Review Plan
June 2026

1. Project Summary

Project Name: J Bennett Johnston Waterway, 12-FT Channel Feasibility Study

Location: Caddo, Bossier, Red River, Natchitoches, Grant, Rapides, and Avoyelles Parish in Louisiana.

Decision and Environmental Compliance Document Type: Feasibility Report

Congressional Authorization Required: YES

Project Purpose(s): Navigation

Non-Federal Sponsor: Red River Waterway Commission and Louisiana Department of Transportation & Development

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

District: Vicksburg District, U.S. (MVK)
District Contact: RPEDS Planner, 504-862-1014

Major Subordinate Command (MSC): Mississippi Valley Division
MSC Contact: MR&T Environmental Program Manager, (601) 634-5935

Review Management Organization (RMO): Mississippi Valley Division
RMO Contact: MR&T Environmental Program Manager, (601) 634-5935

Key Review Plan Dates

Date of RMO Endorsement of Review Plan	*23 January 2025*
Date of MSC Approval of Review Plan	*24 April 2025*
Has the Review Plan changed since RMO Endorsement?	*Review dates adjusted*
Date of Last Review Plan Revision	*June 2026*
Date of Review Plan Web Posting	*June 2026*

Milestone Schedule and Other Dates

	Scheduled	Actual
FCSA Execution	11 June 2024	11 June 2024
Alternatives Milestone	9 September 2024	17 September 2024
Tentatively Selected Plan	22 July2025	22 July2025
Release Draft Report to Public	20 October 2025	20 October 2025
Command Validation Milestone	4 March 2026	4 March 2026
Final Report Transmittal (District to MVD)	11 December 2026	(enter date)
Final Report Transmittal (MVD to HQ)	11 March 2027	(enter date)
State & Agency Briefing	11 April 2027	(enter date)

Chief's Report or Director's Report	11 June 2027	(enter date)

2. References

Engineer Regulation 1165-2-217 – Water Resources Policies and Authorities – Civil Works Review Policy, 2 September 2024.

Engineering Regulation 1110-1-8168-Roles and Responsibilities of the Inland Navigation Design Center of Mandatory Center of Expertise-29 July 2016
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.

Vicksburg District, Engineering and Construction Division, Quality Management System QC/QA Policy for Civil Works Engineering and Design Products, December 2022

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. 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.

Any physical modeling performed by Engineering Research and Development Center (ERDC) will be reviewed internally by ERDC, as well as by Inland Navigation Design Center (INDC), prior to publication of physical modeling Technical Report. The Project Delivery Team (PDT) will be involved throughout the physical modeling process and should perform in progress reviews of work by assessing progress reports provided by ERDC, meeting regularly, and performing model site visits.

INDC will provide provide guidance and Quality Assurance (QA) and/or Quality Control (QC) reviews to Vicksburg District Structures Section in analysis of updated impact loading to locks and

approach walls. They will also provide guidance and QA and/or QC reviews on development, testing and reporting of physical model along with the proposed deviation request for sill height clearance for locks 1 and 2. INDC will coordinate with the RMO, the Planning Center of Expertise-Inland Navigation (PCX-IN), on the identification of ATR members relevant to the engineering analysis conducted on the lock structures. In addition to INDCs' participation in reviews, INDC will also

(1) Provide support as needed on other Hydraulics and Hydrology tasks.
(2) Provide support for any efforts related to the locks throughout the study phases.
(3) Assist with the structural analysis.

Table 1: Schedule and Costs of Reviews

Product to undergo Review	Review Level	Site Visit	Start Date	End Date	Cost	Complete
Draft Feasibility Report / EA	District Quality Control (DQC)	No	25 September 2025	9 October 2025	$70,000	No
Draft Feasibility Report / EA	Policy and Legal Compliance Review	No	27 October 2025	27 November 2025	NA	No
Draft Feasibility Report / EA	Public Comment under National Environmental Policy Act	No	27 October 2025	27 November 2025	NA	No
Draft Feasibility Report / EA	ATR	No	27 October 2025	27 November 2025	$70,000	No
Final Feasibility Report / EA	DQC	No	17th June 2026	31st July 2026	$75,000	No
Final Feasibility Report / EA	ATR	No	7th August 2026	11th September 2026	$70,000	No
Final Feasibility Report / EA	Policy and Legal Compliance Review	No	14th September 2026	6th November 2026	NA	No
Review Management Organization – Coordination and Participation	An RMO will participate in most key meetings including In-Progress Reviews, Issue Resolution Meetings and SMART Milestone Meetings	No	NA	NA	$5,000	No

