and approval process the Trinity Parkway will require.

Levee Remediation Plan

The Levee Remediation Plan (LRP) addresses the levee structural integrity concerns and Operation and Maintenance (O&M) deficiencies (which are the responsibility of the City of Dallas) identified in the Periodic Inspection No. 9 (PI No. 9); and identification of potential design and construction deficiencies for the existing Dallas Floodway Levee System as defined in the original 1945 project authorization. The LRP includes approval of the City of Dallas Maintenance Deficiency Correction Period (MDCP) plan and approval for correcting the 198 listed O&M items, a determination of whether there were any design and construction deficiencies with the original project, and closeout plan for the 21 PI No. 9 items deferred to the feasibility study since they could be considered beyond routine maintenance and repair.

c. Factors Affecting the Scope and Level of Review. This study triggers every requirement for District Quality Control (DQC), Agency Technical Review (ATR), Type I Independent Technical Review (IEPR), and Type II IEPR in accordance with EC 1165-2-209. These types of reviews are described in sections 4, 5 and 6 of this review plan. The District Chief of Engineering has made the assessment there is life safety risk. There is a population behind the Dallas Floodway Levee System that is at risk if there was a failure of the levee system. The Corps and the City of Dallas are looking for ways to reduce the risk.

The proposed National Environmental Policy Act (NEPA) document would be an Environmental Impact Statement (EIS). The project involves potential historic levees. There is the potential to come across hazardous or special handling requirement of materials. There is significant controversy with the project. Finally, it has the potential to affect an existing Federal project.

d. In-Kind Contributions. The sponsor will provide a significant amount of work-in-kind contributions. This includes geotechnical drilling, lab testing and studies estimated at approximately $20 million. In addition to the geotechnical studies, the non-Federal sponsor will provide another estimated $3 million on Project Management, Public Involvement and other disciplines as needed.

4. DISTRICT QUALITY CONTROL (DQC)

DQC is the review of basic science and engineering work products focused on fulfilling the project quality requirements defined in the Project Management Plan (PMP). It is managed in the home district and may be conducted by staff in the home district as long as they are not doing the work involved in the study, including reviewing contracted work. Basic quality control tools include a Quality Management Plan providing for seamless review, quality checks and reviews, supervisory reviews, and Project Delivery Team (PDT) reviews. Additionally, the PDT is responsible for a complete reading of the report to assure the overall integrity of the report, technical appendices, and the recommendations before approval by the District Commander. The Major Subordinate Command (MSC)/District quality management plans address the conduct and documentation of this fundamental level of review.

a. Documentation of DQC. DQC shall be consistent with the PMP and the Southwestern Division (SWD) Quality Assurance Plan. DQC comments and responses shall be documented in DrChecks or other electronic means. This comment report will be provided to the Agency Technical Review (ATR) team lead prior to the ATR kick off meeting.

b. Products to Undergo DQC. DQC should review any technical assumptions, modeling parameters, and calculations as well as the content and format of the technical appendix submitted and should take place at a minimum prior to the ATR's for the Feasibility Scoping Meeting (FSM), Alternatives Formulation Briefing (AFB), Draft Report and Final Report. Additionally, any products from contractors (such as NEPA documentation) or products provided by the non-Federal sponsor should undergo DQC prior to being incorporated into the analysis used to generate technical information and products.

5. AGENCY TECHNICAL REVIEW (ATR)

ATR is mandatory for all decision documents (including supporting data, analyses, environmental compliance documents, etc.). The objective of ATR is to ensure consistency with established criteria, guidance, procedures, and policy. The ATR will assess whether the analyses presented are technically correct and comply with published USACE guidance, and that the document explains the analyses and results in a reasonably clear manner for the public and decision makers. ATR is managed within USACE by the designated RMO and is conducted by a qualified team from outside the home district that is not involved in the day-to-day production of the project/product. ATR teams will be comprised of senior USACE personnel and may be supplemented by outside experts as appropriate. The ATR team lead will be from outside the home MSC.

a. Products to Undergo ATR. ATR will occur prior to major decision points in the planning process so that the technical results can be relied upon in setting the course for further study. An in-depth review of the report and all appendices will be coordinated and documented by the PDT leader prior to HQUSACE policy compliance review. All ATRs will be coordinated with the Planning Center of Expertise for Flood Risk Management. The ATR will be accomplished by an independent entity outside the Fort Worth District, within USACE, as designated by the PCX. The purpose of this review is to ensure the proper application of clearly established criteria, regulations, laws, codes, principles, and professional practices of all project decision documents. The intent is for an ATR to not only ensure technical analyses are correct, but also to ensure compliance with all pertinent USACE guidance and delivery of high quality products early in the study prior to HQUSACE review. ATR will be completed on the following documentation:

- FSM Documentation
- In-Progress Review Documentation
- AFB Documentation
- Draft Feasibility Report/EIS
- Final Feasibility Report/EIS

Technical products developed will be considered for incremental product review by the ATR team or selected team members such as H&H, geotechnical, economic, and environmental analysis as those products are developed.

b. Required ATR Team Expertise. The expertise and disciplines represented on the ATR team reflect the significant disciplines involved in the planning effort. The ATR team consists of at least 10 team members outside of the Fort Worth District in the following functional areas:

ATR Team Members/Disciplines	Expertise Required
ATR Lead	The ATR lead should be a senior professional with extensive experience in preparing Civil Works decision documents and conducting ATR. The lead should also have the necessary skills and experience to lead a virtual team through the ATR process. The ATR lead may also serve as a reviewer for a specific discipline (such as planning, economics, environmental resources, etc).
Plan Formulation	Team member should be a plan formulation subject matter expert, have extensive experience in the USACE planning process, and be knowledgeable of USACE policies and guidelines. He or she should be familiar with flood risk management projects, water resources, and watershed planning and have experience relevant to issues associated with levee project plan formulation.
Economics	Team member should be an economics subject matter expert and have extensive experience in flood risk management projects, including levee analysis, and a thorough understanding of HEC-FDA.
Environmental Resources	Team member should be an environmental subject matter expert and be familiar with preparing, processing, and reviewing environmental impact statements.
Cultural Resources	This project might require two cultural resources team members. Team member(s) should demonstrate experience with historic architecture and have experience with archeological resources.
Hydrology & Hydraulic Engineering	Team member should be an H&H subject matter expert, demonstrate experience in the field of urban hydrology and hydraulics, and have a thorough understanding of levee systems, the effects of management practices, high impact of urban development on hydrology, the use of levees and floodwalls within the space constraints of an urban environment, the use of non-structural systems as they apply to flood proofing, warning systems, and evacuation, and the use of HEC computer modeling systems. The individual should be a certified PE.
Risk Analysis	The risk analysis reviewer will be experienced with performing and presenting risk analyses in accordance with ER 1105-2-101 and other related guidance, including familiarity with how information from the various disciplines involved in the analysis interact and affect the results.
Geotechnical Engineering	Team member should be a geotechnical subject matter expert and should have extensive experience in levee and floodwall design, pre- and post-construction evaluation, and rehabilitation. The individual should be a certified PE.
Civil Engineering	Team member should be a civil design subject matter expert and have experience with levee design, utility relocations, positive closure requirements, and interior drainage requirements. The individual should be a certified PE.

Structural Engineering	Team member should have a thorough understanding of structural measures to include, but not be limited to, retaining walls, pump stations, gate structures, bridges and culverts, utility penetrations, and stoplog and sandbag gaps. The individual should be a certified PE.
Cost Engineering	Team member should be familiar with cost estimating for similar projects in MCACES. Review includes construction schedules and contingencies for any document that requires Congressional authorization. The team member will be a Certified Cost Technician, Certified Cost Consultant, or Certified Cost Engineer. As the Cost Engineering Directory of Expertise, Walla Walla District will assign this team member as part of a separate effort coordinated by the ATR or IEPR team lead in conjunction with the geographic district's project manager.
Real Estate	Team member should have experience developing real estate plans for multi-objective USACE Civil Works projects. Such projects would include acquisition of multiple interests and estates, planning for issues related to contaminated sites, significant utility and facility relocations, relocations of residential owners and businesses, and modifications to existing Federal projects.
Hazardous, Toxic and Radioactive Waste (HTRW)	Team members should be familiar with similar USACE Civil Works studies and projects.

