

Review Plan

JULY 2025

1. Project Summary

Project Name: Rio Salado Oeste

Location: Phoenix, Maricopa County, Arizona

P2 Number: 507954

Decision and Environmental Compliance Document Type: Integrated General Reevaluation Report and Environmental Assessment

Congressional Authorization Required: Potentially, depending upon scope of recommendation

Project Purpose(s): Aquatic Ecosystem Restoration

Non-Federal Sponsor: The City of Phoenix

Points of Public Contact for Questions/Comments on Review Plan:

District: Los Angeles District

District Contact: Project Manager, (213) 446-7274

Major Subordinate Command (MSC): South Pacific Division

MSC Contact: DST Lead, (415) 503-6558

Review Management Organization (RMO): Ecosystem Restoration Planning Center of Expertise (ECO-PCX)

RMO Contact: SPD Account Manager, (309) 794 5208

Key Review Plan Dates

Date of RMO Endorsement of Review Plan	04/02/2025
Date of MSC Approval of Review Plan	07/16/2025
Date of IEPR Exclusion Approval	N/A
Has the Review Plan changed since RMO Endorsement?	No
Date of Last Review Plan Revision	None
Date of Review Plan Web Posting	Pending

Milestone Schedule and Other Dates

	Scheduled	Actual
FCSA Execution	06/30/2023	06/30/2023
Alternatives Milestone	April 2025	04/03/2025
Tentatively Selected Plan	<i>September 2026</i>	TBD
Release Draft Report to Public	<i>November 2026</i>	TBD
Agency Decision Milestone	<i>April 2027</i>	TBD
Final Report Transmittal	<i>October 2028</i>	TBD
State & Agency Briefing	<i>December 2028</i>	TBD
Chief's Report or Director's Report	<i>March 2029</i>	TBD

*Review schedule is shown with schedule contingency

2. References

Engineer Regulation 1165-2-217 – Water Resources Policies and Authorities – Civil Works Review Policy, 1 May 2021.

Engineer Circular 1105-2-412 – Planning – Assuring Quality of Planning Models, 31 March 2011.

Planning Bulletin 2013-02, Subject: Assuring Quality of Planning Models (EC 1105-2-412), 31 March 2013.

Office of Management and Budget, Final Information Quality Bulletin for Peer Review, Federal Register Vol. 70, No. 10, January 14, 2005, pp 2664-267

The online USACE Planning Community Toolbox provides more review reference information at: <https://planning.erdc.dren.mil/toolbox/current.cfm?Title=Peer%20Review&ThisPage=Peer&Side=No>.

3. Review Execution Plan

The general plan for executing all required independent reviews is outlined in the following two tables.

Table 1 lists each study product to be reviewed. The table provides the schedules and costs for the anticipated reviews. Teams also determine whether a site visit will be needed to support each review. The decisions about site visits are documented in the table. As the review plan is updated the team will note each review that has been completed.

Table 2 identifies the specific expertise and role required for the members of each review team. The table identifies the technical disciplines and expertise required for members of review teams. In most cases the team members will be senior professionals in their respective fields. In general, the technical disciplines identified for a District Quality Control (DQC) team will be needed for an Agency Technical Review (ATR) team. Each ATR team member will be certified to conduct ATR by their community of practice. If Independent External Peer Review (IEPR) is warranted, panel membership will reflect disciplines representing the areas of expertise applicable to the review being conducted. The table is set up to concisely identify common types of expertise that may be applicable to one or more of the reviews needed for a study.

Table 1: Schedule and Costs of Reviews

Product to undergo Review	Review Level	Start Date*	End Date*	Cost	Complete
Habitat model approval	Eco PCX Approval	12/14/2023	11/19/2024	\$15,000	Yes
Local hydrology analysis	Targeted Agency Technical Review (ATR)	3/16/2026	4/3/2026	\$15,000	No
Extreme events qualitative analysis	Targeted ATR	3/16/2026	4/3/2026		No
Sediment transport and hydraulic modeling	Targeted ATR	3/16/2026	4/3/2026		No
Habitat evaluation results (habitat units for Final Array of alternatives)	Targeted ATR	12/23/2025	1/26/2026	\$15,000	No
Draft Feasibility Report / Integrated NEPA Document	PDT Review	4/13/2026	5/11/2026	N/A	No
Draft Feasibility Report / Integrated NEPA Document	District Quality Control (DQC)	5/12/2026	6/23/2026	\$30,000	No
Draft Feasibility Report / Integrated NEPA Document	Sponsor/Cooperating Agency Review	6/24/2026	8/6/2026	N/A	No
Draft Feasibility Report / Integrated NEPA Document	Public Comment under National Environmental Policy Act	8/28/2026	10/6/2026	N/A	No
Draft Feasibility Report / Integrated NEPA Document	ATR	8/14/2026	10/27/2026	\$50,000	No
Draft Feasibility Report / Integrated NEPA Document	Independent External Peer Review (IEPR)	N/A	N/A	N/A	No
Draft Feasibility Report / Integrated NEPA Document	Policy and Legal Compliance Review	8/28/2026	11/10/2026	N/A	No
Final Feasibility Report / Integrated NEPA Document	PDT Review	6/30/2027	7/7/2027	N/A	No
Final Feasibility Report / Integrated NEPA Document	DQC	7/22/2027	8/25/2027	\$25,000	No
Final Feasibility Report / Integrated NEPA Document	Sponsor/Cooperating Agency Review	8/26/2027	9/23/2027	N/A	No