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 Lead	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 planning investigations and the application of SMART principle to problem solving.	Yes	Yes
Economics	Experience with applying theory, methods and tools used in the economic evaluation of water resources projects.	Yes	Yes
Environmental Resources	Experience with environmental evaluation and compliance requirements, national environmental laws and statutes, applicable Executive Orders, and other planning requirements.	Yes	Yes
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
Hydraulic Engineering	Engineer with experience applying hydraulic engineering principles and analytic tools to project planning, design, construction, and operation. This member could also be the River Engineer as well. Hydraulic modeling experience using HEC-RAS is required. Experience with performing statistical analysis of hydrologic and hydraulic data for project planning, design, construction, and operation. ATR members are required to have experience with navigation projects and need to be CERCAP and INDCoP certified.	Yes	Yes
Geotechnical	Experience applying geotechnical engineering principles and analytic tools to project Experience with navigation projects is preferred. ATR members are required to have experience with navigation projects and need to be CERCAP and INDCoP certified	No	Yes
Structural Engineering	Experience applying structural engineering principles and analytic tools to project planning, design, construction, and operation. Experience with navigation projects is preferred. ATR members are required to have experience with navigation projects and need to be CERCAP and INDCoP certified	Yes	Yes
River Engineering	Experience applying river engineering principles and analytic tools to project planning, design, construction, and operation. This member could also be the Hydraulic Engineer as well. Experience with dike design and/or modeling, dredging, knowledge of locks and dams is required. Experience with navigation projects is preferred. ATR members are required to have experience with navigation projects and need to be CERCAP and INDCoP Certified.	Yes	Yes

Cost Engineering	Experience using cost estimation software; working knowledge of water resource project Construction as well as dredging; capable of making professional determinations using experience.	Yes	Yes
Operations	Extensive experience in operations related to navigation. Knowledge of both dredging and lock and dam structures is preferred. ATR members are required to have experience with navigation projects and need to be CERCAP and INDCoP certified	Yes	Yes
Real Estate	Experience developing Real Estate Plans and experience in real estate fee/easement acquisition for implementation of Civil Works projects.	Yes	No
Infrastructure and Installation Resilience	A member of the Infrastructure and Installation Resilience Community of Practice knowledgeable in methods and tools related to infrastructure resilience (prepare, absorb, recover, and adapt) for water resources projects. Subject matter expert recognized by the IIR Leadership and certified to perform technical review in CERCAP	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 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 Authority

This study effort is authorized by Section 1201 (3) WRDA 2018, P.L. 115-270, 23 October 2018. The Secretary is authorized to conduct a feasibility study for the following projects for water resources development and conservation and other purposes, as identified in the reports titled "Report to Congress on Future Water Resources Development" submitted to Congress on March 17, 2017, and February 5, 2018, respectively, pursuant to section 7001 of the Water Resources Reform and Development Act of 2014 (33 U.S.C. 2282d) or otherwise reviewed by Congress: (3) J. BENNETT JOHNSTON WATERWAY, LOUISIANA.—Project for navigation, J. Bennett Johnston Waterway, Louisiana.

Project Area

The J. Bennett Johnston Waterway is in the central and northwestern part of Louisiana. The project

area includes portions of the Red River RM 0, intersection of Mississippi River and Red River, to RM 228 Shreveport, LA. Within the project area, there are five Lock & Dams that control vessel traffic within the Red River: Lindy C. Boggs Lock & Dam, John H. Overton Lock & Dam, Lock & Dam 3, Russell B. Long Lock & Dam, Joe D. Waggonner Lock & Dam.

