

REVIEW PLAN

RIO GRANDE BASIN SAN ACACIA, NM to FT. QUITMAN, TX SECTION 729, WRDA 1986, as amended WATERSHED ASSESSMENT

Prepared by
U.S. Army Corps of Engineers
Albuquerque District
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**US Army Corps
of Engineers®**

Review Plan

RIO GRANDE BASIN SAN ACACIA, NM to FT. QUITMAN, TX WATERSHED ASSESSMENT

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1. PURPOSE AND REQUIREMENTS

Purpose

This Review Plan (RP) defines the scope and level of peer review for the Rio Grande Basin, San Acacia, NM to Ft. Quitman, TX, Section 729 (§729) Watershed and River Basin Assessment products. This RP was developed and based on the 15 February 2012 template from the U.S. Army Corps of Engineers (USACE) National Planning Centers of Expertise (PCX) draft Programmatic Review Plan for §729 of the Water Resources Development Act (WRDA) of 1986 and Section 203 of WRDA 2000, as amended, watershed studies.

§729 of WRDA 1986, as amended, reads:

The Secretary, in coordination with the Secretary of the Interior and in consultation with appropriate Federal, State, and local agencies, is authorized to study the water resources needs of river basins and regions of the United States.

References

- Engineering Circular (EC) 1165-2-209, Civil Works Review Policy, 31 Jan 2010
- EC 1105-2-411, Watershed Plans, 15 Jan 2010, expired 15 January 2012
- EC 1105-2-412, Assuring Quality of Planning Models, 31 Mar 2011
- Engineering Regulation (ER) 1110-1-12, Quality Management, 30 Sep 2006
- ER 1105-2-100, Planning Guidance Notebook, Appendix H, Policy Compliance Review and Approval of Decision Documents, Amendment #1, 20 November 2007
- ER 1165-2-208, In-Kind Credit Provisions of Section 221 of the Flood Control Act of 1970, as amended
- Director of Civil Works Policy Memorandum #1 CECW-P, 19 January 2011
- CECW-CP Memo for Distribution, "Peer Review Process", 30 March 2007
- QMS 02500-SPD, Preparation and Approval of Review Plans
- QMS 02500.1-SPD, Supplemental Review Plan Checklist
- Rio Grande Watershed Assessment Management Plan

Requirements

This Review Plan was developed in accordance with EC 1165-2-209, the review requirements therein modified in accordance with §729 WRDA 1986 as amended implementation guidance and EC 1105-2-411 to fit the unique nature of this program as a small scale (in scope, schedule and budget) investigations authority that lacks construction authority. The review requirements laid out herein establish an appropriate, accountable, comprehensive review strategy by

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providing a seamless process for review of planning documents in the §729 authority. Four general levels of review are outlined below: District Quality Control/Quality Assurance (DQC), Agency Technical Review (ATR), Independent External Peer Review (IEPR), and Policy and Legal Compliance Review commensurate with the level of detail authorized in the §729 authority. 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).

The Watershed Assessment (WA) does not result in implementation or construction of a project. Current USACE policy and procedures apply the same review requirements to WAs, such as DQC and ATR. IEPR may be required if the assessment involves significant threat to human life/safety, significant public dispute other criteria that trigger the requirement of IEPR outlined below.

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 Planning Center of Expertise for Ecosystem Restoration (ECO-PCX).

No feasibility level cost estimates will be prepared during this watershed assessment. The RMO will not need to coordinate with the Cost Engineering Directory of Expertise (DX) to conduct ATR of cost estimates, construction schedules, and contingencies.

3. WATERSHED ASSESSMENT INFORMATION

The Rio Grande Salinity WA is authorized under WRDA of 1986 §729. The non-Federal sponsors for the WA are the New Mexico Interstate Stream Commission (NMISC) and the Texas Commission on Environmental Quality (TCEQ). Solutions identified may be implemented by federal and non-federal sponsors and partners. If solutions are identified that would fit within the authorities of USACE, then a tiered feasibility study will be conducted under separate authority, as required.

Decision Document

The Rio Grande Salinity WA will be prepared in accordance with ER 1105-2-100, Appendix H and EC 1105-2-411. The approval level of the watershed management plan is HQ USACE.

Watershed Assessment Description

SPA, NMISC and TCEQ propose to study economic and ecosystem related issues with regards to water quality (salinity) in the Rio Grande Basin from San Acacia, NM to Fort Quitman, Texas (see Figure 3-1). The Initial Watershed Assessment (IWA) determined there is a Federal interest in continuing the feasibility level WA phase in July 2008. Part I of the watershed assessment was completed in December 2010. Completed documents include Knowledge and Understanding of Dissolved Solids in the Rio Grande –San Acacia, New Mexico, to Fort

