



REPLY TO
ATTENTION OF

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

CESWD-PDP

07 DEC 2012

MEMORANDUM FOR Commander, Forth Worth District

SUBJECT: Westside Creek Ecosystem Restoration General Reevaluation Report and Integrated Environmental Assessment, Forth Worth District, Review Plan Approval

1. References:

a. EC 1165-2-209, Civil Works Review Policy, 31 January 2010; and Change 1, 31 January 2012.

b. Memorandum, CEMVD-PD-N, 26 October 2012, Westside Creek Ecosystem Restoration General Reevaluation Report, Fort Worth District, Ecosystem Planning Center of Expertise Recommendation for Review Plan Approval (Encl 1).


2. In accordance with reference 1.a., I hereby approve the enclosed Review Plan (RP) for the subject project study.

3. The RP has been prepared in accordance with the referenced guidance and has been reviewed and cleared for approval by the Ecosystem Restoration Center of Expertise (ECO-PCX) and the Flood Risk Management Center of Expertise (FRM-PCX).

4. Please post the final approved RP with a copy of this memorandum to the District's public internet website and provide the internet address to the ECO-PCX, FRM-PCX and Southwestern Division. Before posting to the District website, the names of USACE employees should be removed.

5. The SWD point of contact for this action is Mr. Ken Conley, CESWD-PDP, at 469-487-7104.

2 Encls
as


THOMAS W. KULA
Brigadier General, USA
Commanding

REVIEW PLAN

San Antonio Channel, San Antonio, Texas
Westside Creeks Ecosystem Restoration
General Reevaluation Report
and
Integrated Environmental Assessment

Fort Worth District

MSC Approval Date: 7 Dec 2012
Last Revision Date: None



US Army Corps
of Engineers ®

REVIEW PLAN

San Antonio Channel, San Antonio, Texas
Westside Creeks Ecosystem Restoration
General Reevaluation Report
and
Integrated Environmental Assessment

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1. PURPOSE AND REQUIREMENTS

a. Purpose. This Review Plan defines the scope and level of peer review of the U.S. Army Corps of Engineers (USACE) General Reevaluation Report (GRR) and Integrated Environmental Assessment (EA) for the Westside Creeks Ecosystem Restoration study in San Antonio, Texas conducted under the San Antonio Channel, San Antonio, Texas, authorization commonly referred to as the San Antonio Channel Improvement Project (SACIP).

b. References

- (1) 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) Southwestern Division Directorate of Civil Works and Business Management, Planning and Policy Division, Quality Assurance Plan, 3 March 2003
- (6) Memorandum Civil Works Program – Pilot Study Implementation, 3 February 2011
- (7) Memorandum Civil Works Program – Pilot Study Implementation: Second Round Pilot Study Selection, 14 June 2011
- (8) Executive Summary: Transforming the Current Pre-Authorization Study Process, January 2011
- (9) Project Management Plan (PMP) for study
- (10) Study SharePoint site located at:
<https://extranet.dse.usace.army.mil/sites/Divisions/SWD/SWF/WCRS/default.aspx>

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 Ecosystem Restoration 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. Because this study is a re-evaluation of a project with an existing flood risk management component, the RMO will coordinate with the Flood Risk Management PCX and the Risk Management Center (RMC) as appropriate to ensure that flood risk and life safety issues are properly addressed in the documentation.

3. STUDY INFORMATION

- a. **Decision Document.** A GRR and integrated EA for the Westside Creeks Ecosystem Restoration study shall be prepared under the San Antonio Channel, San Antonio, Texas authorization, also known as the San Antonio Channel Improvement Project (SACIP).

The purpose of the study is to develop a recommendation regarding the potential to authorize construction of an ecosystem restoration, and recreation project within the previously authorized SACIP. Pursuant to the National Environmental Policy Act (NEPA), an Environmental Assessment (EA) will be integrated in the GRR. A Finding of No Significant Impact (FONSI) is expected. The approved GRR and completed NEPA documentation will be the project decision document and will be forwarded to the ASA(CW) for approval. A determination will be made at the Washington level as to whether the new proposal may be constructed within existing project authorization or if additional Congressional authorization is required. **Study/Project Description.**

The SACIP was authorized by Section 203 of the Flood Control Act (FCA) of 1954 as part of a comprehensive plan for flood protection on the Guadalupe and San Antonio Rivers. The original authorization was subsequently modified in Section 103 of the WRDA 1976 and modified again in Section 335 of WRDA 2000.

FCA, 1954, SEC. 203. SAN ANTONIO CHANNEL, SAN ANTONIO, TEXAS

The project for flood protection on the Guadalupe and San Antonio River, Texas is hereby authorized substantially in accordance with the recommendation of the Chief of Engineers in the House Document Numbered 344, Eight-Third Congress at an estimated cost of \$20,254,000.