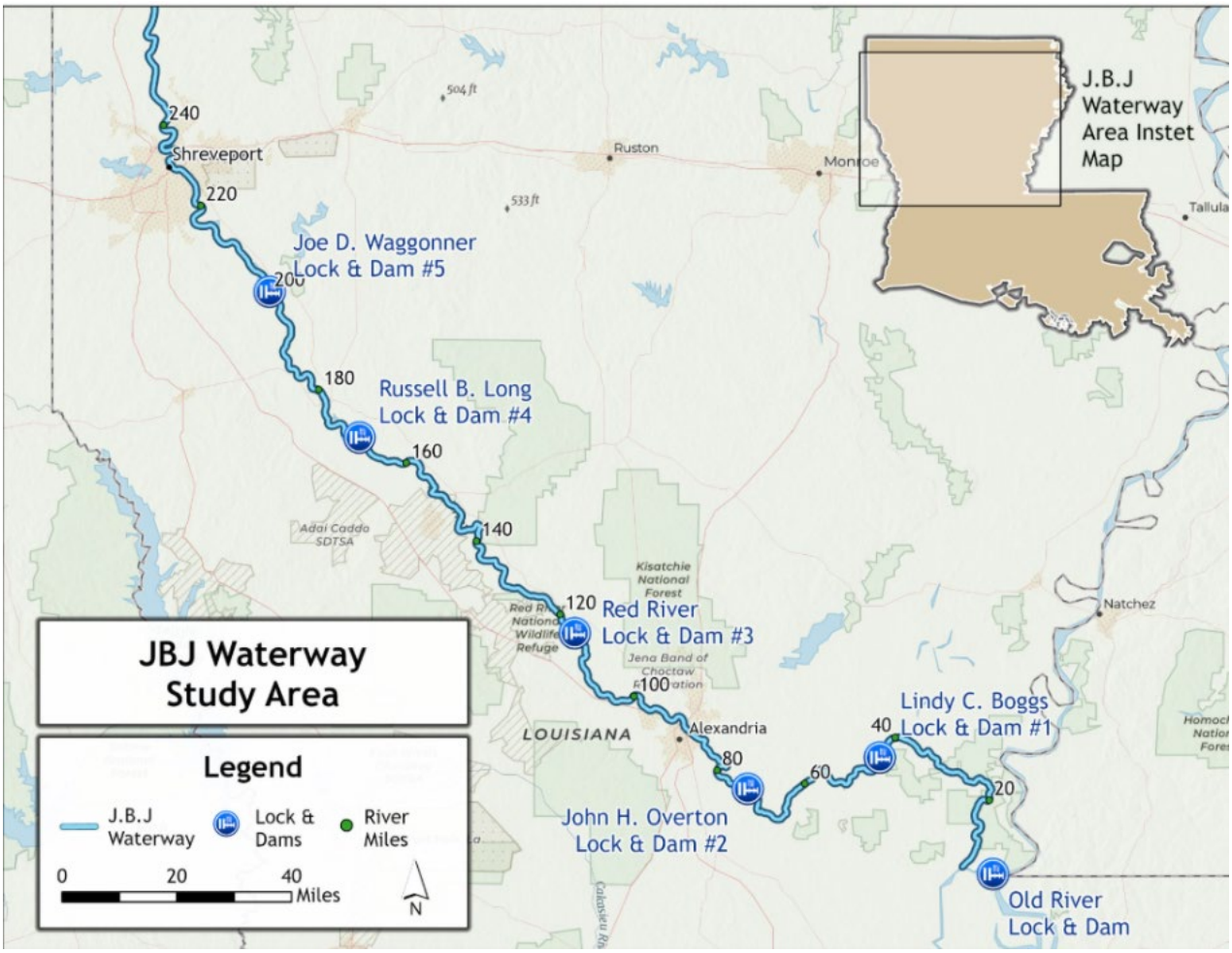

Figure 1 – Study Area Map.

Problem Statement

The current authorized navigation channel for the J. Bennett Johnston Waterway is 9 ft by 200 ft. Currently, barges moving from the Mississippi River to the Red River must be light loaded for 9-ft. Increasing the channel depth from 9 feet to an authorized 12 foot depth, as are the adjacent waterways, would increase the carrying capacity of barges and reduce the waterborne rates to the industries and allow barges to carry over 30% more per trip, which provides transportation savings, a National Economic Development benefit.

Goals and Objectives

The goal of the J Bennett Johnston Waterway, 12-FT Channel Feasibility Study is to identify a recommended plan to improve the navigational transportation within the Red River and the five the

lock & dams between RM 0 to RM 228: Lindy C. Boggs, John H. Overton, Lock & Dam 3, Russell B. Long, Joe D. Waggoner

Future Without Project Conditions

Commercial transportation is currently being impacted due to the depth of the channel. Due to the restricted channel depth, light loading of commercial vessels within the J Bennett Johnston Waterway would still have to occur to reach certain ports within the waterway in the absence of the proposed project. Military operations would continue to miss opportunities for increasing efficiency and increasing redundancy for times of disaster. The inability to use the channel at deeper navigation depths would hinder National Security enhancements by hindering an increased carrying capacity for military movements at Fort Polk and Barksdale air force base. A 9-FT channel, as opposed to a 12-FT channel also suppresses the growth and flourishment of industries that directly contribute to critical U.S infrastructure, such as steel, etc.

Types of Measures/Alternatives Being Considered

This study will formulate, evaluate, and compare several alternatives to address transportation issues within the J. Bennett Johnston Waterway. The measures will include structural and nonstructural alternatives. These alternatives will be formulated for navigational objectives. Table 3 documents the initial array of alternatives. Table 4 presents the final array of alternatives that will be evaluated for plan selection.