Final Feasibility Report / Integrated NEPA Document	ATR	8/26/2027	10/18/2027	\$40,000	No
Final Feasibility Report / Integrated NEPA Document	Policy and Legal Compliance Review	1/3/2028	2/3/2028	N/A	No
Final Feasibility Report / Integrated NEPA Document	Release Final Report under National Environmental Policy Act	11/15/2027	1/3/2028	N/A	No
Review Management Organization (Eco-PCX) – Coordination and Participation	The Eco-PCX will participate in most key meetings including In-Progress Reviews, Issue Resolution Meetings and SMART Milestone Meetings	N/A	N/A	\$7,000	No

**Review schedule is shown without schedule contingency for planning purposes*

Table 2: Review Teams - Disciplines and Expertise

Discipline / Role	Expertise	DQC	ATR
DQC Team Lead	Extensive experience preparing Civil Works decision documents and leading DQC. The lead may serve as a DQC reviewer for a specific discipline (planning, economics, environmental, etc.).	Yes	No
ATR Team <u>Lead</u>	Professional with extensive experience preparing Civil Works decision documents and conducting ATR. Skills to manage a virtual team through an ATR. The lead may serve on the ATR team for a specific discipline (such as planning, economics, or environmental work).	No	Yes
Planning	Skilled water resources planner knowledgeable in complex aquatic ecosystem restoration planning investigations and the application of SMART principle to problem solving. Preferred reviewers with experience in arid, water-constrained regions. Experience using CE/ICA to evaluate complex ecosystem restoration alternatives.	Yes	Yes
Economics	Experience with applying theory, methods and tools used in the economic evaluation of water resources projects. Experience assessing comprehensive benefits and recreation features. Experience using CE/ICA to evaluate complex ecosystem restoration alternatives.	Yes	Yes
Environmental Resources	Experience with environmental evaluation and compliance requirements, national environmental laws and statutes, applicable Executive Orders, and other planning requirements. Experience with Endangered Species Act application, rapid assessment approaches, CE/ICA,	Yes	Yes

Discipline / Role	Expertise	DQC	ATR
	and riparian habitat restoration is required. Preferred reviewers with experience in arid, water-constrained regions.		
Cultural Resources	Experience with cultural resource survey methods, area of potential effects, National Historic Preservation Act Section 106, and state and federal laws pertaining to American Indian Tribes.	Yes	Yes
Hydrology	Engineer with experience applying hydrologic principles and technical tools to project planning, design, construction, and operation. Preferred reviewers with experience in arid, water-constrained regions, and urban environments.	Yes	Yes
Hydraulic Engineering	Engineer with experience applying hydraulic and sediment transport engineering principles and analytic tools to project planning, design, construction, and operations, particularly related to flood risk management and aquatic ecosystem restoration. Preferred reviewers with experience in arid, water-constrained regions, and urban environments, as well as sediment transport analysis.	Yes	Yes
Cost Engineering	Experience using MII cost estimating software; working knowledge of water resource project construction; capable of making professional determinations using experience.	Yes	Yes
Civil Engineering	The reviewer should have recent experience in the design of and plans for various aquatic ecosystem restoration features including structural (i.e., pumps, berms, levees), nonstructural, and nature-based.	Yes	Yes
Geotechnical Engineering	Experience with aquatic ecosystem restoration, groundwater, sediment characterization/suitability, slope stability, and seismic design.	Yes	Yes
Geology	Experience with aquatic ecosystem restoration, hydrogeology, and fluvial depositional environments.	Yes	Yes
Real Estate	Experience developing Real Estate Plans and experience in complex and multiagency acquisitions, including federally owned lands and conservation easements for implementation of Civil Works projects.	Yes	Yes
Infrastructure and Installation Resilience	A member of the Infrastructure and Installation Resilience Community of Practice knowledgeable in inland hydrologic extreme events assessment policy and practice, especially the arid southwestern region of the United States.	Yes	Yes

4. Documentation of Reviews

Documentation of DQC. Quality Control will be performed continuously. A specific certification of DQC completion will be prepared at the base conditions (existing and future), draft and final report stages. Documentation of DQC will follow the District Quality Manual and the MSC Quality Management Plan. DrChecks will be used for documentation of DQC comments. An example DQC Certification statement is provided in ER 1165-2-217, Appendix D. Documentation of completed DQC, to include the DQC checklist, will be provided to the MSC, RMO and the ATR Team leader. The ATR team will examine DQC records and comment in the ATR report on the adequacy of the DQC effort.

Documentation of ATR. DrChecks will be used to document all ATR comments, responses, and resolutions. Comments should be limited to those needed to ensure product adequacy. All members of the ATR team will use the four-part comment structure (see ER 1165-2-217, Section 5). If a concern cannot be resolved by the ATR team and PDT, it will be elevated to the vertical team to resolve using the issue resolution process in ER 1165-2-217, Section 5.9. Unresolved concerns will be closed in DrChecks by noting the concern has been elevated. ATR documentation will include an assessment by the ATR team of the effectiveness of DQC. The ATR Lead will prepare a Statement of Technical Review (see ER 1165-2-217, Section 5.11, and Appendix D), for the draft and final reports, certifying that review issues have been resolved or elevated. ATR will be certified when all concerns are resolved or referred to the vertical team and the ATR documentation is complete.