WRDA, 1976, SEC. 103. SAN ANTONIO CHANNEL, SAN ANTONIO, TEXAS

The flood control project for San Antonio Channel Improvement, Texas, authorized by section 203 of the Flood Control Act of 1954 (68 Stat. 1260) as part of the comprehensive plans for flood protection on the Guadalupe and San Antonio Rivers, Texas, is hereby modified to authorize and direct the Secretary of the Army, acting through the Chief of Engineers, to construct additional flood control measures as are needed to preserve and protect the Espada Acequia Aqueduct, located in the vicinity of Six Mile Creek, at an estimated cost of

\$2,050,000. Construction of such flood control measures shall be subject to the same conditions of local cooperation as required for the existing flood control project.

WRDA, 2000, SEC. 335. SAN ANTONIO CHANNEL, SAN ANTONIO, TEXAS.

The project for flood control, San Antonio channel, Texas, authorized by section 203 of the Flood Control Act of 1954 (68 Stat. 1259) as part of the comprehensive plan for flood protection on the Guadalupe and San Antonio Rivers in Texas, and modified by section 103 of the Water Resources Development Act of 1976 (90 Stat. 2921), is further modified to include environmental restoration and recreation as project purposes.

The above cited legislation defines the area of investigations as the San Antonio River and tributaries in Texas. The Westside Creeks including the Alazán, Apache, Martínez and San Pedro are sub-basins of the San Antonio River watershed in the City of San Antonio, Texas. This study is therefore authorized under this legislation.

The study area is located within the San Pedro watershed, which is located near the downtown region of the City of San Antonio, Texas. The study focuses on segments of the Alazán, Apache, Martínez and San Pedro Creeks, also known as the Westside Creeks, as they relate to the authorized SACIP and the immediately surrounding area as necessary to evaluate the ecosystem. The study area is located entirely within Bexar County, Texas and is a sub-watershed to the San Antonio River watershed. The study area is approximately 5.3 miles long and 2.5 miles wide at the widest point. The size of the study area is approximately 7410 acres, or 12 square miles. Elevations within the study area range from 558 to 732 feet. Figure 1 on the following page identifies the study area. The study will focus on segments of the Westside Creeks as highlighted in Figure 1.

This study shall be conducted under the USACE, New Planning Paradigm pilot study program introduced in January 2011. Generally speaking, the New Planning Paradigm focuses on risk-based scoping to define the pertinent water resources needs and opportunities to assess the appropriate level of detail for conducting investigations. By using risk to determine the appropriate level of detail, the organization focuses its resources only those tasks necessary to capture and succinctly document recommended solutions. The pilot studies seek to develop sustainable, replicable processes and methodologies to improve USACE planning practices and share lessons learned.

The New Planning Paradigm consists of five fundamental concepts that can be implemented without modifying existing guidance or legislation. These concepts are:

- Balance the level of uncertainty and risk with the level of detail in the study;
- Engage the vertical team of decision makers early and often as the study progresses;
- Identify the level of Federal interest early in the study, and consider Federal interests and investments beyond USACE National Economic Development and National Ecosystem Restoration;