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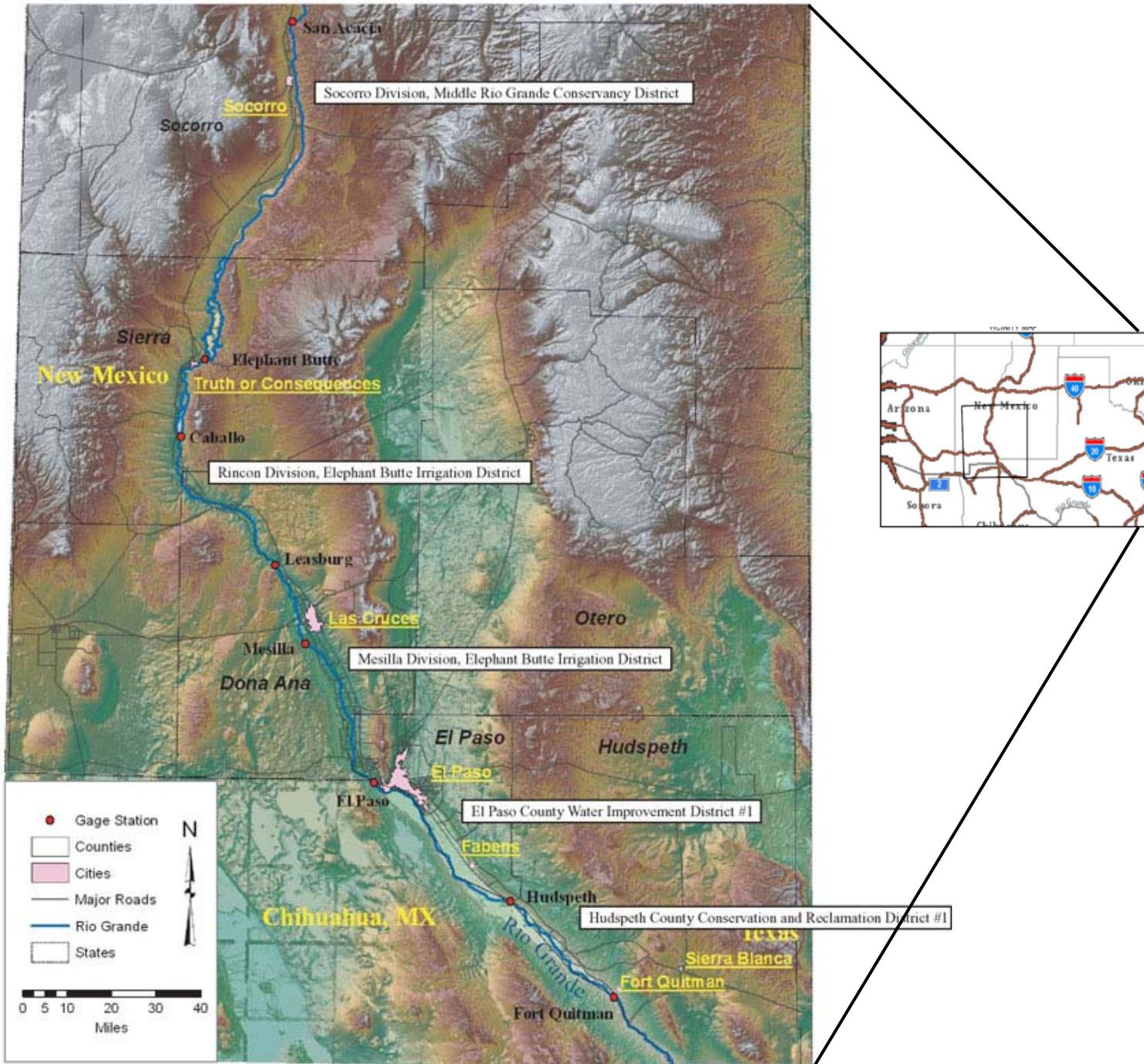
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Quitman, Texas, and Proposed Plan for Future Studies and Monitoring and Rio Grande Salinity Management Program: Preliminary Economic Impact Assessment. The salinity database was also completed and turned over to the State.

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Figure 3-1 The Rio Grande Salinity Watershed Assessment Study Area Map



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Factors Affecting the Scope and Level of Review

This WA does not result in decision documentation or construction / project implementation. As such, the inherent risks are relatively low. Table 3-1 outlines the factors affecting the scope and level of review for this WA with a rating of the factors as high, medium and low based upon their difficulty to address within the WA. The "IEPR Trigger" column notes if any of the factors warrant the need for an IEPR based on guidance provided in EC1165-2-209. Based on the factors outlined in Table 3-1, an IEPR would not be required for this WA.

Table 3-1 Factors Affecting the Scope and Level of Review

Factor	Rating	IEPR Trigger	Description
Customer Expectations	Medium	None	The sponsors for this WA are the New Mexico Interstate Stream Commission and the Texas Commission on Environmental Quality; however, both of these agencies are also members of the Rio Grande Compact Commission. Our sponsors have a high expectation that SPA will also engage the Rio Grande Compact Commission for decision making throughout this project. SPA has worked closely with our customers as well as all members of the Rio Grande Compact Commission to ensure that their expectations are clearly defined for this WA.
Subject Matter Expertise	Medium	None	Subject matter expertise risk is a measure of the level of expertise concerning salinity in the Rio Grande basin and the risk that relevant information may not be available. SPA has contacted current and retired known subject matter expertise from the academic communities located in the Rio Grande Basin as well as subject matter experts from other governmental agencies and enlisted their input.
Plan Formulation	High	None	This is one of the first watershed studies seeking complete involvement from the Rio Grande Compact Commission. The Commission's directive to SPA was to focus on salinity issues within the Rio Grande Basin. This focus involves a specific set of requirements that limits the scope of this WA. The plan development will be challenging.