Documentation of Model Review. Planning models require compliance with EC 1105-2-412. Models developed by the Corps of Engineers are certified and models developed by others are approved. Certifications or approvals may be specific to a single study, a regional application or for nationwide application. Completion of a model review is documented in a memorandum from the Director of a Planning Center of Expertise and should accompany reporting packages for study decisions.

5. Supporting Information

Study Background

Authority

The Rio Salado Oeste Feasibility Report, completed in 2006, was prepared as an interim response to two authorities provided by Congress. The first authority is Section 6 of Public Law 761, dated June 28, 1938, known as the Flood Control Act of 1938, which reads in part as follows:

“...the Secretary of War is hereby authorized and directed to cause preliminary examinations and surveys...at the following localities: ...Gila River and tributaries, Arizona.”

The most recent authority is provided by a Resolution of the Committee on Public Works and Transportation, U.S. House of Representatives, adopted May 17, 1994 (Docket 2425) which states:

“...the Secretary of the Army is requested to review the reports of the Chief of Engineers on the State of Arizona...in the interest of flood damage reduction, environmental protection and restoration, and related purposes.”

The Rio Salado Oeste Project, which is the subject of this General Reevaluation Study, was authorized for design and construction by Section 1001 of WRDA 2007, which reads in part as follows:

“SEC. 1001. PROJECT AUTHORIZATIONS.

Except as otherwise provided in this section, the following projects for water resources development and conservation and other purposes are authorized to be carried out by the Secretary substantially in accordance with the plans, and subject to the conditions, described in the respective reports designated in this section:

...

(5) SALT RIVER (RIO SALADO OESTE), MARICOPA COUNTY, ARIZONA.—The project for environmental restoration, Salt River (Rio Salado Oeste), Maricopa County, Arizona: Report of the Chief of Engineers dated December 19, 2006, at a total cost of \$166,650,000, with an estimated Federal cost of \$106,629,000 and an estimated non-Federal cost of \$60,021, 000.”

Following the project’s design and construction authorization in 2007, the project was stopped in 2009 due to concerns from the Office of Management and Budget (OMB) and the Assistant Secretary of the Army (Civil Works) (ASA (CW)). OMB made the determination that the project was not consistent with the policies and programs of the President with ASA (CW) supporting OMB’s determination and noting that upland habitat restoration would need to be removed from the project. In 2017, the City of Phoenix requested reformulation of the project and on June 30, 2023, a Feasibility Cost Sharing Agreement (FCSA) was signed with the City of Phoenix as the nonfederal sponsor (NFS) to initiate this General Reevaluation Study.

Study Area

The study area is approximately 8 miles long extending from 19th Avenue on the east to 83rd Avenue on the west, and from Lower Buckeye Road on the north to approximately Baseline Road on the south. While this is a large study area extending beyond the riverbanks to include areas which would benefit from and potentially be impacted by the project, any implementation of project features would be associated with the river floodplain. The project implementation area extends from 19th Avenue on the east and 83rd Avenue on the west and is the area within the floodplain of the Salt River. The study area is approximately 4 miles wide and consists of approximately 20,480 acres. The project implementation area is, on average, approximately 1 mile wide and consists of approximately 3,315 acres.