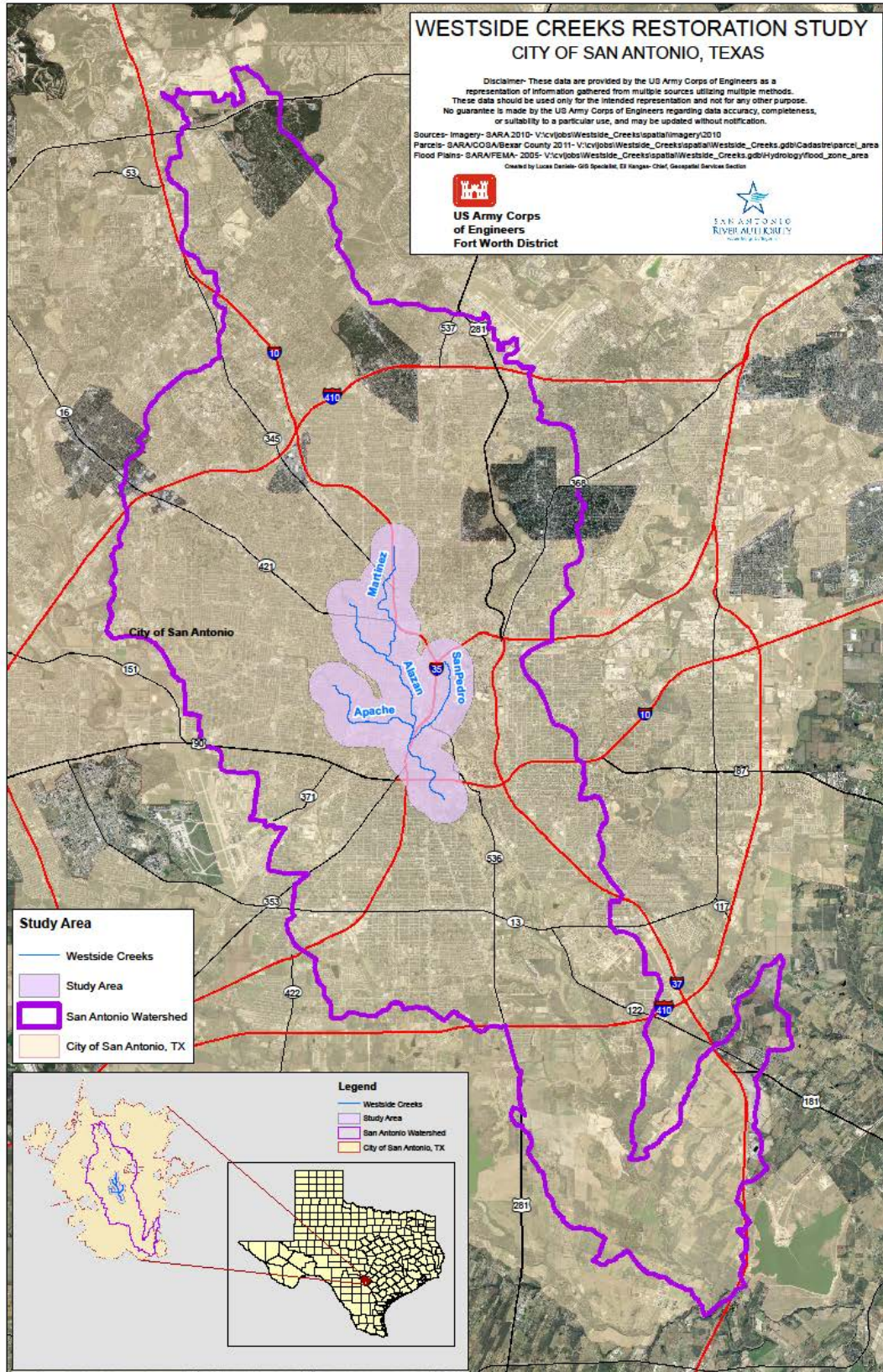


Figure 1. Study Area

- Recognize that there is no single “best” plan, but instead a variety of quantitative and qualitative approaches to multi-criteria decision making; and
- Ensure all funding, human resources, data, and information are identified and available for the duration of the study.

The ultimate product in the new paradigm remains a Chief’s Report. This report must be consistent with the 3x3x3 rule. This rule requires feasibility to be conducted in 3 years or less, for \$3 million or less, and include 3 levels of vertical team integration.

The new paradigm consists of four Decision Points. At Decision Point (DP) 1, the vertical team makes a Federal Interest Determination and reaches consensus on the study scope, study cost and planning framework. DP 2 addresses the recommended level of Federal investment. The review phase, DP 3, conducts an assessment of the various reviews including how the review comments were addressed and any resulting changes to the Federal investment. DP 4 provides the completed Chief’s Report. These DPs and the key items to be discussed during the meeting are outlined in Figure 2 on the following page. Furthermore, it is recommended that an In Progress Review (IPR) be conducted during critical points in the study to ensure the PDT is pursuing a track approved by the vertical team. A minimum of 6 IPRs should be conducted. More may be necessary depending upon the complexity of the study.

The study will follow the USACE feasibility study process as outlined for the New Planning Paradigm pilot studies, and will investigate structural and non-structural measures such as:

- (1) Channel modifications
- (2) Bank treatments
- (3) Pool, Rifle, Runs
- (4) Riparian Plantings
- (5) Oxbow wetland creation
- (6) Multi-purpose trails

Measures will be assessed not only to understand their ecosystem function and impacts, but also to ensure there are no adverse impacts to the performance of the existing flood risk management project.

The study sponsor (non-Federal) is the San Antonio River Authority (SARA). River authorities are special purpose political subdivisions of the State to serve regional areas, generally coincidental with river basins. SARA, created in 1937, is one of many such active river authorities in the State of Texas. Its jurisdiction covers 3,658 square miles including all of Bexar (pronounced “bear”), Wilson, Karnes and Goliad Counties.

What Does It Look Like ?