Legal review is the responsibility of the USACE, Office of Counsel and is not under the purview of the ATR team.

c. Documentation of ATR. DrChecks review software will be used to document all ATR comments, responses and associated resolutions accomplished throughout the review process. Comments should be limited to those that are required to ensure adequacy of the product. The four key parts of a quality review comment will normally include:

(1) The review concern – identify the product's information deficiency or incorrect application of policy, guidance, or procedures;
(2) The basis for the concern – cite the appropriate law, policy, guidance, or procedure that has not be properly followed;
(3) The significance of the concern – indicate the importance of the concern with regard to its potential impact on the plan selection, recommended plan components, efficiency (cost), effectiveness (function/outputs), implementation responsibilities, safety, Federal interest, or public acceptability; and
(4) The probable specific action needed to resolve the concern – identify the action(s) that the reporting officers must take to resolve the concern.

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

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

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

- Identify the document(s) reviewed and the purpose of the review;
- Disclose the names of the reviewers, their organizational affiliations, and include a short paragraph on both the credentials and relevant experiences of each reviewer;
- Include the charge to the reviewers;
- Describe the nature of their review and their findings and conclusions;
- Identify and summarize each unresolved issue (if any); and
- Include a verbatim copy of each reviewer's comments (either with or without specific attributions), or represent the views of the group as a whole, including any disparate and dissenting views.

ATR may be certified when all ATR concerns are either resolved or referred to the vertical team for resolution and the ATR documentation is complete. The ATR Lead will prepare a Statement of Technical Review certifying that the issues raised by the ATR team have been resolved (or elevated to the vertical team). A Statement of Technical Review should be completed, based on work reviewed to date, for the AFB, draft report, and final report. A sample Statement of Technical Review is included in Attachment 2.

6. INDEPENDENT EXTERNAL PEER REVIEW (IEPR)

IEPR may be required for decision documents under certain circumstances. IEPR is the most independent level of review, and is applied in cases that meet certain criteria where the risk and magnitude of the proposed project are such that a critical examination by a qualified team outside of USACE is warranted. A risk-informed decision, as described in EC 1165-2-209, is made as to whether IEPR is appropriate. IEPR panels will consist of independent, recognized experts from outside of the USACE in the appropriate disciplines, representing a balance of areas of expertise suitable for the review being conducted. There are two types of IEPR:

- Type I IEPR. Type I IEPR reviews are managed outside the USACE and are conducted on project studies. Type I IEPR panels assess the adequacy and acceptability of the economic and environmental assumptions and projections, project evaluation data, economic analysis, environmental analyses, engineering analyses, formulation of alternative plans, methods for integrating risk and uncertainty, models used in the evaluation of environmental impacts of proposed projects, and biological opinions of the project study. Type I IEPR will cover the entire decision document or action and will address all underlying engineering, economics, and environmental work, not just one aspect of the study. For decision documents where a Type II IEPR (Safety Assurance Review) is anticipated during project implementation, safety assurance shall also be addressed during the Type I IEPR per EC 1165-2-209.

- Type II IEPR. Type II IEPR, or Safety Assurance Review (SAR), are managed outside the USACE and are conducted on design and construction activities for hurricane, storm, and flood risk management projects or other projects where existing and potential hazards pose a significant threat to human life. Type II IEPR panels will conduct reviews of the design and construction activities prior to initiation of physical construction and, until construction activities are completed, periodically thereafter on a regular schedule. The reviews shall consider the adequacy, appropriateness, and acceptability of the design and construction activities in assuring public health safety and welfare.

a. Decision on IEPR. IEPR Type I and Type II will be required for this study. The non-performance of a flood risk management feature would result in significant impacts to project economics, the environment, and life, heath, and safety. This alone triggers the need for an IEPR. In addition to these triggers, there are geotechnical concerns with the existing levees. The existing levees are in the process of being reviewed by the Federal Emergency Management Agency for at least a 1% Annual Chance Exceedance (100-year) event so that they can maintain their FEMA accreditation.

b. Products to Undergo Type I IEPR. IEPR would occur on the Draft Feasibility Report and EIS. The IEPR comments and responses are presented and discussed at the Civil Works Review Board prior

to approval by HQUSACE for the 30-day state and agency review of the final report. The IEPR will be accomplished by an Outside Eligible Organization, as designated by the PCX. The purpose of this review is to ensure the proper application of clearly established criteria, regulations, laws, codes, principles, and professional practices of all project decision documents. The District Commander is recommending that the IEPR be conducted on the draft Feasibility Report/EIS.

c. Required Type I IEPR Panel Expertise. The expertise and disciplines represented on the IEPR Panel reflect the significant disciplines involved in the planning effort. The IEPR will consist of at least six team members in the following functional areas:

IEPR Panel Members/Disciplines	Expertise Required
Geotechnical Engineering	Two Geotechnical Engineering Panel Members will be provided. Each should be an Engineer from academia or a public agency whose primary mission is flood damage prevention, or an Architect-Engineer or Consulting Firm with a minimum 10 years demonstrated experience in geotechnical studies and design of flood control works, including channel modifications, with an MS degree or higher in Geotechnical Engineering. The two Panel Members should have the following expertise: • One Panel Member will have geotechnical engineering expertise in fluvial processes and geomorphology. • One Panel Member will have expertise in geotechnical risk analysis. The Geotechnical Engineering Panel Member's experience should be particularly in site investigation planning and implementation including modification of stream channels for flood risk management purposes and minimizing environmental impacts. The Geotechnical Risk Analysis Panel Member should have extensive experience in geotechnical risk analysis, specifically, the application of probabilistic methods to geotechnical aspects of levees. All Panel Members should be familiar with geotechnical practices used in Texas. The USACE also encourages active participation in related professional societies by panelists.
Economics	Up to two Economics Panel Members will be provided. The Economics Panel Member should be a scientist from academia, a public agency, or a non-governmental entity, or an Architect-Engineer or Consulting Firm with at least a Bachelors degree. Member must have at least ten years experience directly related to water resource economic evaluation or review, with an MS degree or higher in economics. At least five years experience directly working for or with USACE is highly recommended. Five years experience directly dealing with HEC-FDA is required, and the Panel Member must have two years experience in reviewing federal water resource economic documents that justify construction efforts. This discipline might require one or two individuals depending upon the availability of individuals with a comprehensive understanding of this discipline, including social well-being and regional economic development, in addition to traditional national economic development benefits.
Environmental	The NEPA Impact Assessment Panel Member should be a scientist from academia, a public agency, or a non-governmental entity, or an Architect-Engineer or Consulting Firm with a minimum 10 years demonstrated experience in evaluating and conducting

	NEPA impact assessments, including cumulative effects analyses for complex multi-objective public works projects with competing trade-offs. The Panel Member should have an MS degree or higher in an appropriate field of study. Experience should encompass determining the scope and appropriate methodologies for impact assessment and analyses for a variety of projects and programs with high public and interagency interests and project impacts to nearby sensitive habitats. Active participation in related professional societies is encouraged.
Hydrology & Hydraulic Engineering	The Hydrologic and Hydraulic Member should be a registered professional engineer with a minimum of 10 years experience in hydraulic engineering with an emphasis on large public works projects, or a professor from academia with extensive background in hydraulic theory and practice, with an MS degree or higher in engineering. Active participation in related professional societies is encouraged. The panel member should be familiar with USACE application of risk and uncertainty analyses in flood damage reduction studies. The panel member should also be familiar with standard USACE hydrologic and hydraulic computer models.

d. Documentation of Type I IEPR. The IEPR panel will be selected and managed by an Outside Eligible Organization (OEO) per EC 1165-2-209, Appendix D. Panel comments will be compiled by the OEO and should address the adequacy and acceptability of the economic, engineering and environmental methods, models, and analyses used. IEPR comments should generally include the same four key parts as described for ATR comments in Section 5.c above. The OEO will prepare a final Review Report that will accompany the publication of the final decision document and shall:

- Disclose the names of the reviewers, their organizational affiliations, and include a short paragraph on both the credentials and relevant experiences of each reviewer;
- Include the charge to the reviewers;
- Describe the nature of their review and their findings and conclusions; and
- Include a verbatim copy of each reviewer's comments (either with or without specific attributions), or represent the views of the group as a whole, including any disparate and dissenting views.

The final Review Report will be submitted by the OEO no later than 60 days following the close of the public comment period for the draft decision document. USACE shall consider all recommendations contained in the Review Report and prepare a written response for all recommendations adopted or not adopted. The final decision document will summarize the Review Report and USACE response. The Review Report and USACE response will be made available to the public, including through electronic means on the internet.

7. POLICY AND LEGAL COMPLIANCE REVIEW

All decision documents will be reviewed throughout the study process for their compliance with law and policy. Guidance for policy and legal compliance reviews is addressed in Appendix H, ER 1105-2-100. These reviews culminate in determinations that the recommendations in the reports and the supporting analyses and coordination comply with law and policy, and warrant approval or further recommendation to higher authority by the home MSC Commander. DQC and ATR augment and complement the policy review processes by addressing compliance with pertinent published Army policies, particularly policies on analytical methods and the presentation of findings in decision documents.