Study Area Map

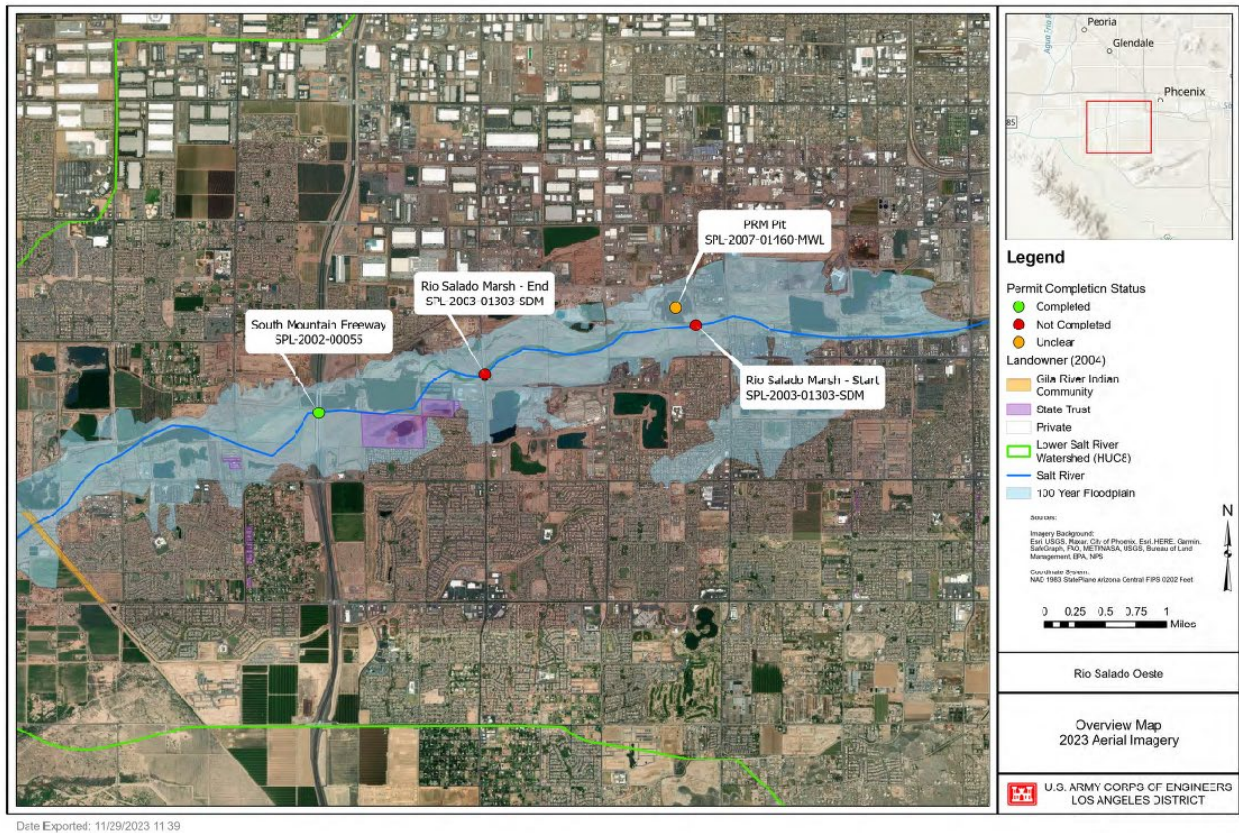


Figure 1 – Study Area Map.

Problem Statement

Historically, the Salt River supported significant biological resources including extensive riparian and marsh habitat. Diversion of water to support agriculture and urban development have resulted in severe degradation and 90% loss of functional riparian habitat along the Salt River. Modifications of the river system, such as damming and flow diversion, currently do not allow flows through the study area except during flood events, which has degraded the ecosystem. There are seven dams upstream (five on the Salt River, and two on the Verde River), including the Federally constructed Theodore Roosevelt Dam which is operated by the Bureau of Reclamation. As diversions of water increased, the perennial flows in the river ceased, causing the groundwater table to drop in some reaches of the river. These changes in the river system have adversely impacted the surface/groundwater interactions and sedimentation dynamics that are important for sustaining and regenerating riparian vegetation. In addition, land use changes, including sand and gravel mining operations, bridges, pipes, stabilization measures, and outfalls, have induced additional changes to the river channel geometry and hydrology. Today, the study area consists of a highly disturbed riverbed with minimal extant native vegetation. These changes in hydrological conditions are a primary driver of natural riparian ecosystem decline in the study area. In particular:

- The quantity of native riverine and marsh vegetation communities and related habitat have largely been eliminated as a result of the loss of perennial flow conditions, an increased depth to groundwater, and altered channel geometry, leaving only scattered remnants of habitat that once occupied the study area.
- The quality of remnant native riverine and marsh vegetation communities and related habitat has been degraded by the loss of perennial flow conditions, urban development, and domestic livestock grazing.
- Longitudinal riverine and associated habitat connectivity has been degraded due to altered hydrology in the Salt River.

Goals and Objectives

The overall goal of the study is to restore lost and degraded ecosystem structure, function, and dynamic processes of the Salt River to a less degraded, more natural condition. The planning objectives, which are developed specifically for this study, are statements of the intended steps toward achieving the study goal. Planning objectives represent desired positive changes in the future conditions.

Each planning objective is applicable to the entire Salt River study area over a 50-year period of analysis. Based on the problems and opportunities identified in the study area, planning objectives include the following:

- Restore native and sustainable riparian habitat (e.g., riparian-scrub, cottonwood-willow, active channel shrublands, and riparian mesquite bosque) within the floodplain of the study area during the period of analysis.
- Restore native and sustainable marsh habitat within the floodplain of the study area during the period of analysis.
- Restore longitudinal (upstream/downstream) habitat connectivity within the floodplain of the study area during the period of analysis.
- Develop new recreation opportunities in conjunction with ecosystem restoration connecting to existing trail networks upstream and downstream of the study area.

Future Without Project Conditions

Habitat in the study area is expected to remain degraded, with no improvements to riverine or marsh habitat expected due to the disturbed hydrology and topographic complexities within the study area's arid aquatic habitat. Ecosystem restoration efforts are underway immediately adjacent to the study area at both the upstream and downstream ends; however, without active restoration within the study area, a connected habitat corridor will not likely be possible.

Ephemeral streams and their adjacent riparian areas, especially those located in arid and semi-arid regions (like the study area), have been shown to be more sensitive to the effects of anthropogenic disturbance than their perennial stream counterparts, due in most part to generally drier hydrologic characteristics. In addition to changes in channel form, topographical variation, physical structure, and sediment yield, the geomorphic response to anthropogenic disturbance

can also have significant consequences for riparian ecosystems in arid regions. In general, human-induced changes to natural hydrological regimes in desert streams reduce temporal and spatial heterogeneity of physical patch types and corresponding plant habitats, resulting in the loss of biodiversity and homogenization of plant community composition and structure. Given the ecological importance of plant communities in desert rivers (e.g., for channel bank stabilization and wildlife habitat), there may be significant secondary impacts as well.