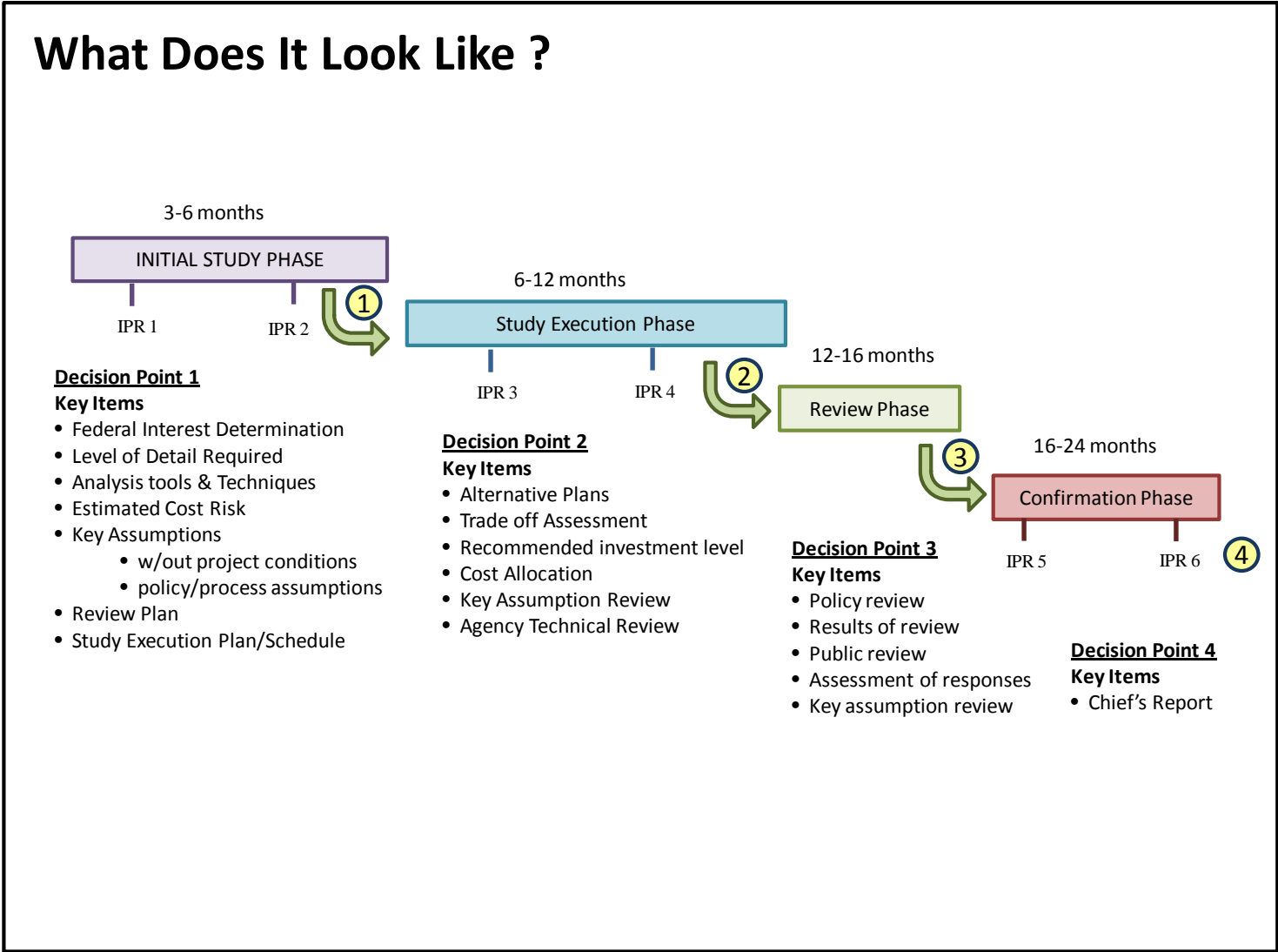


Figure 2. Decision Point Framework

The total Westside Creek Pilot Study cost is estimated at \$2.0 million and is cost shared at 50% Federal and 50% non-Federal cost. There is \$300 thousand estimated work-in-kind services. A total of \$52 thousand is estimated for Project Management and \$248 thousand is estimated for public involvement, geotechnical data, geomorphology assessment, environmental studies, recreation studies, and real estate requirements. The total project cost is unknown at this time. A preliminary range of \$50- 75 million was provided at a June 1, 2012 in-progress review with the vertical team based on information available at that time.

The study area lies within the jurisdiction of the Texas U. S. Congressional District 20, Rep. Charles Gonzalez, and District 23, Rep. Francisco Canseco. Current state senators are Sen. John Cornyn (R-TX) and Sen. Kay Bailey Hutchison (R-TX). The study is also supported by Congressional District 21, Rep. Lamar Smith, and District 28, Rep. Henry Cueller.

- b. Factors Affecting the Scope and Level of Review.** Currently the PDT is working to identify the Tentatively Selected Plan (TSP). Risks are in the project risk register and is being maintained on the study sharepoint site. However, generalized project risk of measures considered at this time can be discussed.

The critical risks relate to existing infrastructure (roads, bridges, retaining walls and utilities), Rights of Way, real estate agreements, and accuracy of baseline environmental conditions. Any work in close proximity infrastructure features may threaten their integrity. Early identification of Rights of Way will be necessary to clarify any necessary acquisitions and prepare an acquisition schedule that minimizes impacts to the study/project schedule. Furthermore, some public entities utilize real estate agreements that deviate from the Federal government standard. Use of these agreements will adversely impact the study/project schedule. Environmental baseline conditions will need to be continually reassessed as the study progresses since field data collected in the initial surveys may not accurately reflect mean baseline conditions. Several factors influence this risk. First, Texas has suffered a drought lasting approximately 3 years. Second, while only moderately likely, the nature of the spring migration may result in the surveys capturing all valleys or or all peaks in the migratory bird traffic resulting in under- or over-stating potential benefits. Finally, with the environmental factors at work (ex. evolution, climate change) the variability of estimated future conditions may be high.