8. COST ENGINEERING DIRECTORY OF EXPERTISE (DX) REVIEW AND CERTIFICATION

All decision documents shall be coordinated with the Cost Engineering DX, located in the Walla Walla District. The DX will assist in determining the expertise needed on the ATR team and Type I IEPR team

(if required) and in the development of the review charge(s). The DX will also provide the Cost Engineering DX certification. The RMO is responsible for coordination with the Cost Engineering DX.

9. MODEL CERTIFICATION AND APPROVAL

EC 1105-2-412 mandates the use of certified or approved models for all planning activities to ensure the models are technically and theoretically sound, compliant with USACE policy, computationally accurate, and based on reasonable assumptions. Planning models, for the purposes of the EC, are defined as any models and analytical tools that planners use to define water resources management problems and opportunities, to formulate potential alternatives to address the problems and take advantage of the opportunities, to evaluate potential effects of alternatives and to support decision making. The use of a certified/approved planning model does not constitute technical review of the planning product. The selection and application of the model and the input and output data is still the responsibility of the users and is subject to DQC, ATR, and IEPR (if required).

EC 1105-2-412 does not cover engineering models used in planning. The responsible use of well-known and proven USACE developed and commercial engineering software will continue and the professional practice of documenting the application of the software and modeling results will be followed. As part of the USACE Scientific and Engineering Technology (SET) Initiative, many engineering models have been identified as preferred or acceptable for use on USACE studies and these models should be used whenever appropriate. The selection and application of the model and the input and output data is still the responsibility of the users and is subject to DQC, ATR, and IEPR (if required).

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

Model Name and Version	Brief Description of the Model and How It Will Be Applied in the Study	Certification / Approval Status
HEC-FDA 1.2.5 (Flood Damage Analysis)	The Hydrologic Engineering Center's Flood Damage Reduction Analysis (HEC-FDA) program provides the capability for integrated hydrologic engineering and economic analysis for formulating and evaluating flood risk management plans using risk-based analysis methods. The program will be used to evaluate and compare the future without- and with-project plans for the Dallas Floodway Feasibility Study to aid in the selection of a recommended plan to manage flood risk.	Certified
HEC-FIA 2.1	The Hydrologic Engineering Center's Flood Impact Analysis software (HEC-FIA) is a stand-alone application that provides state-of-the-art techniques to calculate post-flood or forecasted-flood impacts for a user-specified event. It is also used to determine flood damage reduction benefits attributed to individual flood-control projects (reservoirs, levees, and diversions) and for real-time response activities as part of the U.S. Army Corps of Engineers Water Management System. For the purposes of the Dallas Floodway study, HEC-FIA is being utilized for its loss of life computation to estimate consequences associated with potential failure modes along the Dallas Floodway levee system. The life loss computation in HEC-FIA is based on the LifeSim methodology developed at Utah State University, and includes consideration of many factors including initial distribution of population for day and night, redistribution of that population base on "dam" failure warning, evacuation potential, and sheltering opportunities.	(beta - Not Certified; Corporate certification underway led by the FRM-PCX)

The United States Fish and Wildlife Service (USFWS) Habitat Evaluation Procedure (HEP)	The USFWS HEP will be used to evaluate habitat conditions that would result from alternative plans. The USFWS HEP is not a model. The specific habitat suitability index (HSI) models must be certified/approved for use in accordance with EC 1105-2-412. A HSI for indicator species is derived by aggregating suitability indices (SIs) critical for habitat variables. These SIs are based on field measurements for existing conditions and on professional judgment for future conditions under alternative plans. The index ranges from 0.0 to 1.0, with 1.0 representing the highest habitat quality possible. A habitat unit (HU) is the product of the HSI multiplied by an area (in acres) of available habitat. HSIs and HUs were developed for different times during the period of analysis (at year 1, 15, 25, and 50), and HUs are annualized to estimate an average annual habitat unit (AAHU). Per CECW-CP Memorandum dated 13 August 2008, the following HSI models used for the project have been approved for use: Wood Duck, Eastern Cottontail Rabbit, Eastern Meadowlark, Barred owl, and Fox Squirrel. The District will continue to coordinate with the Ecosystem Planning Center of Expertise in USACE Mississippi Valley Division (ECO PCX) throughout the study process to assure that appropriate models and assumptions are used during the study.	Certification Required

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

Model Name and Version	Brief Description of the Model and How It Will Be Applied in the Study	Approval Status
HEC-RAS 4.0 (River Analysis System)	The Hydrologic Engineering Center's River Analysis System (HEC-RAS) program provides the capability to perform one-dimensional steady- and unsteady-flow river hydraulics calculations. The program will be used for steady-flow analysis to evaluate the future without- and with-project conditions in the Trinity River watershed.	HH&C CoP Preferred Model
HEC-HMS 2.2.2	The Hydrologic Engineering Center's Hydrologic Modeling System (HEC-HMS) simulates precipitation-runoff processes.	HH&C CoP Preferred Model

10. REVIEW SCHEDULES AND COSTS

a. ATR Schedule and Cost. ATR will be completed prior to submission of documentation to the vertical team for a decision. The following table shows preliminary cost estimates to conduct the ATR. ATR will be completed on the following documentation:

Product	Status	Date	Est. Cost
FSM – Complete Technical Appendices	Completed	23 Mar 12	N/A
FSM – Complete FSM Document	Completed	30 Mar 12	N/A
FSM – ATR Review	Completed	6 Apr 12	$60,000
FSM – HQ Review	Completed	24 Apr 12	N/A
Conduct Feasibility Scoping Meeting (FSM)	Completed	24 May 12	N/A
Provide Flood Risk Management Plan for ATR	Completed	27 Nov 12	$60,000

Provide Technical Portion of Comprehensive Analysis for ATR	Scheduled	22 Feb 13	$60,000
FHWA Decision on Trinity Parkway	Scheduled	15 Oct 13	N/A
Provide Draft Feasibility Report / EIS for ATR	Scheduled	22 May 13	$60,000
Conduct Alternate Formulation Briefing (AFB)	Scheduled	28 Feb 13	$60,000
Conduct Public Hearings	Scheduled	16 Oct 13	TBD
Provide Final Feasibility Report / EIS for ATR	Scheduled	13 Feb 14	$75,000
Sign Record of Decision (ROD)	Scheduled	1 Jul 14	N/A

b. Type I IEPR Schedule and Cost. IEPR will be completed concurrent to vertical team review for a decision. Type I IEPR is 100% Federal cost, but should be budgeted in the project budget. IEPR will be completed on the following documentation:

Product	Status	Date	Est. Cost
Draft Feasibility Report/EIS	Scheduled	Jun 2013	$250,000

The total cost of Type I IEPR is 100% Federal; the cost of any PCX support and PDT efforts related to the IEPR are cost shared. The cost of the Type I IEPR effort is limited to $500,000 unless the USACE Chief of Engineers determines a higher cost is appropriate per EC 1165-2-209, page 16, paragraph 17a.

c. Model Certification/Approval Schedule and Cost. The current models being used for planning are already approved for use or will be certified by the ECO PCX during the study process. In addition, the models should be reviewed during the ATR and IEPR process.

11. PUBLIC PARTICIPATION

The public will be able to comment on the feasibility study during the decision-making process. Several public meetings will be held throughout the study. After a tentatively selected plan is determined, a public meeting will be held to solicit public comment on the plan. Finally, a public meeting is normally held during the public review process of the draft feasibility report, which is generally held concurrent to the IEPR panel review.

The public will have an opportunity to review and provide comments on the Draft Feasibility Report/EIS for 45 days occurring approximately August 2013. The EIS will most likely begin after plan formulation is complete and prior to the AFB. In addition, the public can provide comments at anytime during the feasibility study process to the study's project manager at the following address:

U.S. Army Corps of Engineers, Fort Worth District
ATTN: Dallas Floodway Project Manager, CESWF-PM-C
P.O. Box 17300
Fort Worth, TX, 76102-0300

Comments and responses are documented by the date the comment was received, and provided as an attachment that follows the document from the first ATR through Washington D.C. level review of the final feasibility report. This includes comments from all ATRs and comments received from the public throughout the study process.

All published reports (Including this Review Plan) can be found at the Fort Worth District's website (www.swf.usace.army.mil) as well as directions for obtaining any information that may be disclosed under the Freedom of Information Act (Public Law 89-554, 80 Stat. 383; amended 1996, 2002, 2007).