Anthropogenic uses, such as urbanization, superimposed on a drier climatic regime can exacerbate effects on native soils and vegetation, and may affect hydrologic and ecological functions throughout the watershed. Stability and resiliency to disturbance are important for ecological integrity, but because of the deficiency of water, the inherent fragility of these ecosystems, and highly erodible soils, arid and semi-arid region riparian ecosystems do not naturally recover quickly from human-imposed disturbance as well as perennial stream in wetter regions. Because they are less likely to recover naturally (passively), arid and semi-arid riparian ecosystems may require more aggressive active restoration strategies. Although there is some evidence to suggest that restoration of natural hydrological regimes in ephemeral stream systems like the study area may be partly sufficient to reverse such deleterious changes in plant communities, other types of restoration approaches may also be needed when natural hydrological regimes cannot be fully restored, or opportunities are limited.

Upstream dams and water diversions are expected to remain in place with possible increases to diversions as the population increases and drought continues. Sand and gravel mining operations will continue, until they are no longer viable. Urban growth will likely continue, increasing demand on the already stressed water supply and availability. According to the 2020 U.S. Census, Phoenix was the fastest growing big city in the country between 2010 and 2020.

Types of Measures/Alternatives Being Considered

Ecosystem restoration measures to be evaluated include:

- **Restore Riparian Scrub Habitat:** Restore habitat to support riparian scrub species including broom, willow, and saltbush within the low flow channel.
- **Restore Open Water Marsh Habitat:** Restore habitat to support species that require a high-water table at or near the surface including cattails, tule, and sedges within the restored channel. Because the river will not flow year-round, the open water marsh would need to be constructed specifically to retain water.
- **Restore Cottonwood/Willow Riparian Habitat:** Restore habitat to support riparian gallery forest species including cottonwood and willow trees along the riparian zone, focusing on tolerance to drought and highly varied hydrological regimes.
- **Restore Active Channel Shrublands Habitat:** Restore arid riparian habitat to support shrubs including rabbit, salt, burro, and creosote bush along the active channel, focusing on tolerance to drought and highly varied hydrological regimes.

- **Restore Riparian Mesquite Bosque Habitat:** Restore this very rare arid riparian habitat to support mesquite species in large areas over the river floodplain, focusing on tolerance to drought and highly varied hydrological regimes.
- **Restore Low Flow Channel:** Restore perennial flow, to the extent practicable based on water availability, in low flow channels to convey water in study reach and support habitat.
- **Engineer with Natural Processes:** Leverage existing topography to the maximum extent practicable; contour and regrade as necessary to ensure appropriate hydrologic conditions.

Ecosystem restoration alternatives will be evaluated and compared against the authorized plan. The alternatives to be evaluated include:

ALTERNATIVE 1 – No Action

ALTERNATIVE 2 – Maximize upstream/downstream connectivity with minimal lateral connectivity

- Maximize upstream/downstream connectivity by restoring 75-acre habitat corridor of riparian scrub, active channel shrublands, and riparian mesquite bosque with existing flows
- Leverage existing topography to the maximum extent practicable
- Minimal contouring and regrading to ensure appropriate hydrologic conditions

ALTERNATIVE 3 – Maximize upstream/downstream connectivity with minimally increased lateral connectivity

- Maximize upstream/downstream connectivity with minimally increased lateral connectivity by restoring 223-acre habitat corridor of open water marsh, cottonwood/willow, riparian scrub, active channel shrublands, and riparian mesquite bosque with minimal restoration of hydrologic function
- Leverage existing topography to the maximum extent practicable
- Minimal restoration of physical structure to increase topographic complexity through contouring and regrading to ensure appropriate hydrologic conditions

ALTERNATIVE 4 – Maximize upstream/downstream connectivity with moderately increased lateral connectivity

- Maximize upstream/downstream connectivity with moderately increased lateral connectivity by restoring 415-acre habitat corridor of open water marsh, cottonwood/willow, riparian scrub, active channel shrublands, and riparian mesquite bosque with moderate restoration of hydrologic function
- Leverage existing topography to the maximum extent practicable
- Moderate restoration of physical structure to increase topographic complexity through contouring and regrading to ensure appropriate hydrologic conditions

ALTERNATIVE 5 – Maximize upstream/downstream connectivity with moderate lateral connectivity

- Maximize upstream/downstream connectivity with moderate lateral connectivity by restoring 660-acre habitat corridor of open water marsh, cottonwood/willow, riparian scrub, active channel shrublands, and riparian mesquite bosque with moderate restoration of hydrologic function
- Leverage existing topography to the maximum extent practicable
- Moderate restoration of physical structure to increase topographic complexity through contouring and regrading to ensure appropriate hydrologic conditions

ALTERNATIVE 6 – Maximize upstream/downstream connectivity with substantial lateral connectivity

- Maximize upstream/downstream connectivity with substantial lateral connectivity by restoring 869-acre habitat corridor of open water marsh, cottonwood/willow, riparian scrub, active channel shrublands, and riparian mesquite bosque with substantial restoration of hydrologic function
- Leverage existing topography to the maximum extent practicable
- Substantial restoration of physical structure to increase topographic complexity through contouring and regrading to ensure appropriate hydrologic conditions