Measures considered are only those that do not raise the water surface elevations within the existing FRM project that will provide environmental benefits are restoration of riparian meadows, restoration of sinuosity or establishment of measures that mimic the function of sinuosity (ex. rock vanes, J-hooks), and restoration of woody vegetation (i.e. shrubs & trees). Other measures will likely be considered, but, based on early hydraulic sensitivity analyses, the low risk to the existing FRM project and the potential for environmental lift indicated by the early measure screening process lends itself to plans that include these measures.

This study does not contain influential scientific information or assessment, nor does it expected to have significant economic, environmental or social affects to the nation.

Interagency interest is limited to the coordination required by federal law. Aside from being located within an existing successful flood risk management project, no other significant life safety issues have been presented in relation to this study or are expected in relation to any recommended project. This project lies completely within the state of Texas, and has no influence on other states. There is no request from the Governor of Texas for peer review by independent experts, nor is one anticipated. Close coordination with the sponsor and public meetings are expected to negate significant public dispute with regard to a recommended plan as are coordination with U.S. Fish and Wildlife Service (USFWS) and Environmental Protection Agency (EPA) and cultural/archeological interests. As a pilot study, methods and models used in this study may change prevailing practices on this or future multi-purpose studies. Currently, the GRR is expected to require an IEPR. If necessary, IEPR will occur after a draft report is prepared (Decision Point 2), but before the Civil Works Review Board (CWRB) and State and Agency Review of the Final Feasibility Report.

- a. **In-Kind Contributions.** Products and analyses provided by non-Federal sponsors as in-kind services are subject to DQC, ATR, and IEPR. The in-kind products and analyses to be provided by the non-Federal sponsor include: project management, public involvement coordination and outreach, geomorphic analysis and proposed natural channel design components, geotechnical boring logs and maps, and environmental data collection and analysis.

4. DISTRICT QUALITY CONTROL (DQC)

All decision documents (including supporting data, analyses, environmental compliance documents, etc.) shall undergo DQC. DQC is an internal review process of basic science and engineering work products focused on fulfilling the project quality requirements defined in the Project Management Plan (PMP). The home district shall manage DQC. Documentation of DQC activities is required and should be in accordance with the Quality Manual of the District and the home MSC.

- a. **Documentation of DQC.** The DQC documentation system will be DrChecks for the continuity of the review record. DrChecks will be used to document all comments, responses and associated resolutions accomplished through the DQC 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.

DQC shall be conducted and documented in a two phased approach. Table 1 on the following page summarizes the approach below.

The first phase of DQC shall be conducted by the technical supervisor for the section in which the original work product was produced. This is a check for technical sufficiency and completeness commensurate with scope and scale of the project, and may be delgated to qualified senior personnel in the area of expertise. DQC shall not be performed by the same District personnel who performed the original work including managing/reviewing the work in the case of contracted effort. After the first phase of DQC is complete, both the DQC reviewer and Section Supervisor will be required to sign a certification form (Attachment 3) prior to submittal to the Lead Planner or Project Manager. The signed certification form will be provided as part of the technical appendix and be included in any reports prepared for ATR and Headquarters Planning and Policy review.

Technical products submitted for WIK credit shall be reviewed by the District's PDT member for technical sufficiency and completeness. The PDT member and Section Supervisor will sign the DQC certification form and provide this to the Lead Planner or Project Manager prior to incorporating the documentation into study work products.

The second phase consists of review by a qualified DQC reviewer and the PDT member. The second phase shall begin once the Lead Planner has intergrated the technical appendices and main report into one report and the report is ready for ATR. Technical supervisors shall provide a team member name for DQC to the Lead Planner and/or Project Manager a minimum of two weeks prior to the start of the second phase of DQC. The Lead Planner or Project Manager for the study will supply the DQC team member and the PDT member a link to the electronic file one full business day prior to the start of the second phase of DQC.

During the second phase of the DQC, the reviewers will be responsible for a complete reading of the report and accompanying appendices supplied by the Lead Planner and/or Project Manager. After the second phase of DQC is complete, both the DQC member, PDT member and Section Supervisor will be required to sign a certification form (Attachment 3) prior to submittal of the interim report for ATR and Headquarters Planning and Policy review. The DrChecks documentation and signed certification form will be provided with the interim report prepared for ATR and Headquarters Planning and Policy review.

Table 1. Summary of DQC Activities

<i>Phase</i>	<i>Responsible Party</i>	<i>Product</i>	<i>Documentation</i>	<i>Timeline</i>
Phase 1	Technical Section Chiefs; may be delegated to work leaders, team leaders, or other qualified senior personnel	All models and write ups as well as any supporting data or documentation; includes any WIK submittals	Signed certification form and any track changes or Dr. Checks comments	Prior to providing to planning for inclusion in the main report; prior to submitting any interim technical products to ATR
Phase 2	PDT and DQC team	Completed Draft Report with Integrated Environmental Assessment and supporting appendices	Signed certification form and Dr. Checks comment report	Prior to submitting for ATR; Anticipated 1-21 November 2012

b. **Products to Undergo DQC.** The following technical products for the study will undergo DQC prior to being submitted to the planner for ATR and incorporation into the main report in advance of major milestones.