12. REVIEW PLAN APPROVAL AND UPDATES

The Southwestern Division Commander is responsible for approving this Review Plan. The Commander's approval reflects vertical team input (involving district, MSC, RMO, and HQUSACE members) as to the appropriate scope and level of review for the decision document. Like the PMP, the Review Plan is a living document and may change as the study progresses. The home district is responsible for keeping the Review Plan up to date. Significant changes to the Review Plan (such as changes to the scope and/or level of review) should be re-approved by the MSC Commander following the process used for initially approving the plan. The latest version of the Review Plan, along with the Commanders' approval memorandum, should be posted on the Home District's webpage. The latest Review Plan should also be provided to the RMO and home MSC.

13. REVIEW PLAN POINTS OF CONTACT

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

U.S. Army Corps of Engineers, Fort Worth District
ATTN: Dallas Floodway Project Manager, CESWF-PM-C
P.O. Box 17300
Fort Worth, TX. 76102

U.S. Army Corps of Engineers, Southwestern Division
ATTN: Chief of Planning & Policy Division, CESWD-PDS-P
1100 Commerce St.
Dallas, TX. 75242

U.S. Army Corps of Engineers, South Pacific Division
ATTN: FRM-PCX Program Manager, CESPD-PDP
1455 Market St.
San Francisco, CA 94103

ATTACHMENT 1: TEAM ROSTERS

a. Fort Worth District

Discipline	PDT Member	Contact Information
Director, TRCP		
Program Management		
Project Management		
Plan Formulation		
H&H		
H&H		
Civil Design		
Civil Design		
Structural Design		
Structural Design		
Geotechnical		
Cost Estimating		
Cost Estimating		
Economics		
Economics		
Cultural		
Environmental		
Environmental		
Real Estate		
HTRW		
Contracting		
Operations		
Regulatory		
Office of Counsel		
GIS		
Mechanical		
Electrical		
Landscape Architect		

b. ATR Team

Discipline	PDT Member	Contact Information
Review Manager		
ATR Lead/H&H		
Plan Formulation		
Geotechnical		
Geotechnical		
Risk Analysis		
Civil Design		
Civil Design		
Structural Design		
Cost Estimating		
Cost Estimating		
Economics		
Cultural Resources		
Environmental		
Real Estate		
Real Estate		
HTRW		

c. Vertical Team

Discipline	PDT Member	Contact Information
SWD – Planning		
SWD – Planning		
SWD – Regional Integration Team		

d. IEPR Panel Members

Type I and II IEPR Panel Members for work described in this review plan will be defined at a later date.

ATTACHMENT 2: SAMPLE STATEMENT OF TECHNICAL REVIEW FOR DECSION DOCUMENTS

COMPLETION OF AGENCY TECHNICAL REVIEW

The Agency Technical Review (ATR) has been completed for the *<type of product>* for *<project name and location>*. The ATR was conducted as defined in the project's Review Plan to comply with the requirements of EC 1165-2-209. During the ATR, compliance with established policy principles and procedures, utilizing justified and valid assumptions, was verified. This included review of: assumptions, methods, procedures, and material used in analyses, alternatives evaluated, the appropriateness of data used and level obtained, and reasonableness of the results, including whether the product meets the customer's needs consistent with law and existing US Army Corps of Engineers policy. The ATR also assessed the District Quality Control (DQC) documentation and made the determination that the DQC activities employed appear to be appropriate and effective. All comments resulting from the ATR have been resolved and the comments have been closed in DrChecks[sm].

SIGNATURE _____ _____

Name Date
ATR Team Leader
Office Symbol/Company

SIGNATURE _____ _____

Name Date
Project Manager
Office Symbol

SIGNATURE _____ _____

Name Date
Architect Engineer Project Manager[1]
Company, location

SIGNATURE _____ _____

Name Date
Review Management Office Representative
Office Symbol

CERTIFICATION OF AGENCY TECHNICAL REVIEW

Significant concerns and the explanation of the resolution are as follows: *Describe the major technical concerns and their resolution.*

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

SIGNATURE _____ _____

Name Date
Chief, Engineering Division
Office Symbol

SIGNATURE _____ _____

Name Date
Chief, Planning Division
Office Symbol

[1] Only needed if some portion of the ATR was contracted

ATTACHMENT 3: REVIEW PLAN REVISIONS

Revision Date	Description of Change	Page / Paragraph Number

REVIEW PLAN

PART II

Design and Construction Phase
Trinity River Corridor Project
Dallas, Texas

Fort Worth District

MSC Approval Date: *12 December 2012*
Last Revision Date: *07 November 2007*

US Army Corps
of Engineers ®

REVIEW PLAN

Design and Construction Phase
Trinity River Corridor Project

TABLE OF CONTENTS

1. PURPOSE AND REQUIREMENTS

a. Purpose. This Review Plan forms Part II of a two part Comprehensive Review Plan for the Trinity River Corridor Project (TRCP) and defines the scope and level of peer review of U.S. Army Corps of Engineers (USACE) design and construction documents, and/or Section 408 reports prepared for projects within the boundaries of the TRCP in Dallas County, Texas. This plan includes the required Independent External Peer Review (IEPR) Type II or Safety Assurance Reviews (SAR) for projects in the design and construction phase. Part I of the Comprehensive Review Plan defines the scope of the products in the study phase. Because the TRCP has projects in various stages of planning, design and construction, a Comprehensive Review was prepared to ensure the Agency Technical Review (ATR) teams are shared between the feasibility level reviews and the design and construction reviews, and to avoid duplication of review effort and documentation. The specific design and construction products in this plan are:

- Dallas Floodway Extension (DFE). The DFE is currently in design and construction phase. The construction authority is Section 301, River and Harbor Act 1965, modified by Section 351 WRDA 1996 and Section 356 of WRDA 1999.
- Dallas Floodway Levee System 100-Year Improvements. The City of Dallas is completing the 100-year improvements at 100% non-Federal cost. If it is determined the 100-year improvements are integral to the USACE recommended plan presented in the Dallas Floodway Feasibility Study and integrated EIS, the 100-year improvements might be eligible for credit in future phases, with final approval culminating at the Assistant Secretary of the Army (Civil Works).
- Pavaho, Baker and Able Pump Stations. The City of Dallas's Interior Drainage Plan (IDP) contains improvements to the existing and construction of new pumping stations (including the Able, Baker, Charlie, Delta, Hampton, Trinity Portland, and Pavaho pump stations), to restore sump capacity to provide protection against the 1% Annual Chance Exceedance (100-year) Event outside the levee, and improve gravity and pressure storm sewers. The Pavaho, Baker and Able pump stations improvements are proposed for construction in advance of the final USACE report on the IDP. Eligibility of credit on these items may be determined in the feasibility report and Environmental Impact Statement (EIS) described in Part I.
- Irving Levee System 100-Year Improvements. The City of Irving is completing the 100-year improvements at 100% non-Federal cost. The City of Irving will seek approval under Section 408 for the activities required to restore the 100-year level of protection for the Irving Levee System.

b. References

(1) Change 1, 31 Jan 2012 to Engineering Circular (EC) 1165-2-209, Civil Works Review Policy, 31 Jan 2010
(2) EC 1105-2-412, Assuring Quality of Planning Models, 31 Mar 2011
(3) Engineering Regulation (ER) 1110-1-12, Quality Management, 30 Sep 2006
(4) ER 1105-2-100, Planning Guidance Notebook, Appendix H, Policy Compliance Review and Approval of Decision Documents, Amendment #1, 20 Nov 2007
(5) Project Management Plan for the Dallas Floodway Feasibility Study, May 5, 2010
(6) District Quality Management Plan
(7) Dallas Floodway FCSA, May 5, 2010
(8) Implementation Guidance for Section 5141 of WRDA 2007 – Dallas Floodway, Dallas, TX 01 Dec 09
(9) ER 1165-2-119, Modifications to Completed Projects, 20 Sep 1982
(10) CECW-PB Memorandum, 17 Nov 2008, Clarification Guidance on the Policy and Procedural Guidance for the Approval of Modifications and Alternations of Corps of Engineers Projects
(11) Army Regulation 15-1, Committee Management, 27 Nov 1992, Federal Advisory Committee Act Requirements
(12) National Academy of Sciences, Background Information and Confidential Conflict of Interest Disclosure, BI/COI Form 3, May 2003

(13) CECW-CP Memorandum dated 8 February 2012, subject: U.S. Army Corps of Engineers Civil Works Feasibility Study Program Execution and Delivery

c. Requirements. This review plan was developed in accordance with EC 1165-2-209, which establishes an accountable, comprehensive, life-cycle review strategy for Civil Works products by providing a seamless process for review of all Civil Works projects from initial planning through design, construction, and operation, maintenance, repair, replacement and rehabilitation (OMRR&R). This Review Plan outlines two general levels of review: Agency Technical Review (ATR), Independent External Peer Review (IEPR) – Type II.