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Factor	Rating	IEPR Trigger	Description
Economic – Environmental Costs and Benefits	Medium	None	Consistent with EC 1105-2-411, identifying a National Economic Development (NED) or National Ecosystem Restoration (NER) plan is not required. However, the sponsors and the Rio Grande Compact Commission understand the importance of analyzing economic impacts related to salinity issues and have included an economic analysis as a part of the scope for this WA. The plan will follow the USACE planning process and conduct a screening level economic comparison among the strategies to prioritize actions. A detailed NED/NER analyses would be done as part of the feasibility planning process if a USACE tiered-off project is identified. The plan will lean heavily on existing economic data and reports. No novel methods are proposed for the screening level comparative analysis.
Environmental - Cultural Impacts, including impacts to fish and wildlife species.	Medium	None A National Environmental Policy Act (NEPA) document is not required. Any tiered implementation studies that would have potential for significant impacts would address NEPA and IEPR analysis at that time. The IEPR discretionary trigger of potential significant impacts is not met	In accordance with EC 1105-2-411, a NEPA document is not required for this WA. However, as part of the planning process, a screening of the potential environmental and cultural impacts of the planning scenarios will be conducted. This will also include a screening of potential impacts to federally listed species and other fish and wildlife species. With a primary purpose of ecosystem restoration, impacts to environmental and cultural issues will be avoided and minimized to the full extent practicable. In some of the more developed areas or in areas with conflicting uses, there is a potential for significant impacts. The WA will identify these potential impacts or concerns. Assessment of the extent of those impacts and identification of mitigation, if necessary, will be done in association with the tiered-off feasibility studies to implement the proposed actions by the appropriate lead agency. If there are projects identified for USACE to consider, then this assessment would occur in a USACE tiered-off feasibility analysis/NEPA documentation as appropriate for the applicable authority.

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Factor	Rating	IEPR Trigger	Description
Public Dispute	High	While there are historic public disputes, since the creation of the Rio Grande Compact Commission, the water-rights disputes have largely been resolved by the Commission. The IEPR Mandatory Trigger for significant public dispute is not currently met.	<p>The public dispute issues concern water rights as all water in the Rio Grande Basin are highly regulated by the Rio Grande Compact. This treaty which was ratified in 1939 not only specifies a water delivery schedule, but also sets a minimum quality standard specific to salinity. The Rio Grande Compact Commission is comprised of representatives from the states of Colorado, New Mexico and Texas and is responsible for administering the Rio Grande Compact.</p> <p>As part of the public involvement plan, the goal is to collaborate with not only the public, but to actively engage the entire membership of the Commission through the planning process. To meet this objective, SPA has included an intensive public involvement process including Commission-sponsored and facilitated meetings to help ensure the plan meets the overall goals and objectives of the Rio Grande Basin community. At this time, no issues of public dispute over the goals and objectives of the plan have arisen.</p>
Significant Interagency Interest	Low	This is an interagency collaborative plan. There have been no requests raised by Federal or State agencies for an IEPR. The IEPR discretionary trigger of agency interest in IEPR is not met.	As the Rio Grande Compact administers water rights in the Rio Grande basin, there is a significant level of interagency interest. However, the Rio Grande Compact Commission has been involved since the project was initiated and the plan is designed to incorporate a collaborative and integrated process. As such, all members of the Commission as well as other federal, state and local agencies that have an interest or role in implementing the goals and objectives of this effort will be actively engaged throughout the planning process.
Governor Request for IEPR	Low	There has been no request by either the Governor of New	The NMISC and the TCEQ are the non-federal sponsors of this WA. The WA is meeting specific needs and objectives for the both the sponsors as well as the Rio Grande Compact Commission.

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Factor	Rating	IEPR Trigger	Description
		Mexico or the Governor of Texas for a peer review by independent experts. The IEPR Mandatory Trigger is not met.	Based on discussions with the sponsors and the members of the Rio Grande Compact Commission, they do not see any need to request a peer review by independent experts for this WA.
Risk Assessment	Low	None	This WA will reflect the uncertainties and assumptions inherent in planning on a larger scale and will result in a more comprehensive and strategic vision or plan. Because the plan will result in alternative scenarios or strategies rather than specific projects, a general risk assessment of the scenarios abilities to meet the goals and objectives of the plans will be conducted. If any proposals are identified that would meet USACE authorities, separate feasibility studies with associated detailed cost engineering and risk assessments would be conducted as tiered studies to this WA.
Life Safety	Low	With no construction proposed and the focus on salinity management and ecosystem restoration, the IEPR mandatory trigger to significant threat to human life is not triggered.	At this time, Flood Risk Management (FRM) is not a primary planning objective. The development of salinity management measures and ecosystem restoration strategies will consider their interaction with FRM issues to provide a systematic and holistic approach to the strategy. The study will not necessarily lead to USACE action. Any flood risk management components of the plan will require an individual assessment on whether there is a significant threat to human life associated with the proposed project. Any proposed flood risk management project will require additional authority and feasibility study prior to implementation. In the event that additional funding and need to develop FRM strategies arises during the planning process, the issue of life safety will be re-evaluated
Novel Methods	Medium	No Novel Methods are proposed so	The plan will consolidate and integrate the existing research but no new research is proposed. All new