- All existing conditions and future without project conditions discipline specific models & narratives;
- All technical calculations & drawings in support of plan formulation
- All technical calculations, drawings and write ups for the recommended plan
- All items provided as Work In Kind
- All contracted deliverables
- Any new or changed information in the working draft of the GRR/EA

The planner will maintain a glossary of terms & acronyms used by the PDT for inclusion in the main report and to ensure consistency between agencies and disciplines.

c. **Required DQC Expertise.** The first and second phase of DQC shall be conducted by senior level section personnel (GS 12 or higher grade) from the section in which the original work product was produced. Additional quality checks are performed by staff responsible for the work, such as supervisors, work leaders, team leaders, designated individuals from the senior staff, or other qualified personnel. The technical components of the DQC team should mirror the PDT. .

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.

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 ATR leader prior to HQUSACE policy compliance review. All ATRs will be coordinated with the Planning Center of Expertise for Ecosystem Restoration (PCX). 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. Technical products developed in preparation of the IPRs and DPs will be considered for incremental product review by the ATR team or selected team members as those products are developed.

ATR will be completed on the following documentation:

<i>Major Milestone/Date</i>	<i>Technical Product</i>	<i>Approx. Completion Date</i>
IPR 1 – 8 Aug 2012	Other Social Effects Problem & Opportunity Statement(s)	18 Apr 2012 Complete
	H&H existing & future without project conditions write up & model with sensitivity analysis	20 Apr 2012 Complete
	Socio-economics write up	20 Apr 2012 Complete
	Recreation objective(s) & constraint(s)	2 May 2012 Complete
	GRR & EA text to date (Chap 1, Introduction; Chap 2, Affected Environment; & Chap 3, Problems & Opportunities)	18 Apr 2012 Complete
	HEC –RAS, reach 1 modeling with meadow, channel & vertical vegetation potential measures	18 May 2012 Complete
	Criteria and metrics for qualitative assessment of recreation, regional economic development and other social effects benefits	14 Jun 2012 Complete
	Environmental existing & future without project conditions write up and preliminary modeling	11 Jul 2012 Complete

	Description and potential locations for measures/alternatives including HEC-RAS modeling for Reaches 1-6	25 Jul 2012 Complete
IPR 2 – 6 Sep 2012	HEC-RAS modeling, Reach 7	10 Aug 2012 Complete
	GRR & EA to date (Chap 1-5 & 7-8 changes and updates; Chapter 6, Recommended Plan)	30 Aug 2012 Complete
IPR 3 – 9 Oct 2012	Avian IBI model & coefficients for model review start	30 July 2012 Complete
	Full plan HEC-RAS model	10 Sep 2012 Complete
	GRR & EA to date (Chap 1-8 changes and updates)	4 Dec 2012
IPR 4 – 30 Nov 2012	HTRW Phase 1 ESA from contractor	4 Dec 2012
	Quantitative Recreation analysis & narrative	3 Jan 2013
DP 2 – 12 Dec 2012	Parametric Estimate & Cost Risk Analysis	15 Jan 2013
	Avian IBI model & coefficients for model review completion	15 Jan 2013
	Real Estate Plan	8 Jan 2013
	HTRW Appendix	15 Dec 2012
	Economics Appendix (including RED & OSE qualitative narratives)	15 Dec 2012
	Draft FONSI	14 Jan 2013
	Environmental Appendix	26 Nov 2012
	Draft GRR with integrated EA (changes & updates from 16 Oct submittal noted in change log & new information log)	29 Nov 2012
IPR 5 – Feb 2013	Draft GRR with integrated EA incorporating changes related to public review comments	30 Jan 2013
IPR 6 – Apr 2013	Draft GRR with integrated EA incorporating changes related to IEPR comments	14 Mar 2013
DP 3 – 23 Apr 2013	Final GRR with integrated EA and all supporting data/information identified by the vertical team as necessary for the decision	15 Mar 2013
IPR 7 – Jun 2013	Final GRR with integrated EA and all supporting data/information identified by the vertical team as necessary for the decision to include any revisions resulting from State & Agency Washington level review	24 Jun 2013
DP 4 – 25 Jun 2013	Any vertical team requested revisions to the IPR 7 submittal	25 Jun 2013

- c. **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 7 team members outside of the Fort Worth District in the functional areas

presented in the table below. The appropriate RMO, in cooperation with the PDT, vertical team, and other appropriate centers of expertise, will determine the final make-up of the ATR team. The names, organizations, contact information, credentials, and years of experience of the ATR members should be included in Attachment 1 once the ATR team is established.