2. REVIEW MANAGEMENT ORGANIZATION (RMO) COORDINATION

The RMO is responsible for managing the overall peer review effort described in this Review Plan. The RMO for project in the design and construction phase is typically either the Risk Management Center (RMC) or the Major Subordinate Command (MSC). The RMO for the peer review effort described in this Review Plan is the Southwestern Division (SWD) MSC.

The RMO will coordinate with the review team leads to ensure the appropriate expertise is included on the review teams to assess the adequacy of design and construction products. The Risk Management Center (RMC) will be coordinated with regarding issues of life safety. The RMC will also be responsible for any Type II IEPR (Safety Assurance Review) conducted during project implementation.

3. PROJECT INFORMATION

a. Review Documents. The major products that will undergo review are the plans and specifications, Design Documentation Reports and engineering studies associated with the design and construction documents for the projects described in this section.

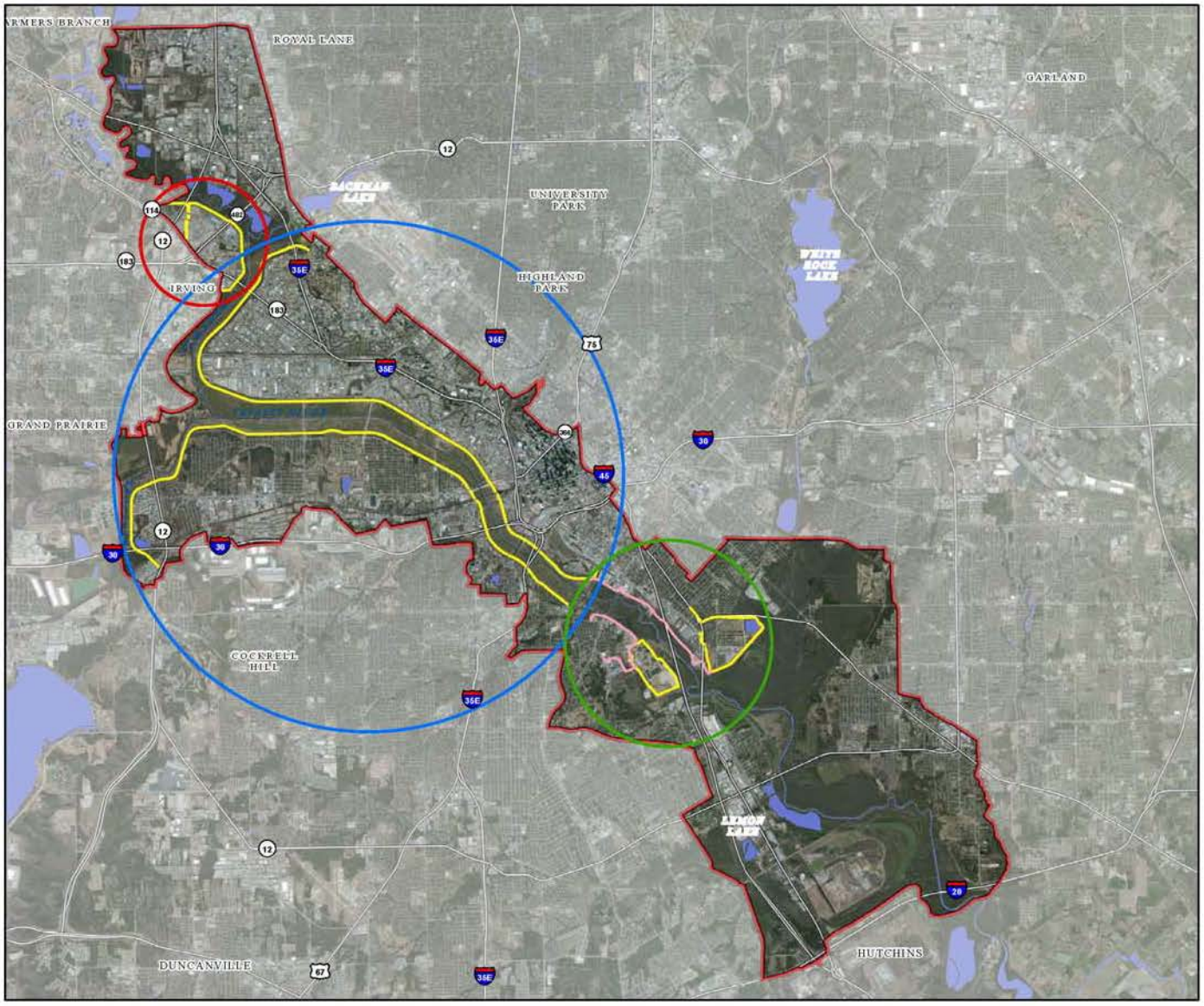
b. Project Description. The TRCP encompasses a 20-mile stretch of the Trinity River through the City of Dallas shown in Figure 1. Dallas Floodway Levee System 100-Year Improvements, Pavaho, Baker and Able Pump Stations are projects located along the East and West Levee. The Irving Levee is located upstream and across the Elm Fork of the Trinity River from the upper end of the East Levee of the Dallas Floodway Levee System. The Irving Levee is hydraulically connected and share geomorphic and geologic features with Dallas Levees and is included in the Review Plan to ensure a system wide perspective.

Dallas Floodway Extension

The authority for the Dallas Floodway Extension construction is Section 301, River and Harbor Act 1965, modified by Section 351 WRDA 1996 and Section 356 of WRDA 1999. The Dallas Floodway Extension Project consists of the existing Rochester Levee, the existing Central Wastewater Treatment Plant (CWWTP) Levee, the proposed Lamar Levee, the proposed Cadillac Heights Levee, the proposed Upper Chain of Wetlands, and the existing Lower Chain of Wetlands. The DFE project is federally authorized and non-federally operated and maintained. This work will progress as appropriated funding becomes available.

Dallas Floodway Levee System 100-year Improvements

In March 2009, the USACE – Fort Worth District issued Periodic Inspection Report No. 9, performed in December 2007, for the Dallas Floodway Levee System, to the City of Dallas. The inspection concluded that there were deficiencies with the Dallas Floodway Levee System. As a result, an unacceptable rating for the Dallas Floodway Levee System was issued by the Fort Worth District, Corps of Engineers. The unacceptable rating from Periodic Inspection No. 9 caused the Fort Worth District to retract its 2006 recommendation for 100-year levee certification with the Federal Emergency Management Agency (FEMA). As a result, substantial effort has been made to determine the existing condition of the levees and the City of Dallas has developed plans which include bringing the levees back to at least a 1% Annual Chance Exceedance (100-year) Event so that they can keep



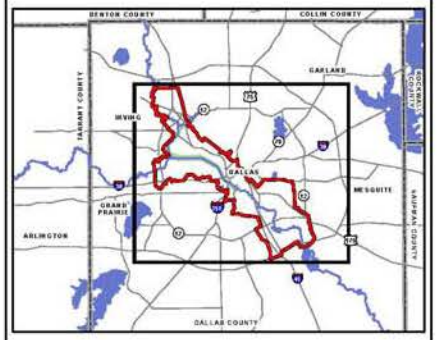
TRINITY RIVER CORRIDOR PROJECT AREA

LEGEND

- FREEWAYS
- SURFACE WATER
- TRINITY RIVER CORRIDOR STUDY AREA

TRINITY RIVER CORRIDOR PROJECT AREAS

- IRVING LEVEE
- DALLAS FLOODWAY
- DALLAS FLOODWAY EXTENSION
- FUTURE LEVEES
- EXISTING LEVEES



0 2 4 Kilometers

0 2 4 Miles

Sources: City of Dallas 2008a, 2010a; NCTCOG 2008; TxDOT 2010

their FEMA accreditation. The Dallas Floodway Levee System 100-year improvements include proposals within the East and West Levee in the Dallas Floodway Project area and the Rochester and Central Wastewater Treatment Plant Levees in the DFE Project area.