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Factor	Rating	IEPR Trigger	Description
		the MSC discretionary trigger for IEPR is not met.	information will be restricted to data collection only to address data gaps in the existing without plan conditions. No novel methods are proposed for the data collection or data interpretation. Data gaps that could be formed into research questions will be identified within the plan. However, any research based on these data gaps would be conducted under tiered-off studies by USACE or other partners and will be subject to the appropriate reviews within those tiered-off studies.
Construction Costs	Low	With no construction activities proposed, the IEPR mandatory trigger of construction equal or greater to \$45 million is not met.	In accordance with WRDA §729 and EC 1105-2-411, the Rio Grande Basin WA will identify planning scenarios or strategies. It does not result in a proposed justification for design and construction. If management measures are identified that would fall under a USACE authority, a new feasibility study would be requested for that action including a new cost share agreement, project management plan. A NEPA document would be conducted under the appropriate authority referencing information in the WA.
Robust or Unique Construction Sequencing	Low	With no construction proposed, the MSC discretionary trigger for IEPR for unique construction is not met.	Since the Rio Grande Basin WA will only result in alternative planning scenarios and will not construction of a project, there are no issues surrounding the project design. Considerations of the project design approach and necessary reviews will be addressed in tiered off feasibility studies of any potential USACE projects identified within the final Rio Grande Basin Plan.

In-Kind Contributions

Products and analyses provided by non-Federal sponsors as in-kind services are subject to DQC and ATR, similar to any products developed by USACE. However, as discussed in the WAMP, the non-Federal Sponsors' required cost share currently does not include in-kind services. Any in-kind services would be subject to the provisions of ER 1165-2-208, In-Kind Credit Provisions of Section 221 of the Flood Control Act of 1970, as amended.

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4. DISTRICT QUALITY CONTROL (DQC)

All decision documents (including supporting data, analyses, environmental compliance documents, etc.) shall undergo DQC prior to ATR. DQC is an internal review process of basic science and engineering work products focused on fulfilling the project quality requirements defined in the WAMP. SPA will manage DQC. Documentation of DQC activities is required and will be accordance with the Quality Manual of SPA and the RMO. Any discrepancies between a reviewer and a Project Delivery Team (PDT) member will be resolved face-to-face. If a concern cannot be satisfactorily resolved between the DQC team and the PDT, it will be elevated to the section supervisor for further resolution.

Documentation of DQC

Reviewers shall review the draft watershed assessment to confirm that work will be done in accordance with established professional principles, practices, codes, and criteria and for compliance with laws and policy. Comments on the report shall be submitted into DrChecks™ software and provided as report in subsequent compliance packages.

Reviewers shall pay particular attention to one's discipline but may also comment on other aspects as appropriate. Reviewers that do not have any significant comments pertaining to their assigned discipline shall provide a comment stating this.

Review comments shall contain these four principal elements:

- A clear statement of the concern;
- The basis for the concern, such as law, policy, or guidance;
- Significance for the concern; and
- Specific actions needed to resolve the comment.

DrChecks™ review software will be used to document all DQC comments, responses and associated resolutions accomplished throughout the review process. Comments should be limited to those that address content or policy compliance issues. Comments to grammar, style or spelling should be not added to Dr Checks but should be submitted to the PM who will compile these comments to be transmitted to the PM via email.

In some situations, especially addressing incomplete or unclear information, commenter's will seek clarification by coordinating directly with PDT member to assess whether further specific concerns may exist.

The DQC documentation in DrChecks™ will include each DQC comment and the PDT response.

A copy of the DQC comments will be submitted to the ATR Team.

Products to Undergo DQC

All District and Contractor products will undergo DQC review. DQC review that has occurred has been conducted by the technical experts assigned by the Rio Grande Salinity Coalition. These experts included Dr. Fred Phillips, New Mexico Institute of Mining and Technology (Geochemistry, Rio Grande salinity and overall project); Dr. James Hogan, University of Arizona (Hydrogeochemistry, Rio Grande salinity and overall project), and John Hawley, Hawley Geomatters (Geologist, focus Hydrogeologic framework of study area).