<i>ATR Team Members/Disciplines</i>	<i>Expertise Required</i>
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).
Planning	The Planning reviewer should be a senior water resources planner with extensive experience in the Corps planning process, be knowledgeable of Corps policies and guidelines, and be up to date on the new planning paradigm objectives and methodologies. He or she should be familiar with ecosystem restoration, flood risk management projects, and recreation planning and have experience relevant to issues associated with planning water resources projects in an urban setting.
Economics	The Economics reviewer will have extensive experience in other social effects and an understanding of those effects on national and regional social dynamics.
Environmental Resources	The team member should be an environmental subject matter expert, have experience in urban environmental resources, and be familiar with preparing, processing, and reviewing NEPA documents.
Hydrology and Hydraulic Engineering	The team member should be an expert in the field of urban hydrology and hydraulics, have a thorough understanding of open channel systems, the effects of management practices and low impact development on hydrology, the use constrained space in an urban environment, and the use of HEC computer modeling. A registered professional engineer (PE) is preferred.
Cultural Resources	The team member should demonstrate experience with historic architecture and have experience with archeological resources. The team member should also be familiar with preparing, processing, and reviewing cultural resource law compliance documentation.
Geotechnical Engineering	The geotechnical engineering reviewer should be a subject matter expert and should have extensive experience in urban channel design, pre- and post- construction evaluation and rehabilitation. A registered PE is preferred.

Civil Engineering	Team member should be a civil design subject matter expert and have experience with natural channel design, utility relocations, and interior drainage requirements. A registered PE is preferred.
Structural Engineering	TBD
Electrical/Mechanical Engineering	N/A
Cost Engineering	The team member should be familiar with cost estimating for ecosystem restoration 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. 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 District Project Manager.
Real Estate	The team member should have experience with similar civil works projects and should also be familiar with preparing, processing, and reviewing Real Estate Plans. The team member must be selected from the RE CoP approved RE ATR list.
Hazardous, Toxic and Radioactive Waste (HTRW)	The team member should have experience with similar civil works projects and should also be familiar with preparing, processing, and reviewing Phase I Environmental Site Assessments per USACE regulations.

- d. 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 be followed. See four comment structure discussed under DQC.

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.

Decision on IEPR. IEPR Type I and Type II will be required for this study. IEPR Type II will be completed in Preconstruction Engineering and Design (PED). The non-performance of a flood risk management project would result in significant impacts to project economics, the environment, and life, health, and safety. This alone triggers the need for an IEPR. The cost is expected to exceed \$45 million. In addition, the methods and models used in this study may change prevailing practices on this or future multi-purpose studies.

a. Products to Undergo Type I IEPR. IEPR will occur after Decision Point 2. It will start concurrent with public review and complete within 30 days following the incorporation of public review comments into the Draft General Re-evaluation Report and Integrated Environmental Assessment. The IEPR comments and responses will be 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 Eligible Outside 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 Draft GRR with integrated EA as distributed for public review will be provided to the IEPR panel as well as documentation of previous reviews and any applicable vertical team guidance.

c. Required Type I IEPR Panel Expertise.

<i>IEPR Panel Members/Disciplines</i>	<i>Expertise Required</i>
Economics	The Economics Panel Member should be an industry expert in the national and regional implications of other social effects in urban settings, particularly as they relate to low-income and minority populations.
Environmental	The Environmental Panel Member should be an expert in avian habitat in arid and semi-arid climates with a clear understanding of migratory behaviors. The Environmental Panel Member should also have a clear understanding of the document preparation, process, and document review associated with NEPA.
Hydraulic Engineering	The Hydraulic Engineering Panel Member should be an expert in the field of urban hydraulics, have a thorough understanding of open channel systems, and have a thorough understanding of natural channel design within space constrained systems. He/she should be familiar with urban hydrology, the effects of management practices and low impact development on hydrology, the uses of constrained spaces in an urban environment, and the use of HEC computer modeling. This panel member should be a

registered professional engineer (PE).

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 4.d 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 Corps 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).

- c. Planning Models.** The following planning models are anticipated to be used in the development of the decision document: Avian Index of Biological Integrity to Assess and Monitor Arid and Semi-arid Riparian Ecosystems.

<i>Model Name and Version</i>	<i>Brief Description of the Model and How It Will Be Applied in the Study</i>	<i>Certification / Approval Status</i>
<u>Avian Index of Biological Integrity to Assess and Monitor Arid and Semi-arid Riparian Ecosystems</u>	Index of Biological Integrity (IBI) models have 5 objectives: identify areas in need of protection/action; provide empirical information describing baseline conditions; evaluate the effects of habitat restoration/management efforts; improve understanding of human-induced impacts; and monitor environmental conditions/functions. The Avian IBI will be used to accomplish all 5 of these on the WSC study using as metrics the number of bird species, the number of birds per species, and an index of human disturbance based on land use at the watershed scale, the local scale ($\leq 100\text{m}$ of the stream/riparian reach), and immediate scale ($<50\text{ m}$ of the survey station). Bird guilds will be assigned based on migratory strategy, diet, foraging behavior, conservation status, riparian dependencies, origin, and nesting substrate.	IBI methodology – certification underway; Avian IBI – approval of guilds and coefficients will be required



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

<i>Model Name and Version</i>	<i>Brief Description of the Model and How It Will Be Applied in the Study</i>	<i>Approval Status</i>
HEC-RAS 4.1	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 ensure performance of the existing flood risk management project is not compromised as a result of the addition of ecosystem restoration and recreation measures to the project.	HH&C CoP Preferred Model

10. REVIEW SCHEDULES AND COSTS

ATR Schedule and Cost. Documents will be submitted to the ATR team leader and appropriate technical discipline as soon as they are available. The completed package submitted prior to decision points shall be provided concurrently to the ATR team and vertical team two weeks (14 days) in advance of the decision point meeting.