Pavaho, Baker and Able Pump Stations

The City of Dallas's IDP contains improvements to the existing and construction of new pumping stations (including the Able, Baker, Charlie, Delta, Hampton, Trinity Portland, and Pavaho pump stations), to restore sump capacity to provide protection against the 1% Annual Chance Exceedance (100-year) Event outside the levee, and improve gravity and pressure storm sewers. These features are defined in the reports prepared by the City of Dallas for the East Levee (Phase I) and the West Levee (Phase II). Section 5141 of WRDA 2007 authorizes USACE to review the Interior Levee Drainage Study Phase-I report, dated September 2006 and to work with the City of Dallas to construct the project provided USACE determines it is "technically sound" and "environmentally acceptable." The authorization does not currently provide for the City of Dallas's Interior Drainage Study Phase II Report for the West Levee (Charlie, Pavaho, and Delta) to be part of the authorized WRDA Project. The Pavaho, Baker and Able pump stations improvements are proposed for construction in advance of the final USACE report on the IDP. Eligibility of credit on these items may be determined in the feasibility report and EIS described in Part I.

Irving Levee System 100-year Improvements

The Irving Flood Control District (IFCD) No. 1 Levee (also known as the Northwest Levee or Irving Levee) is part of the original Dallas Floodway Levee System and is included in the USACE Dallas Floodway Operation and Maintenance Manual dated 1960. The levee is located in Irving on the south bank of the Elm Fork, north of the West Fork/Elm Fork confluence, and is operated and maintained by the City of Irving. The existing levee is about 14,400 feet long and is crossed by three major roadways; SH 183, Loop 12, and Spur 482. The levee presently protects large commercial developments.

A study will be conducted by the City of Irving on the Northwest Levee System in Irving, Texas, and is intended to 1) Supplement the prior investigations performed within the floodway that is operated by IFCD, 2) Analyze the current condition of the levee system based upon USACE criteria, and 3) Provide remedial geotechnical recommendations to insure that the IFCD levee system is able to withstand a 100 year flood event and is compliant with the current Federal Emergency Management Agency (FEMA) regulations. The major projects that undergo review will be on the plans and specifications, Design Documentation Reports and engineering studies associated with the design and construction documents for the modifications to the Northwest Levee.

c. Factors Affecting the Scope and Level of Review. The projects considered in this review plan trigger requirements for Agency Technical Review (ATR), and Type II IEPR in accordance with EC 1165-2-209.

4. AGENCY TECHNICAL REVIEW (ATR)

The objective of ATR is to ensure consistency with established criteria, guidance, procedures, and policy. The ATR will assess whether the analyses presented are technically correct and comply with published USACE guidance, and that the document explains the analyses and results in a reasonably clear manner. ATR is managed within USACE by the designated RMO and is conducted by a qualified team from outside the home district that is not involved in the day-to-day production of the project/product. ATR teams will be comprised of senior USACE personnel and may be supplemented by outside experts as appropriate. The ATR team lead will be from outside the home MSC.

The SWD MSC shall be the designated RMO for the ATR effort to coordinate the reviews with USACE Communities of Practice, relevant Centers of Expertise, and other offices to ensure that a review team with appropriate expertise is assembled and a cohesive and comprehensive review is accomplished.

The ATR team Leader will be from the USACE Northwestern Division (NWD) and shall provide reviewers with sufficient information, including background information about the project, to enable them to understand the data, analytic procedures, and assumptions. Reviewers shall be informed of applicable access, objectivity, reproducibility and other quality standards under the federal laws governing information access and quality. Attachment I lists the current ATR review team members.

All documents submitted by the non-Federal sponsor for consideration under 33 U.S.C. 408 will require an ATR. The ATR may be accomplished by the home district (Fort Worth District) in which the proposed alteration/modification is under consideration. Vertical team coordination is required to assure technical requirements are met throughout the review process.

a. Products to Undergo ATR. Technical products developed will be considered for incremental product review by the ATR team or selected team members such as H&H, geotechnical, economic, and environmental analysis as those products are developed.

For the DFE project, ATR will be completed on the following plans and specifications and Design Documentation Reports:

- Rochester Park Levee, Phase I
- Rochester Park Levee, Phase II
- Lamar Street Levee
- Upper Chain of Wetlands
- Cadillac Heights Levee
- Dallas Floodway Levee System 100-year Improvements 408
- East Levee Design (100-year Improvements)
- West Levee Design (100-year Improvements)
- Rochester Design (100-year Improvements)
- Central Wastewater Treatment Plant Design (100-year Improvements)
- Pavaho Design
- Baker Design
- Able Design
- Irving Levee System 100-year Improvements 408
- Irving Levee Design

b. Required ATR Team Expertise. The expertise and disciplines represented on the ATR team reflect the significant disciplines involved in the design and construction effort.

ATR Team Members/Disciplines	Expertise Required
ATR Lead	The ATR lead should be a senior professional with extensive experience in Civil Works project implementation. The lead should also have the necessary skills and experience to lead a virtual team through the ATR process. The ATR lead may also serve as a reviewer for a specific discipline (such as planning, economics, environmental resources, etc).
Environmental Resources	Team member should be an environmental subject matter expert and be familiar with preparing, processing, and reviewing environmental impact statements.
Hydrology & Hydraulic Engineering	Team member should be an H&H subject matter expert, demonstrate experience in the field of urban hydrology and hydraulics, and have a thorough understanding of levee systems, the effects of management practices, high impact of urban development on hydrology, the use of levees and floodwalls within the space constraints of an urban environment, the use of non-structural systems as they apply to flood proofing, warning systems, and evacuation, and the use of HEC computer modeling systems. The individual should be a certified professional engineer (PE).
Risk Analysis	The risk analysis reviewer will be experienced with performing and presenting risk analyses in accordance with ER 1105-2-101 and other related guidance, including familiarity with how information from the various disciplines involved in the analysis interact and affect the results.
Geotechnical Engineering	Team member should be a geotechnical subject matter expert and should have extensive experience in levee and floodwall design, pre- and post-construction evaluation, and rehabilitation. The individual should be a certified PE.
Civil Engineering	Team member should be a civil design subject matter expert and have experience with levee design, utility relocations, positive closure requirements, and interior drainage requirements. The individual should be a certified PE.
Structural Engineering	Team member should have a thorough understanding of structural measures to include, but not be limited to, retaining walls, pump stations, gate structures, bridges and culverts, utility penetrations, and stoplog and sandbag gaps. The individual should be a certified PE.
Real Estate	Team member should have experience developing real estate plans for multi-objective USACE Civil Works projects. Such projects would include acquisition of multiple interests and estates, planning for issues related to contaminated sites, significant utility and facility relocations, relocations of residential owners and businesses, and modifications to existing Federal projects.
Hazardous, Toxic and Radioactive Waste (HTRW)	Team members should be familiar with similar USACE Civil Works projects.

Legal review is the responsibility of the USACE, Office of Counsel and is not under the purview of the ATR team.

c. Documentation of ATR. DrChecks review software will be used to document all ATR comments, responses and associated resolutions accomplished throughout the review process. Comments should be limited to those that are required to ensure adequacy of the product. The four key parts of a quality review comment will normally include:

(1) The review concern – identify the product's information deficiency or incorrect application of policy, guidance, or procedures;
(2) The basis for the concern – cite the appropriate law, policy, guidance, or procedure that has not be properly followed;
(3) The significance of the concern – indicate the importance of the concern with regard to its potential impact on the plan selection, recommended plan components, efficiency (cost), effectiveness (function/outputs), implementation responsibilities, safety, Federal interest, or public acceptability; and
(4) The probable specific action needed to resolve the concern – identify the action(s) that the reporting officers must take to resolve the concern.

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

The ATR documentation in DrChecks will include the text of each ATR concern, the PDT response, a brief summary of the pertinent points in any discussion, including any vertical team coordination (the vertical team includes the district, RMO, MSC, and HQUSACE), and the agreed upon resolution. If an ATR concern cannot be satisfactorily resolved between the ATR team and the PDT, it will be elevated to the vertical team for further resolution, as appropriate. Unresolved concerns can be closed in DrChecks with a notation that the concern has been elevated to the vertical team for resolution.

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

- Identify the document(s) reviewed and the purpose of the review;
- Disclose the names of the reviewers, their organizational affiliations, and include a short paragraph on both the credentials and relevant experiences of each reviewer;
- Include the charge to the reviewers;
- Describe the nature of their review and their findings and conclusions;
- Identify and summarize each unresolved issue (if any); and
- Include a verbatim copy of each reviewer's comments (either with or without specific attributions), or represent the views of the group as a whole, including any disparate and dissenting views.

ATR may be certified when all ATR concerns are either resolved or referred to the vertical team for resolution and the ATR documentation is complete. The ATR Lead will prepare a Statement of Technical Review certifying that the issues raised by the ATR team have been resolved (or elevated to the vertical team). A sample Statement of Technical Review is included in Attachment 2.