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The following documents are the products subject to DQC (products that have already undergone DQC review are demarked with an asterisk *):

Part 1 Documents:

- (1) Geospatial Salinity Database* – developed by United State Geological Survey (USGS)
- (2) Rio Grande Salinity Budget* - developed by USGS
- (3) Economic Assessment* - developed by USGS
- (4) Alternatives Analysis for the Rio Grande Salinity Management Program* - developed by contractor CH2MHill

Part 2 Documents:

- (1) Preliminary Draft, Draft and Final Site Screening Criteria Technical Memorandum* - developed by contractor CH2MHill
- (2) Preliminary Draft Distal Mesilla Conceptual Model Technical Memorandum* - developed by contractor CH2MHill
- (3) Draft Distal Mesilla Conceptual Model Technical Memorandum – to be developed by contractor CH2MHill
- (4) Final Distal Mesilla Conceptual Model Technical Memorandum – to be developed by contractor CH2MHill
- (5) Economic Analysis Support Technical Memorandum – to be developed by contractor CH2MHill
- (6) Draft Watershed Assessment – to be developed by SPA, USGS, and contractor CH2MHill

5. AGENCY TECHNICAL REVIEW (ATR)

ATR is mandatory for all decision documents (including supporting data, analyses, environmental compliance documents, etc.); however, ATR should be scaled according to the complexity of the WA. ATR shall be documented and discussed at the Alternative Formulation Briefing (AFB) milestone. Certification of the ATR will be provided prior to the District Commander signing the final report. ATR is managed within USACE by the designated RMO and is conducted by a qualified team from outside SPA that is not involved in the day-to-day production of the project/product. ATR teams will be comprised of senior USACE personnel. The ATR team lead will be from outside the home MSC.

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Products to Undergo ATR

ATR will be performed throughout the WA in accordance with SPA and SPD Quality Management Plans. Based on recommendations from the ECO-PCX, only the AFB document will undergo ATR. However, at AFB, the MSC, the District and the Sponsors will re-evaluate the need for future ATRs based on the plan development to ensure that the ATR is scalable to the work product being reviewed.

Required ATR Team Expertise

The ATR team reflects the significant expertise involved in the development of the plan and within the DQC team. Team members should have multiple skill sets (e.g. one individual reviewing both plan formulation and biological resources) to minimize the size of the team, which will increase efficiencies and reduce cost. In addition, not all ATR team members will be required to review each document but each ATR team member should review all documents at a level to understand the overall goals and objectives of the plan and ensure consistency within the plan as it relates to their discipline. Table 5-1 lists the disciplines and expertise likely needed for the ATR team. As the plan develops, the team disciplines and necessary expertise will be adjusted as needed through consultation among the RMO, PDT, SPD, and the other applicable PCXs. Based on the ecosystems considered and the issues associated with the plan, the ATR team members are likely to be from USACE South Pacific Division for its expertise in flash flood systems and multi-purpose, jointly sponsored watershed assessments (such as the CALFED Bay Delta Project), and/or USACE Northwest Division for its expertise in large scale multi-system ecosystem restoration projects (such as the Puget Sound Nearshore Ecosystem Restoration Project).

Table 5-1 Required ATR Team Member Expertise by Technical Specialty

ATR Team Members/Disciplines	Expertise Required
ATR Lead	The ATR lead should be a senior professional preferably with experience in preparing §729 WAs and conducting ATRs. The lead should also have the necessary skills and experience to lead a virtual team through the ATR process. Typically, the ATR lead will also serve as a reviewer for a specific discipline (such as planning, economics, environmental resources, etc). The ATR Lead shall be from outside SPD.
Planning	The planning reviewer should be a senior water resources planner with experience in water quality issues such as salinity, multi-purpose watershed assessments and general planning policy. The planning reviewer should have a strong understanding of WRDA 1986 §729 requirements and the unique differences to the traditional feasibility report. The planning reviewer should also understand public collaborative

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ATR Team Members/Disciplines	Expertise Required
	planning methods and processes.
Economics	The economics reviewer should be a senior economist with experience in combined NER plans and trade-off analysis. The reviewer should have a strong understanding of WRDA 1986 §729 requirements and the unique differences to the traditional feasibility report.
Environmental Resources	The biological resources reviewer should be a senior environmental specialist with experience in aquatic ecosystem restoration. The reviewer should have a strong understanding of WRDA 1986 §729 requirements and the unique differences to the traditional feasibility report. Expertise in saline freshwaters systems is also needed.
Cultural Resources	The cultural resources reviewer should be a senior cultural resources specialist with experience in coordination with indigenous populations and incorporation of indigenous perspectives such as traditional ecological knowledge within a planning process. The cultural resources reviewer should have a strong understanding of WRDA 1986 §729 requirements and the unique differences to the traditional feasibility report.
Hydrology	The hydrology reviewer should be an experienced hydrologist with expertise in flash flood systems, and the computer modeling techniques to be used. Models to be used will be determined after the cost share agreement is executed but may include GSSHA. The hydrology reviewer should have expertise in hydrologic considerations for aquatic ecosystem restoration. The hydrology reviewer should have a strong understanding of WRDA 1986 §729 requirements and the unique differences to the traditional feasibility report.
Hydraulic Engineering	The hydraulic engineering reviewer should be an expert in the field of hydraulics and have knowledge of hydraulic considerations for aquatic ecosystem restoration, bioengineering approaches – specifically bioengineering approaches to help reduce salinity, sediment and erosion issues downstream. Understanding of non-structural

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ATR Team Members/Disciplines	Expertise Required
	approaches such as low impact development is beneficial. The hydraulic engineering reviewer should also have experience with the computer modeling techniques that will be used. Models to be used will be determined after the cost share agreement is executed, but are likely to include groundwater modeling, MODFLOW-2000, HEC-RAS and FLO-2D. The hydraulic engineer should have a strong understanding of WRDA 1986 §729 requirements and the unique differences to the traditional feasibility report.
Geotechnical Engineering	The geotechnical engineering reviewer should be an expert in the field of the geology of semi-arid and arid- climate river basins, as well as .geologic sources of sources of salt. The reviewer should have a strong understanding of WRDA 1986 §729 requirements and the unique differences to the traditional feasibility report.
Engineering and Design	The engineering and design reviewer should be an expert in the field of civil engineering as it relates to treating saline waters and designing aquatic ecosystem restoration in these areas. The reviewer should have expertise in multipurpose bioengineering approaches. Specific engineering disciplines of geotechnical, civil, and structural may be needed. The reviewer should have a strong understanding of WRDA 1986 §729 requirements and the unique differences to the traditional feasibility report.