ALTERNATIVE 7 – Maximize upstream/downstream connectivity with maximum lateral connectivity

- Maximize upstream/downstream connectivity with maximum lateral connectivity by restoring 1,126-acre habitat corridor of open water marsh, cottonwood/willow, riparian scrub, active channel shrublands, and riparian mesquite bosque with maximum restoration of hydrologic function
- Leverage existing topography to the maximum extent practicable
Maximum restoration of physical structure to increase topographic complexity through contouring and regrading to ensure appropriate hydrologic conditions

Estimated Cost/Range of Costs

Costs of alternatives are unknown at this time but given the limits on water availability, costs are anticipated to be under \$200 million.

6. Models to be Used in the Study

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 are any models and analytical tools used 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 following planning models may be used to develop the decision document:

Table 3: Planning Models.

Model Name and Version	Brief Model Description and How It Will Be Used in the Study	Certification / Approval
IWR Planning Suite 2.0.9	The IWR Planning Suite is a water resources investment decision support tool originally built for the formulation and evaluation of ecosystem restoration alternative plans; however, it is now more widely used by all USACE business lines for evaluation of actions involving monetary and non-monetary cost and benefits. It will be used to help inform the selection of the NER plan.	Certified
USACE Regional Economic Systems (RECONS 2.0)	RECONS is designed to provide accurate and defensible estimates of regional economic impacts and contributions associated with Corps projects, programs, and infrastructure across Corps Civil Works business lines. Regional economic impacts and contributions are measured as economic output, jobs, income, and value added.	Certified
Episodic Riverine Module of California Rapid Assessment Model (CRAM)	We will be using Episodic Riverine Module of CRAM (California Rapid Assessment Method). It is intended to be used in context with the User's Manual of CRAM (ver. 6.1; CWMW 2013). It was developed as a modification of the field book for riverine wetlands (ver. 6.1), termed the standard riverine CRAM module. The episodic riverine CRAM module is based on the fundamental assumptions and relationships between condition and function shared between all CRAM modules. Four universal attributes of condition are recognized: (1) Buffer and landscape context; (2) Hydrology; (3) Physical structure; and (4) Biotic structure. However, the metrics comprising these attributes have been adapted to account for the unique characteristics of predominantly dry episodic waterways. CRAM is a cost-effective and scientifically defensible rapid assessment method for monitoring and assessing the ecological conditions of wetlands throughout California. It takes less than half a day to assess a wetland area, and is designed evaluate the condition of the	Certified by Eco PCX on 11/19/2024

	wetland based on its landscape setting, hydrology, physical structure and biological structure. Because the methodology is standardized for over seven types of wetlands, ecological condition scores can be compared at the local, regional and statewide landscape scales. CRAM can also be used to assess the performance of compensatory mitigation projects and restoration projects. The easy-to-use, online data entry forms ensures that all of the appropriate site information and field data associated with CRAM assessments can be archived online and access by environmental managers, planners, and stakeholders to inform wetland management and planning decisions. The ability to draw the CRAM assessment area online using an aerial image of the site, makes it easy for CRAM practitioners to enter their site information making it available on EcoAtlas (if allowed by the landowner).	
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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. The professional practice of documenting the application of the software and modeling results will be followed. The USACE Scientific and Engineering Technology Initiative has identified many engineering models as preferred or acceptable for use in studies. These models should be used when appropriate. For example, HH&C models need to comply with the requirements of HH&C CoP Enterprise Standard 08101.

These engineering models may be used to develop the decision document:

Table 4: Engineering Models.

Model Name and Version	Brief Model Description and How It Will Be Used in the Study	Approval Status
HEC-RAS 6.6 (Hydraulic Analysis Software)	The software performs 1-D steady and unsteady flow river hydraulics calculations and has capability for 2-D (and combined 1-D/2-D) unsteady flow calculations. It will be used for steady flow analysis to evaluate the future without-project and future with-project conditions, as well as potentially be utilized for sediment transport analysis.	CoP Preferred

7. Factors Affecting Level and Scope of Review

All planning products are subject to the conduct and completion of District Quality Control. Most planning products are subject to Agency Technical Review and a smaller sub-set of products may be subject to Independent External Peer Review and/or Safety Assurance Review. Information in this section helps in the scoping of reviews through the considerations of various potential risks.

Objectives of the Reviews

The intended outcome of reviews with particular attention to key technical considerations and associated risks likely to be encountered during the study and/or in later phases of the project are documented below:

- Reviews should assess how well a given alternative would perform under a range of variable riverine flow scenarios, especially low flow scenarios (ex. drought, flood event, etc.).
- Ensure technically sound decision documents.
- Ensure compliance with all necessary laws, including the National Environmental Policy Act.
- Assess that models are producing accurate outputs that may be used to evaluate performance of alternative plans.

Assessing the Need for IEPR

Mandatory IEPR Triggers

- Has the Chief of Engineers determined the project is controversial? *No*
- Has the Governor of an affected state requested an IEPR? *No*
- Is the cost of the project more than \$200 million? *No*

Assessing Other Risk Considerations

- Will the study likely be challenging? If so, describe how?