5. INDEPENDENT EXTERNAL PEER REVIEW (Type II IEPR/Safety Assurance 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. A risk-informed decision, as described in EC 1165-2-209, is made as to whether IEPR is appropriate. IEPR panels will consist of independent, recognized experts from outside of the USACE in the appropriate disciplines, representing a balance of areas of expertise suitable for the review being conducted.

Type II IEPR applies to some of the design and construction documents covered in this Review Plan. Type II IEPR, or Safety Assurance Review (SAR), are managed outside the USACE and are conducted on design and construction activities for hurricane, storm, and flood risk management projects or other projects where existing and potential hazards pose a significant threat to human life. Type II IEPR panels will conduct reviews of the design and construction activities prior to initiation of physical construction and, until construction activities are completed, periodically thereafter on a regular schedule. The reviews shall consider the adequacy, appropriateness, and acceptability of the design and construction activities

in assuring public health safety and welfare. Documents submitted by a non-Federal entity for consideration under 33 U.S.C. 408 must undergo a Type II IEPR prior to submission of the request for approval to HQUSACE.

a. Decision on IEPR. Type II IEPR, Safety Assurance Review (SAR), will be required for the Dallas Floodway Extension Project and the Dallas Floodway for the selected design products indicated in paragraph b of this section. The non-performance of these selected flood risk management features would result in significant impacts to project economics, the environment, and the potential for life loss. This alone triggers the need for an IEPR. The Upper Chain of Wetlands (UCOW) will not be subject to Type II IEPR as there is no potential for life loss due to structural failure. The existing Dallas Floodway levees have been de-accredited by the Federal Emergency Management Agency (FEMA), pending corrective measures by the City of Dallas. The City of Dallas is implementing corrective measures and will have the levees "re-certified" by their contracted Architect/Engineer (A/E) firm when all work to satisfy requirements have been completed. The City of Dallas will be responsible for all Type II IEPR for modifications submitted under 33 U.S.C 408 and USACE will be responsible for Type II IEPR for all other features that are implemented as part of the federal project.

Type II IEPR was required for the Dallas Floodway Levee System 100-year Improvements. The non-performance of a flood risk management feature would result in significant impacts to the environment, and the potential for loss of life. The City of Dallas has retained A/E services to provide Type II IEPR (SAR) for all projects required under 33 U.S.C. 408. The Pavaho, and Baker Pump Station Projects as well as the 100-year Improvements have completed a Type II IEPR. The review was conducted by the City of Dallas under separate approved review plans.

b. Products to Undergo Type II IEPR. The IEPR team shall perform reviews (and a site visit, if necessary) at the completion of the plans, specifications for the products listed below and at the midpoint of construction.

- Rochester Park Levee, Phase I
- Rochester Park Levee, Phase II
- Lamar Street Levee
- Cadillac Heights Levee
- Dallas Floodway Levee System 100-year Improvements 408 - Completed
- East Levee Design (100-year Improvements)
- West Levee Design (100-year Improvements)
- Rochester Design (100-year Improvements)
- Central Wastewater Treatment Plant Design (100-year Improvements)

c. Required Type II IEPR Panel Expertise. A Type II IEPR (Safety Assurance Review) will be performed by an A/E firm, using a USACE Indefinite Delivery Indefinite Quantity (IDIQ) Contract administered by the Risk Management Center (RMC). The A/E firm will provide the USACE with the final independent external expert reviewer list, including their credentials. Expert reviewers shall have experience in design and construction of projects similar in scope to the projects. Expert reviewers shall be registered as professional engineers (or other appropriate registration) in the United States, or similarly credentialed in their home country. The expert reviewers must have a degree in their discipline. The Type II IEPR panel expertise differs between DFE and the Dallas Floodway Levee System 100-year Improvements as indicated in the tables below.

Dallas Floodway Extension	
IEPR Panel Members/Disciplines	**Expertise Required**
Geotechnical Engineer	Geotechnical Engineer will be a recognized expert in the field of geotechnical engineering analysis, design and construction of levees with extensive experience in subsurface investigations, soil mechanics, seepage and slope stability evaluations, erosion protection design, and construction and earthwork construction.
Civil Engineer	A Civil Engineer with extensive experience in the design, layout, and construction of flood control structures shall be required. The Civil Engineer must demonstrate knowledge regarding levees, interior drainage facilities, earthwork, concrete placement, design of access roads, and relocation of underground utilities. The Civil Engineer must be familiar with USACE regulations and building codes.
Engineering Geologist	Engineering Geologist shall be a senior-level person with extensive experience in the type of work being performed. The Engineering Geologist shall be proficient in assessing seepage, exploration and testing, grouting, and instrumentation. The Engineering Geologist shall be experienced in the design of cutoff walls and must be knowledgeable in designs and materials for cutoff walls. The Engineering Geologist shall have a working knowledge of all applicable USACE design criteria.
Hydraulic Engineer	A Hydraulic Engineer with extensive experience in the analysis and design of levees shall be required. The Hydraulic Engineer must have performed work in hydrologic analysis and design of hydraulic structures.
Hazardous, Toxic and Radioactive Waste Expert	Hazardous, Toxic, and Radioactive Waste (HTRW) expert with extensive experience in the technical requirements and assessment of risk associated with construction projects located in contaminated areas and reuse of contaminated soil. The HTRW expert shall have extensive knowledge of Federal and the State of Texas laws and regulations related to air, soil, and groundwater contamination. The expert shall have a working knowledge of all applicable USACE HTRW regulations and policies.

Dallas Floodway Levee System 100-year Improvements	
IEPR Panel Members/Disciplines	**Expertise Required**
Geotechnical Engineer	A Geotechnical Engineer will be a recognized expert in the field of geotechnical engineering analysis, design and construction of levees with extensive experience in subsurface investigations, soil mechanics, seepage and slope stability evaluations, erosion protection design, and construction and earthwork construction.
Civil or Geotechnical Engineer	A Civil or Geotechnical Engineer with extensive experience in the design, layout, and construction of flood control structures shall be required. The Construction Management Engineer must demonstrate knowledge regarding levees, interior drainage facilities, earthwork, concrete placement, design of access roads, and relocation of underground utilities. The Civil Engineer must be familiar with USACE regulations and building codes.
Hydraulic Engineer	A Hydraulic Engineer with extensive experience in the analysis and design of levees shall be required. The Hydraulic Engineer must have performed work in hydrologic analysis and design of hydraulic structures.

USACE may only disapprove a selected panel member if the member does not meet the objective criteria established in this Review Plan. When selecting panel members, the National Academy of Sciences' policy for committee selection with respect to evaluating the potential for conflicts (e.g., those arising from investments; agency, employer, and business affiliations; grants, contracts and consulting income) shall be adopted or adapted. External peer reviewers shall not have participated in development of the submittal to be reviewed. External peer reviewers will be paid labor and any necessary travel and per diem expenses in accordance with their contract.

External peer reviewers will be advised whether information about them (name, credentials, and affiliation) will be disclosed. Reviewers shall be notified in advance regarding the extent of disclosure and attribution planned by USACE. Review shall be conducted in a manner that respects confidential business information and intellectual property.

d. Documentation of Type II IEPR. The Risk Management Center located in Denver Colorado will be the Review Management Organization (RMO). Reviewers shall be charged with reviewing scientific and technical matters, leaving policy determinations for the City of Dallas and USACE. IEPR comments should generally include the same four key parts as described for ATR comments in Section 4.c above.

The charge should be determined in advance of the selection of the reviewers. The RMO shall provide reviewers with sufficient information, including background information about the project, to enable them to understand the data, analytic procedures, and assumptions. Reviewers shall be informed of applicable access, objectivity, reproducibility and other quality standards under the federal laws governing information access and quality. Information distributed for review must include the following disclaimer: "This information is distributed solely for the purpose of pre-dissemination review under applicable information quality guidelines. It has not been formally disseminated by the Cities of Dallas and Irving or USACE. It does not represent and should not be construed to represent any agency determination or policy."

The review panel will prepare a Review Report. All review panel comments shall be entered as team comments that represent the group and be non- attributable to individuals. A team lead will be established for the panel. All comments in the report will be finalized by the panel prior to their release to the City of Dallas and/or USACE for each review. The final Review Report shall:

- Disclose the names of the reviewers, their organizational affiliations, and include a short paragraph on both the credentials and relevant experiences of each reviewer;
- Include the charge to the reviewers;
- Describe the nature of their review and their findings and conclusions; and
- Include a verbatim copy of each reviewer's comments (either with or without specific attributions), or represent the views of the group as a whole, including any disparate and dissenting views.