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. Any editorial comments should be provided informally by email to the PM for the WA.

The four key parts of a quality review comment will normally include:

- The review concern – identify the product’s information deficiency or incorrect application of policy, guidance, or procedures;
- The basis for the concern – cite the appropriate law, policy, guidance, or procedure that

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has not be properly followed;

- 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
- 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 (see 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

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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 WA. 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 WA. For decision documents where a Type II IEPR (Safety Assurance Review (SAR)) 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 SAR, are managed outside the USACE and are conducted on design and construction activities for hurricane, storm, and FRM 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.

For watershed assessments prepared under the §729 authority, Type II IEPR is not applicable. Any recommendations from the WA that are pursued under separate authority may require Type II IEPR during the design and implementation phase. The decision on whether Type II IEPR is required will be verified and documented in the review plan prepared for the design and implementation phase of the project.

Decision on IEPR

This study does not meet the mandatory or discretionary triggers for a Type I IEPR per Section 2034 of the Water Resources Development Act of 2007 or EC 1165-2-209. The study has a cost estimate of less than \$45 million, does not represent a threat to health and safety, is not controversial, and has not had a request for IEPR from any governor in the states involved in this study the Rio Grande Compact Commission, or the head of a Federal or state agency.

Table 3-1 outlines the criteria for an IEPR and details how this WA does not meet the criteria and is therefore eligible for an IEPR exclusion request.

Type II IEPR is not applicable to §729, because the §729 authority is not a construction authority. Type II IEPR would be performed during the implementation phase for any Corps project recommended through §729 that was authorized for construction.

Products to Undergo Type I IEPR

Not applicable

Required Type I IEPR Panel Expertise

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Not applicable

Documentation of Type I IEPR

Not applicable

7. POLICY AND LEGAL COMPLIANCE REVIEW

All SPA and Contractor products will be reviewed throughout the WA 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 any of these products and the supporting analyses and coordination comply with law and policy, and warrant approval or further recommendation to higher authority by the Commander, SPD. 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

Cost Engineering is not required for the WA as there will be no official cost estimates in the WA.

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). 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).

Planning Models

Because the availability of planning models that address salinity issues in riparian systems is limited, the NMISC developed a groundwater model to support evaluation of water budgets and groundwater flow paths, used in the Mesilla Basin Conceptual Site Model as part of the WA. Additionally, models were developed to address salinity and economics for the WA. The PDT will evaluate additional models to determine whether the models that will most effectively meet

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the needs of the plan and provide the greatest opportunity will be applied to similar efforts in the Rio Grande Basin in the future.

Consistent with the model certification requirements in EC 1105-2-412, model certification / approval will be initiated before the submittal of the draft Watershed Assessment to SPD and HQUSACE. Table 9-1 provides a list of planning models being considered.

Table 9-1 Planning Models

Model Name and Version	Brief Description of the Model and How It Will Be Applied in the WA	Certification / Approval Status
Economic Model	Model used to support relative economic benefit amongst different management alternatives. See Appendix B of CH2M HILL, 2011, for documentation. Model developed for this project and approved by Coalition	One-time use approval will be sought and coordinated with the appropriate PCX at the start of the study

Engineering Models

Similar to the planning model process, engineering models will be selected based on the detailed planning objectives that will be developed after cost share agreement execution. As the result of the planning is a preferred scenario rather than a preferred plan or alternative, the extent use of engineering models may be limited based on the WA goals. Priority will be given to USACE SET preferred models. Table 9-2 provides a list of likely engineering models to be used.

Per EC 1105-2-412, Assuring Quality of Planning Models, 31 March 2011, models that represent engineering systems, such as models used to perform hydrologic and hydraulic analyses, are engineering models and not planning models. It is the responsibility of the Engineering function to ensure that the application and proper use of the software is document in the Technical Review process.