There will be DQC, ATR, and IEPR for the GRR and integrated EA. The timing and scope of these reviews is discussed in the previous sections of this Review Plan. DQC and ATR of submittal packages and feasibility report materials will be required prior to major milestones. The following table shows preliminary cost estimates to conduct the ATR.

<i>Product</i>	<i>Status</i>	<i>Date</i>	<i>Est. Cost</i>
DP1	Completed	1 Dec 11	\$ 3,657
DP2 (see table, sec 5, a. for items reviewed)	Scheduled	12 Dec 12	\$ 58,750
DP3	Scheduled	Apr 2013	\$ 5,000
DP4	Scheduled	June 2013	\$ 1,000
			\$ 68,407

(2) IEPR Schedule and Cost. IEPR will be completed concurrent with public review following DP2 and upon approval of the vertical team. Type I IEPR is 100% Federal cost, but is included in the project budget. IEPR will be completed on the following documentation:

<i>Product</i>	<i>Status</i>	<i>Date</i>	<i>Est. Cost</i>
Draft General Re-evaluation Report and Integrated Environmental Assessment	Scheduled	17-Dec-12	\$30,000

c. Model Certification/Approval Schedule and Cost. Submission of the Avian IBI model coefficients for approval is expected to occur 31 August 2012. Expected cost is \$50,000. The approval is expected to take approximately 45 days with completion occurring 30 October 2012.

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. A public workshop will be held during the development of alternatives, which will be after the FSM and prior to the AFB. In addition, 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.

The public will have an opportunity to review and provide comments on the Draft General Re-evaluation Report/EA for 45 days occurring approximately August 2013. 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: Westside Creeks 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. Minor changes to the review plan since the last MSC Commander approval are documented in Attachment 3. 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: Westside Creeks 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, Mississippi Valley Division
ATTN: ECO-PCX Operations Director, CEMVD-PD-N
Clock Tower Building
1500 Rock Island Dr.
Rock Island, IL. 61204

ATTACHMENT 2: SAMPLE STATEMENT OF TECHNICAL REVIEW FOR DECISION 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 DrCheckssm.

SIGNATURE

Name

ATR Team Leader

Office Symbol/Company

Date

SIGNATURE

Name

Project Manager

Office Symbol

Date

SIGNATURE

Name

Architect Engineer Project Manager¹

Company, location

Date

SIGNATURE

Name

Review Management Office Representative

Office Symbol

Date

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
Chief, Engineering Division
Office Symbol

Date

SIGNATURE
Name
Chief, Planning Division
Office Symbol

Date

¹ Only needed if some portion of the ATR was contracted

ATTACHMENT 3: SAMPLE STATEMENTS OF DISTRICT QUALITY CONTROL FOR TECHNICAL PRODUCTS & REPORTS

COMPLETION OF DISTRICT QUALITY CONTROL, PHASE 1

The District Quality Control (DQC) has been completed for the <type of product> produced by <technical section/discipline> for Westside Creeks. The DQC was conducted as defined in the project's Review Plan to comply with the requirements of EC 1165-2-209. During the DQC, compliance with established policy, principles and procedures, utilizing justified and valid assumptions, was verified. This included review of: assumptions, methods, models, procedures, and material used in analyses, measures 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. All comments resulting from the DQC have been resolved.

SIGNATURE

Name

Section/Branch Chief

Office Symbol/Company

Date

SIGNATURE

Name

DQC Team Member (if delegated)

Office Symbol

Date

SIGNATURE

Name

PDT member

Company, location

Date

COMPLETION OF DISTRICT QUALITY CONTROL, PHASE 2

The District Quality Control (DQC) has been completed for the General Re-evaluation Report for Westside Creeks. The DQC was conducted as defined in the project's Review Plan to comply with the requirements of EC 1165-2-209. During the DQC, completion of DQC Phase 1 and consistency across technical disciplines was verified. This version of the report has been reviewed for compliance with established policy, principles and procedures, utilizing justified and valid assumptions, was verified. This included review of: assumptions, methods, models, procedures, and material used in analyses, measures 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. All comments resulting from the DQC, Phase 2 have been resolved, and the comments have been closed in Dr. Checks.

SIGNATURE

Eric Verwers
Planning, Environmental, and Regulatory
Division Chief
CESWF-PER

Date

ATTACHMENT 4: REVIEW PLAN REVISIONS

Revision Date	Description of Change	Page / Paragraph Number