Table 3: Initial Array of Alternatives

Alternatives	Structural/Nonstructural	Status
No Action	n/a-	Active-
Modify Existing 5 Locks and Dams	Structural	Inactive
Construct 5 New Locks and Dams	Structural	Inactive
Modify Existing 2 Locks: Boggs and Overton (The two southern most locks on Red River)	Structural	Inactive
Construct 2 New Locks: Boggs and Overton (The two southern most locks on Red River)	Structural	Inactive
Obtain a waiver for depth over miter gate sill and draft restrictions	Nonstructural	Inactive

Obtain a waiver for depth over miter gate sill and draft restrictions, varying combinations of construction dredging, dike improvements, new dikes through mile 236	Structural/Nonstructural	Inactive
Obtain a waiver for depth over miter gate sill and draft restrictions, varying combinations of construction dredging, dike improvements, new dikes through pool 2	Structural/Nonstructural	Inactive
Obtain waiver for depth over miter gate sill and Draft Restrictions, Raise the Pool of Lock and Dam 1	Structural/Nonstructural	Active

Obtain a waiver for depth over miter gate sill and draft restrictions, varying combinations of construction dredging, dike improvements, through mile 236 were carried forward into the final array. Upon reviewing the various combinations of dredging, channel improvements, and channel segmentation, this strategy produced the following alternatives

Table 4: Final Array of Alternatives

Alt. #	**Alternative Description**
1	No Action
3	Draft restrictions, Deviation, Dredging at 12-FT
3a	Draft restrictions, Deviation, Improvement of dikes 12ft,
3b	Draft restrictions, Deviation, New dikes 12ft,
3c	Draft restrictions, Deviation, Improvement of dikes + high priority new dikes 12FT
3ab	Draft restrictions, deviation, New dikes &improvement of dikes 12ft

Estimated Cost/Range of Costs

Preliminary calculations for achieving a 12 ft channel authorization are $4,393,000 in annual benefits. First Cost of the TSP is currently $52,177,000.

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 5: Planning Models

Model Name and Version	Brief Model Description and How It Will Be Used in the Study	Certification / Approval
RECONS 2.0	*The U.S. Army Corps of Engineers (USACE) Regional Economic System (RECONS) is a USACE-certified regional economic model, designed to provide accurate and defensible estimates of regional economic impacts and contributions associated with USACE projects, programs, and infrastructure. Regional economic impacts and contributions are measured as economic output, jobs, income, and value added. Estimates are provided simultaneously for three levels of geographic impact area: local, state, and national.*	*Certified*
Economic Spreadsheet Model	*Excel based model will calculate transportation costs from different alternatives, primarily deepening the Red River from 9ft up to 12ft."*	*Single use approval required*

EC 1105-2-412 does not cover engineering models used in planning. The responsible use of well-known and proven USACE developed and commercial engineering software will continue. 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 6: Engineering Models

Model Name and Version	Brief Model Description and How It Will Be Used in the Study	Approval Status
HEC-RAS v. 6.5.1(River Analysis System)	*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 unsteady flow analysis to evaluate the existing, future without-project, and future with-project conditions. It may be used to evaluate velocity and conveyance around dikes.*	*CoP Preferred*
HEC-DSS v. 3.4.15 (Data Storage System)	*This software is a graphical user interface program for viewing, editing, and manipulating data in the HEC Data Storage System (HEC-DSS) database files. With HEC-DSSVue, you may plot, tabulate, and edit data, as well as manipulate data with over fifty mathematical functions. Along with these functions, HEC-DSSVue provides several utility functions that allow you to enter datasets into a database, rename dataset names, copy data sets to other HEC-DSS database files, and delete datasets. This tool will primarily be used for storing data and executing statistical analyses on river stages and flows.*	*CoP Preferred*
SLAT (Sea Level Analysis Tool)	*The Sea Level Analysis Tool (SLAT) is a user-friendly web application that enables users to visualize observed sea level data, compare observations to projected sea level change, and estimate when tidal and extreme water levels will intersect with elevation thresholds related to local infrastructure (e.g., roads, power generating facilities, dunes). This tool will be used for the Infrastructure and Installation Resilience Assessment.*	*CoP Preferred*
HEC-SSP v. 2.3(Statistical Software Package)	*This software allows users to perform statistical analyses of hydrologic data. The current version of HEC-SSP can perform flow frequency analyses based on Bulletin 17C (England, et al., 2019), generalized frequency analyses, volume frequency analyses, duration analyses, coincident frequency analyses, curve combination analyses, balanced hydrograph analyses, distribution fitting analyses, mixed population analyses, correlation analyses, and record extension analyses. It will be used to perform duration analyses on river stages and flows, and other analyses as required.*	*CoP Preferred*
CWVAT (Civil Works Vulnerability Assessment Tool)	*The USACE Screening-Level Civil Works Vulnerability Assessment Tool (CWVAT) analyzes hazard exposure for the entire United States at the USGS HUC8 watershed level. The tool contains maps, visualizations, and tables designed to evaluate the ways in which a USACE project, or portfolio of projects, might be impacted by natural hazards as part of an overall risk assessment. Vulnerability is conceptualized as being comprised of exposure, sensitivity, and adaptive capacity. This tool will be used for the Infrastructure and Installation Resilience Assessment*	*CoP Preferred*
STAAD Pro (Connect Edition v22)	*This structural modeling system will be used to analyze forces acting on the Lock & Dam approach structures.*	*CoP Preferred*