Written responses to the IEPR Review Report will be prepared to explain the agreement or disagreement with the views expressed in the report, the actions undertaken or to be undertaken in response to the report, and the reasons those actions are believed to satisfy the key concerns stated in the report (if applicable). Responses to the Type II IEPR comments shall be submitted to the District Commander for Approval. After the District Commander’s approval, the District will make the review documents available to the public on the District’s website.

6. REVIEW SCHEDULE AND COST

a. ATR Schedule and Cost. ATR will be completed on the following plans and specifications and Design Documentation Reports. Technical products developed in preparation of these products will be considered for incremental product review by the ATR team or selected team members as those products are developed.

Dallas Floodway Extension - ATR			
Product	**Status**	**Date**	**Est. Cost**
Rochester Park Levee, Phase I	Scheduled	TBD	$100,000
Rochester Park Levee, Phase II	Scheduled	TBD	$100,000
Lamar Street Levee	Scheduled	TBD	$100,000
Upper Chain of Wetlands	Scheduled	TBD	$100,000
Cadillac Heights Levee	Scheduled	TBD	$100,000
Central Wastewater Treatment Plant	Scheduled	TBD	$100,000

Dallas Floodway Levee System 100-year Improvements - ATR			
Product	**Status**	**Date**	**Est. Cost**
Dallas Floodway Levee System 100-year Improvements 408	Completed	Oct 2011	$100,000
East Levee Design (100-year)	Scheduled	TBD	$100,000
West Levee Design (100-year)	Scheduled	TBD	$100,000
Rochester Design (100-year)	Scheduled	TBD	$100,000
Central Wastewater Treatment Plant (100-year)	Scheduled	TBD	$50,000

Pavaho, Baker and Able Pump Stations - ATR			
Product	**Status**	**Date**	**Est. Cost**
Pavaho Pump Station Design	Completed	Jul 2010	$50,000
Baker Pump Station Design	Completed	Feb 2012	$50,000
Able Pump Station Design	Scheduled	TBD	$50,000

Irving Levee System 100-year Improvements - ATR			
Product	**Status**	**Date**	**Est. Cost**
Irving Levee System 100-year Improvements 408	Ongoing	Dec 2012	$25,000
Irving (Northwest) Levee Design	Scheduled	TBD	$50,000

b. Type II IEPR Schedule and Cost. EC 1165-2-209 estimates that the cost of the Type II IEPR will range between .10 to 1.50 percent of the total project cost. Funding for IEPR will be requested as a part of the normal budget development process. The Type II IEPR reviews will cost approximately $200,000 each. A Type II IEPR will be conducted on the 95% Plans and Specifications and associated Design Documentation Report, and at the mid-point of construction of the following products. These reviews are expected to take place in the year 2014 to 2015 timeframe.

Dallas Floodway Extension – Type II IEPR			
Product	**Status**	**Date**	**Est. Cost**
Rochester Park Levee, Phase I	Scheduled	TBD	$50,000
Rochester Park Levee, Phase II	Scheduled	TBD	$50,000
Lamar Street Levee	Scheduled	TBD	$50,000
Cadillac Heights Levee	Scheduled	TBD	$50,000
Central Wastewater Treatment Plant	Scheduled	TBD	$50,000

Dallas Floodway Levee System 100-year Improvements – Type II IEPR			
Product	**Status**	**Date**	**Est. Cost**
Dallas Floodway Levee System 100-year Improvements 408	Completed	Oct 2012	$50,000
East Levee Design (100-year)	Scheduled	TBD	$50,000
West Levee Design (100-year)	Scheduled	TBD	$50,000
Rochester Design (100-year)	Scheduled	TBD	$50,000
Central Wastewater Treatment Plant (100-year)	Scheduled	TBD	$50,000

Pavaho, Baker and Able Pump Stations – Type II IEPR			
Product	**Status**	**Date**	**Est. Cost**
Pavaho Pump Station Design	Completed	Aug 2010	$50,000
Baker Pump Station Design	Completed	May 2011	$50,000
Able Pump Station Design	Scheduled	TBD	$50,000

7. PUBLIC PARTICIPATION

All published reports (including this Review Plan) can be found at the Fort Worth District's website (www.swf.usace.army.mil) as well as directions for obtaining any information that may be disclosed under the Freedom of Information Act (Public Law 89-554, 80 Stat. 383; amended 1996, 2002, 2007).

8. REVIEW PLAN APPROVAL AND UPDATES

The Southwestern Division Commander is responsible for approving this Review Plan. The Commander's approval reflects vertical team input (involving district, MSC, RMO, and HQUSACE members) as to the appropriate scope and level of review for the decision document. Like the PMP, the Review Plan is a living document and may change as the study progresses. The home district is responsible for keeping the Review Plan up to date. Significant changes to the Review Plan (such as changes to the scope and/or level of review) should be re-approved by the MSC Commander following the process used for initially approving the plan. The latest version of the Review Plan, along with the Commanders' approval memorandum, should be posted on the Home District's webpage. The latest Review Plan should also be provided to the RMO and home MSC.

9. REVIEW PLAN POINTS OF CONTACT

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

U.S. Army Corps of Engineers, Fort Worth District
ATTN: Dallas Floodway Project Manager, CESWF-PM-C
P.O. Box 17300
Fort Worth, TX 76102

U.S. Army Corps of Engineers, Southwestern Division
ATTN: Chief of Planning & Policy Division, CESWD-PDS-P
1100 Commerce St.
Dallas, TX 75242

ATTACHMENT 1: TEAM ROSTERS

a. Fort Worth District

Discipline	PDT Member	Contact Information
Director, TRCP		
Project Management		
Plan Formulation		
H&H		
H&H		
Civil Design		
Civil Design		
Structural Design		
Structural Design		
Geotechnical		
Cost Estimating		
Cost Estimating		
Economics		
Economics		
Cultural		
Environmental		
Environmental		
Real Estate		
HTRW		
Contracting		
Operations		
Regulatory		
Office of Counsel		
GIS		
Mechanical		
Electrical		
Landscape Architect		

b. ATR Team

Discipline	ATR Member	Contact Information
Review Manager		
ATR Lead/H&H		
Plan Formulation		
Geotechnical		
Geotechnical		
Risk Analysis		
Civil Design		
Civil Design		
Structural Design		
Cost Estimating		
Cost Estimating		
Economics		
Cultural Resources		
Environmental		
Real Estate		
Real Estate		
HTRW		

c. Vertical Team

Discipline	Member	Contact Information
SWD – E&C		
SWD – E&C		
HQSWD – Regional Integration Team		

d. IEPR Panel Members

Type II IEPR Panel Members for work described in this review plan conducted by USACE will be defined at a later date. The feasibility study must be completed and approved sometime in 2014 before any Type II activities are required.

ATTACHMENT 2: SAMPLE STATEMENT OF TECHNICAL REVIEW FOR DECSION DOCUMENTS

COMPLETION OF AGENCY TECHNICAL REVIEW

The Agency Technical Review (ATR) has been completed for the *<type of product>* for *<project name and location>*. The ATR was conducted as defined in the project's Review Plan to comply with the requirements of EC 1165-2-209. During the ATR, compliance with established policy principles and procedures, utilizing justified and valid assumptions, was verified. This included review of: assumptions, methods, procedures, and material used in analyses, alternatives evaluated, the appropriateness of data used and level obtained, and reasonableness of the results, including whether the product meets the customer's needs consistent with law and existing US Army Corps of Engineers policy. The ATR also assessed the District Quality Control (DQC) documentation and made the determination that the DQC activities employed appear to be appropriate and effective. All comments resulting from the ATR have been resolved and the comments have been closed in DrChecks[sm].

SIGNATURE _____ _____

Name Date
ATR Team Leader
Office Symbol/Company

SIGNATURE _____ _____

Name Date
Project Manager
Office Symbol

SIGNATURE _____ _____

Name Date
Architect Engineer Project Manager[1]
Company, location

SIGNATURE _____ _____

Name Date
Review Management Office Representative
Office Symbol

CERTIFICATION OF AGENCY TECHNICAL REVIEW

Significant concerns and the explanation of the resolution are as follows: *Describe the major technical concerns and their resolution.*

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

SIGNATURE _____ _____

Name Date
Chief, Engineering Division
Office Symbol

SIGNATURE _____ _____

Name Date
Chief, Planning Division
Office Symbol

[1] Only needed if some portion of the ATR was contracted

ATTACHMENT 3: REVIEW PLAN REVISIONS

Revision Date	Description of Change	Page / Paragraph Number