The following engineering models are anticipated to be used in the development of the watershed management plan:

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Table 9-2 Engineering Models

Model Name and Version	Brief Description of the Model and How It Will Be Applied in the WA	Approval Status
MODFLOW-2000	New Mexico Office of the State Engineer "Draft Groundwater Flow Model for Administration and Management in the Lower Rio Grande Basin" (SSPA, 2007). Model was used to support evaluation of water budgets and groundwater flow paths, used in the Mesilla Basin Conceptual Site Model. Model developed by NMISC and preferred by Coalition	One-time use approval will be sought and coordinated with the appropriate PCX at the start of the study
Salinity Model	Salinity model used to estimate downstream reduction in salinity under various management alternatives. See Appendix B of CH2M HILL, 2011 for documentation. Model developed for this project and approved by Coalition	One-time use approval will be sought and coordinated with the appropriate PCX at the start of the study

10. REVIEW SCHEDULES AND COSTS

ATR Schedule and Cost

The estimated total cost of the ATR is \$40,000 for review of the draft WA. This includes the cost for the ATR team lead to facilitate the ATR but does not include the costs for the PDT to respond to ATR comments. It is anticipated that the ATR review will take approximately 2 weeks, PDT response will take approximately 2 weeks, and ATR back-check and comment close out will take 1 week for a total of 5 weeks of review. Table 10-1 shows the dates the DQC, ATR, and IEPR review milestones are scheduled to be completed. These dates may change based on the date the cost share agreement is executed.

Table 10-1 Rio Grande Salinity - Phase III Schedule

Task/Milestone	Completion Date	Related Activities/Description
Execute Cost Share Agreement	WACSA signed on 2 Sept 2008 and amended to add TCEQ as an additional cost-sharing partner	

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Task/Milestone	Completion Date	Related Activities/Description
	on 21 March 2012.	
PDT Kick-Off Meeting	September 2008	
Visioning Session with Rio Grande Salinity Management Coalition (Coalition) Members	September 2008	Coalition Initiates Supporting Rio Grande Basin Salinity WA
Defining Goals, Objectives, Problems, Opportunities		
Stakeholder Assessment and Involvement Plan	October 2008	Sponsors and SPA meet with Coalition members to develop collaborative approach for the WA
Rio Grande Salinity – Phase III WA Scoping Meeting	November 2008	Solicit Commission members input for defining scope of the WA
Rio Salinity Assessment	December 2009	<p>Purpose: Identify areas with elevated salinity within the Rio Grande Salinity – Phase III WA area. Identify data sources and data gaps. Gather input from Coalition to identify Socio-Political issues.</p> <p>Initial report is complete, but still needs refinement of comprehensive watershed assessment.</p>
Rio Grande Salinity Management Measures Development	July 2010	<p>Purpose: Identify salinity management measures for areas of elevated salinity levels within the WA study area. Refine Site Screening Criteria for salinity management measures. Develop simplistic Salinity Model simulating how salt moves.</p> <p>Includes subject matter experts identified by the Coalition, the Non-Federal Sponsor Vertical Chain of Command, and key State</p>

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Task/Milestone	Completion Date	Related Activities/Description
		and Federal Resource Agencies.
Update Peer Review Plan	December 2012	Peer Review Plan to be updated as needed based on the identification of alternatives to be considered
Rio Grande Salinity Watershed Assessment Scoping Meeting	August 2012	<p>Purpose: Seek consensus and official approval across sponsoring agencies and Coalition members.</p> <p>Included SPA Vertical Chain of Command, non-Federal Sponsor Vertical Chain of Command, Coalition and key State and Federal Resource Agencies</p>
Development of Conceptual Salinity Model for Specific Sites	December 2012	<p>Purpose: Complete data compendium for specific sites. Utilize screening criteria to identify areas for further investigation. Prepare technical memorandum for conceptual models. Initiate Economic Analysis.</p> <p>Includes subject matter experts identified by the Coalition, the Non-Federal Sponsor Vertical Chain of Command, and key State and Federal Resource Agencies.</p>
DQC Review	December 2012	DQC will include salinity subject matter experts as well as a USACE expert in §729 WAs.
Rio Grande Salinity Watershed Assessment Baseline Conditions Report	February 2013	
DQC Review	February 2013	DQC will include salinity subject matter experts as well as a USACE expert in §729 WAs.
Rio Grande Salinity Watershed Assessment	April 2013	This is considered 75% complete, but

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Task/Milestone	Completion Date	Related Activities/Description
AFB Preliminary Report		subject to technical review
DQC Review	April 2013	DQC will include salinity subject matter experts as well as a USACE expert in §729 WAs.
ATR	April 2013	
SPD/USACEHQ Review	May 2013	SPA will request and expedited review since this is not a decision document.
Alternatives Selection	May 2013	Similar to the Watershed Scoping Meeting, this is to seek consensus/approval from all sponsors, the Coalition, and the vertical chain of USACE. Identify salinity management/treatment projects for Coalition and non-Federal Sponsors
Rio Grande Salinity Watershed Assessment Final Report	May 2013	
Draft Rio Grande Salinity Watershed Assessment	July 2013	
DQC Review	July 2013	
SPD/USACEHQ Review	August 2013	
Final Rio Grande Salinity Watershed Assessment	September 2103	

Type I IEPR Schedule and Cost

Not Applicable

Model Certification and Approval

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The estimated cost of model certification is \$50,000 per model. It is assumed that all three models (MODFLOW 200, Salinity Model and Economic Model) will require certification or approval for a total amount of \$150,000. The model certification/approval documentation will be provided to the PCX no later than the Alternatives selection milestone and will be completed no later than the SPD/USACEHQ reviews of the Final Rio Grande Salinity Watershed Assessment. The model certification/approval process is likely to take four months. The cost and schedule will be adjusted as needed with the PCX once certifiers have been identified.