The main challenge in this study is that the water source assumed in the 2006 report is no longer available, which may limit the array of alternatives. Otherwise, there is generally strong public support for this project, and the other Corps projects along the river have been well received. The design of this aquatic ecosystem restoration will build upon lessons learned from similar projects upstream and downstream of the study area.

- Provide a preliminary assessment of where the project risks are likely to occur and assess the magnitude of those risks.

Currently, there are five main anticipated risks.

- The first anticipated risk to the project is a **lack of water availability**, which may be exacerbated by the ongoing drought.
 - Limited water availability may affect restoration opportunities. This risk will be mitigated by incorporating drought tolerant species to the maximum extent practicable.

- The limited choice of water sources poses a problem because at least one source has historically been a point of contention for the tribe with adjacent property, Gila River Indian Community (the Community). Based on the information from previous USACE projects and knowledge from USACE team members, it is understood that a cultural practice of the Community is considered to be in conflict with the use of effluent water, particularly if that water can come on to their property (held in trust by Bureau of Indian Affairs). During past projects, USACE team members have made efforts to educate all impacted parties on the quality of effluent water that could be used, but the PDT believes these efforts have not shifted the position of the Community, as their concerns are based on a cultural practice rather than a concern about the quality of the water. At this time the Community is not likely to shift in their position. The PDT is considering a full range of options in relation to this issue, including the possibility of cultural mitigation in the case that this risk cannot be mitigated. It is possible the eventual water source will not be effluent water, meaning that this risk will not be applicable. In an effort to better prepare for mitigating for this risk, the PDT is developing a tribal communication plan to address the concerns of the four tribes identified as potentially having an interest in the project. The PDT is proactively working with Counsel to understand the rights of the Community and incorporate this understanding into the development of alternatives. The PDT has created a more active role for the district tribal liaison in the process to improve communication with the Community. The PDT will also consult with the TNTCX as appropriate.
- The second anticipated risk is that **infrequent high-water events may pose a threat to the long-term viability** of some measures. Additionally, it poses a risk to O&M efforts. This risk to restored vegetation will be mitigated through incorporation of hydraulic analysis to ensure the long-term survival of restoration features, as well as careful consideration of the plant palette to ensure a mix of species that can tolerate high flows such as the use of seeds from areas with similar conditions to help ensure better survivability rates. The PDT, in coordination with the ECO-PCX, will identify opportunities to manage this risk through the development of a robust adaptive management plan and O&M strategy”.
- The third anticipated risk is related to **the presence of active and inactive sand and gravel mining within the river channel**, which present a risk for streambed stability while presenting an opportunity for potential storage and habitat locations. This third risk will be mitigated through incorporation of hydraulic and sedimentation analyses to ensure the long-term survival of restoration features.
- The fourth anticipated risk is related to **potential presence of contaminants within the study area**. There is an existing brownfield that has been identified since the 2006 report. Known contaminants are agricultural runoff or from industrial or municipal sources. In response to this anticipated risk, one of the initial steps is for the NFS to perform a Modified (Limited) Phase I Environmental Site Assessment (ESA), to include a records search and limited site inspections to understand and document site conditions. It has been agreed upon with the Sponsor that the Phase I and Phase II ESA, if a Phase II is needed, will be performed by the Local Sponsor as work-in-kind.
- The fifth anticipated risk is related to **land ownership in the study area**. There is a patchwork of ownership in the study area, including land owned by another federal agency.

This is a study risk because USACE cannot restore land owned by another federal agency, with some exceptions. Additionally, there are private landowners and ownership at state, county and/or city level. Real estate will need continued coordination to ensure we have a supportable plan with fee ownership and title.

- Is the project likely to be justified by life safety or is the study or project likely to involve significant life safety issues? Briefly describe the life risk, including the District Chief of Engineering's assessment as to whether there is a significant threat to human life associated with aspects of the study or failure of the project or proposed projects.

No, the project will not be justified by life safety issues and is not anticipated to involve life safety issues. The census tracts immediately surrounding the river in this area do not score high on the flood risk indicator in CEJST. Alternatives will be evaluated through hydraulic analysis to ensure they do not increase flood risk or introduce a life safety risk. At the Tentatively Selected Plan (TSP) milestone, an assessment of life safety issues will be revisited based on the features of the TSP and the appropriate risk management organization will be consulted.

- Is the information in the decision document or anticipated project design likely to be based on novel methods, involve innovative materials or techniques, present complex challenges for interpretation, contain precedent-setting methods or models, or present conclusions that are likely to change prevailing practices? If so, how?

We do not expect the decision document or anticipated project design to be based on novel methods, involve innovative materials or techniques, present complex challenges for interpretation, contain precedent-setting methods or models, or present conclusions that are likely to change prevailing practices.

Does the project design require redundancy, resiliency, and/or robustness, unique construction sequencing, or a reduced or overlapping design/construction schedule? If so, how?

This will be determined after a Tentatively Selected Plan is identified. Prior to the start of construction on the project, a construction management plan will be developed covering all aspects of construction, including quality controls, quality assurance, contractor submittal inspections, and all other associated documentation requirements.

- Is the project expected to have more than negligible adverse impacts on scarce or unique tribal, cultural, or historic resources? If so, what are the anticipated impacts?