11. PUBLIC PARTICIPATION

The approved review plan will be posted on the SPA website and the ECO-PCX website. Chapter 4 of the WA outlines the public involvement plan. A detailed Public Involvement Plan (PIP) will be developed after the cost share agreement is executed. The intent of the public involvement process is to work at a public collaboration level. With this approach, public involvement will be early, often, and consistent throughout the feasibility level WA process. Consistent USACE regulations, at least one public scoping meeting will be held early in the process with a public comment meeting being held after the release of the Draft Watershed Assessment. Consistent with the transparency objectives of the USACE planning process, the review plan, final decision documents and applicable review reports will be made available to the public. The process in which they will be made available will be defined within the detailed PIP but will likely be on the plan website and available upon request.

State and Federal resource agencies may be invited to participate in the WA covered by this review plan as partner agencies or as technical members of the PDT, as appropriate. Any public comments received on the review plan, at public meetings or on draft or final reports will be provided to the review teams before they conduct their reviews.

12. REVIEW PLAN APPROVAL AND UPDATES

The SPD Commander is responsible for approving this Review Plan. The Commander's approval reflects vertical team input 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 WA progresses. SPA is responsible for keeping the Review Plan up to date. Minor changes to the review plan since the last SPD 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 SPD 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 SPA's webpage. The latest Review Plan should also be provided to the RMO and SPD.

13. REVIEW PLAN POINTS OF CONTACT

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

SPA Contact: Lynette Giesen, Project Manager: lynette.m.giesen@usace.army.mil / 505-342-3187

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Kris Schafer, Chief of Planning: Kristopher.t.schafer@usace.army.mil / (505) 342-3201

Ecosystem Restoration Planning Center of Expertise Operations Director: Jodi Creswell;
Jodi.K.Creswell@usace.army.mil / (309) 794-5448

SPD Reviewer: District Support Team Lead (415) 503-6591

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ATTACHMENT 1: TEAM ROSTERS

PDT Team Members

Name	Agency	Role	Phone #
Herman Settemeyer	TCEQ	Sponsor POC	512-239-4707
James Hogan	NMISC	Sponsor POC	505-476-3671
Beiling Liu, Ph.D.	NMISC	Hydrologist	505-383-4046
Lynette Giesen	USACE	Project Manager	505-342-3187
Patrick Gordon	Rio Grande Compact Commission	Commissioner and POC	

ATRT (TBD by Eco-PCX)

Name	Discipline	District	Phone #
TBD	ATR Lead		
TBD	Planning		
TBD	Economics		
TBD	Environmental Resources		
TBD	Cultural Resources		
TBD	Hydrology		
TBD	Hydraulic Engineering		
TBD	Geotechnical Engineering		
TBD	Engineering and Design		

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Vertical Team

Name	Discipline	Location	Phone #
Bradd Schwichtenberg	USACEHQ VT Lead	Washington, DC	202-761-1367
Paul Devitt	SPD VT Lead	San Francisco, CA	415-503-6558

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ATTACHMENT 2: SAMPLE STATEMENT OF AGENCY TECHNICAL REVIEW

COMPLETION OF AGENCY TECHNICAL REVIEW

The Agency Technical Review (ATR) has been completed for the Watershed Management Plan for the Rio Grande Basin, San Acacia, NM to Ft. Quitman, TX, §729 Watershed and River Basin Assessment (Rio Grande Salinity – Phase III). The ATR was conducted as defined in the project’s Review Plan to comply with the requirements of EC 1165-2-209 and Director of Civil Works’ Policy Memorandum #1. 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™.

SIGNATURE

Name Date
ATR Team Leader, Office Symbol

SIGNATURE

Name Date
Project Manager, USACE-CESPD-CESPA-PM-C

SIGNATURE

Name Date
RMO Representative, USACE-CESPA-PDS

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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, USACE-CESPD-PDS-P

¹ Only needed if some portion of the ATR was contracted

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ATTACHMENT 3: REVIEW PLAN REVISIONS

Revision Date	Description of Change	Page/Paragraph Number
Pending	Review Plan	All

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ATTACHMENT 4: ACRONYMS AND ABBREVIATIONS

<u>Term</u>	<u>Definition</u>	<u>Term</u>	<u>Definition</u>
AFB	Alternative Formulation Briefing	NER	National Ecosystem Restoration
ATR	Agency Technical Review	NEPA	National Environmental Policy Act
DQC	District Quality Control/Quality Assurance	PCX	Planning Center of Expertise
DX	Directory of Expertise	PDT	Project Delivery Team
EC	Engineer Circular	PMP	Project Management Plan
ER	Engineering Regulation	RMO	Review Management Organization
FRM	Flood Risk Management	SAR	Safety Assurance Review
Home District/MSD	The District or MSD responsible for the preparation of the decision document	USACE	U.S. Army Corps of Engineers
HQUSACE	Headquarters, U.S. Army Corps of Engineers	WA	Watershed Assessment
IEPR	Independent External Peer Review	WRDA	Water Resources Development Act
MSC	Major Subordinate Command		
NED	National Economic Development		