No. While there has not been a comprehensive cultural resources survey of the study area, those portions that have been surveyed are characterized by the lack of prehistoric sites and a very low-density of historic-era sites and isolated artifacts, most of which relate to recreational development and use of the area during the mid-twentieth century. These resources are unlikely to be eligible for the National Register of Historic Places. There may be resources of cultural and/or religious significance to tribes located in the study area; however, the Corps is working with the tribes during the development of the alternatives to identify if these types of tribally significant properties are

present and to avoid adverse impacts if they are. Proposed project activities are within the active channel of the Salt River where no intact subsurface cultural deposits would be expected.

- Is the project expected to have substantial adverse impacts on fish and wildlife species and their habitat prior to the implementation of mitigation measures? If so, describe the impacts?

We do not expect substantial adverse impacts to fish and wildlife species of importance. An Environmental Assessment that will analyze all existing conditions of all pertinent resources and impacts to those resources as well as outline environmental compliance and commitments will be drafted for the study.

- Is the project expected to have, before mitigation measures, more than a negligible adverse impact on an endangered or threatened species or their designated critical habitat? If so, what are the anticipated impacts?

We do not expect such adverse impacts.

8. Risk Informed Decisions on Level and Scope of Review

Targeted ATR. Will a targeted ATR be conducted for the study? **Yes.** Targeted ATRs will be conducted for Hydraulic Modeling and Habitat Modeling efforts prior to the TSP Milestone.

IEPR Decision. This study does not meet the mandatory criteria requiring IEPR, as defined by Section 2034 of WRDA 2007, as amended: the Chief of Engineers has not determined that the project is controversial, the governor has not requested IEPR, and the project cost is not anticipated to be greater than \$200 million. Further, no other agency has requested IEPR be conducted on the study, and the study is not anticipated to pose significant life safety concerns, utilize novel methods, address complex challenges, use precedent setting methods or models, nor change prevailing practices. For these reasons, IEPR is not recommended for this study.

Safety Assurance Review. Safety Assurance Reviews are managed outside of the USACE and are conducted on design and construction products for hurricane, storm and flood risk management projects, or other projects where existing and potential hazards pose a significant threat to human life. In some cases, significant life safety considerations may be relevant to planning decisions. These cases may warrant the development of relevant charge questions for consideration during reviews such as ATR or IEPR. In addition, if the characteristics of the recommended plan warrant a Safety Assurance Review, a panel will be convened to review the design and construction activities on a regular schedule before construction begins and until construction activities are completed.

Decision on Safety Assurance Review. Safety Assurance Review is not anticipated at this time for a potential future project resulting from this Aquatic Ecosystem Restoration study, as the study's objective is not addressing a life safety risk. Restoration alternatives will be evaluated through hydraulic analysis to ensure flood and life safety risks are not increased. This interim decision should be revisited as the study approaches the design phase.

9. Policy and Legal Compliance Review

Policy and legal compliance review of draft and final planning decision documents is delegated to the MSC (see Director's Policy Memorandum 2019-01).

(i) Policy Review.

The policy review team is identified through the collaboration of the MSC Chief of Planning and Policy and the HQUSACE Chief of the Office of Water Project Review. The makeup of the Policy Review team will be drawn from Headquarters (HQUSACE), the MSC, the Planning Centers of Expertise, and other review resources as needed.

- The Policy Review Team will be invited to participate in key meetings during the development of decision documents as well as SMART Planning Milestone meetings. These engagements may include In-Progress Reviews, Issue Resolution Conferences or other vertical team meetings plus the milestone events.
- The input from the Policy Review team should be documented in a Memorandum for the Record (MFR) produced for each engagement with the team. The MFR should be distributed to all meeting participants.
- Teams may choose to capture some of the policy review input in a risk register if appropriate. These items should be highlighted at future meetings until the issues are resolved. Any key decisions on how to address risk or other considerations should be documented in an MFR.

(ii) Legal Review.

Representatives from the Office of Counsel will be assigned to participate in reviews. Members may participate from the District, MSC and HQUSACE. The MSC Chief of Planning and Policy will coordinate membership and participation with the office chiefs.

- In some cases, legal review input may be captured in the MFR for the particular meeting or milestone. In other cases, a separate legal memorandum may be used to document the input from the Office of Counsel.

Each participating Office of Counsel will determine how to document legal review input.

10. Public Comment

This Review Plan will be posted on the District's website. Public comments on the scope of reviews, technical disciplines involved, schedules and other considerations may be submitted to the District for consideration. If the comments result in a change to the Review Plan, an updated plan will be posted on the District's website.

11. Documents Distributed Outside the Government

For information distributed for review to non-governmental organizations, the following disclaimer shall be placed on documents:

“This information is distributed solely for the purpose of pre-dissemination review under applicable information quality guidelines. It has not been formally disseminated by USACE. It does not represent and should not be construed to represent any agency determination or policy.”

12. District Concurrence

We the undersigned concur in the review plan, dated 16 July 2025, for the Rio Salado Oeste General Reevaluation Study.

DARIA MAZEY

Los Angeles District Planning Chief (Acting)

PAUL UNDERWOOD, JR

Los Angeles District Engineering Chief