CHAT (Climate Hydrology Assessment Tool)	*CHAT allows users to visualize annual streamflow, precipitation, and temperature time series model outputs and to perform simulated trend analysis for these annual time series. Additionally, the tool provides a visualization of epoch-based differences in simulated, monthly and annual historic versus future period streamflow, precipitation and temperature model outputs. The CHAT includes robustness metrics which gives users insight into the inter-model robustness of the change projected for a selected variable. Robustness metrics provide an assessment of whether most GCMs agree on the direction of the future trend and whether most models agree that the future trend is significant relative*	*CoP Preferred*
TST (Time Series Toolbox)	*The Time Series Toolbox enables users to perform preliminary analysis on either user uploaded time series data or preloaded United States Geological Survey (USGS) streamflow gage data. the tool enables more consistent, repeatable, and efficient time series analysis. The tool can detect nonstationarities in the historical record to help the user segment the record into datasets whose statistical properties can be considered stationary. This tool will be used for the Infrastructure and Installation Resilience Assessment.*	*CoP Preferred*
GROUP v2019	*This is a structural pile analysis software that will be used to analyze the existing pile foundation of the lock walls and approach structures.*	*CoP Preferred*
Palisade @RISK	*Statistical analysis software used to predict barge impact forces based off of historical river traffic data.*	*CoP Preferred*
MicroStation Connect Edition	*This is a 3D modeling software that will be used to model different structural aspects of the Lock & Dam sites.*	*CoP Preferred*
Physical Model	*Construction of a 1:25 Froude scale physical model of the lock chamber(s) including the miter gate sill and the lock's filling and emptying system. The physical model will be used to investigate the depth of water over the miter gate sill and lock chamber floor and operations within the lock that would allow vessels and tows to safely enter and exit the lock chamber under existing conditions. The physical model is needed to support a deviation for the 1.5 x draft depth requirement.*	*CoP Preferred*

TRACES MII 4.4	*MII provides an integrated cost estimating system (software and databases) that meets the U.S. Army Corps of Engineers (USACE) requirements for preparing cost estimates. Now being used by many of the USACE districts, it will soon be a requirement for all USACE districts to use MII, as well as all architect-engineering (A-E) firms performing design work for the USACE. II is a stand-alone software application used primarily by the USACE cost engineering community for the development of detailed construction costs estimates for military, civil works, and environmental remediation projects.*	*CoP Preferred*
Oracle Crystal Ball 11.1.3.0.0	*Oracle Crystal Ball is a spreadsheet-based application for risk measurement and reporting, Monte Carlo simulation, time-series forecasting and optimization. Crystal Ball provides a realistic and accessible way of modeling uncertainty enabling you to measure and report on the risk inherent in your key metrics. It is utilized by the cost engineering community during the Cost and Schedule Risk Analysis to probabilistically model uncertainties and assign contingency values to project cost and schedule*	*CoP Preferred*

Table 7: Environmental Models

Model Name and Version	Brief Model Description and How It Will Be Used in the Study	Approval Status
Habitat Evaluation Procedures (HEP) Gray Squirrel HSI	*HEP is a habitat-based approach for assessing environmental impacts of proposed water and land resource development projects. The method can be used to document the quality and quantity of available habitat for selected wildlife species. The procedures provide information for two general types of wildlife habitat comparisons: the relative value of different areas at the same point in time; and the relative value of the same areas at future points in time.*	*CoP Preferred*

ERDC is performing the physical modeling to obtain the deviation for the 1.5x draft requirement over the miter gate sill. Their work will be added as an appendix to the report.

7. Factors Affecting Level and Scope of Review

All decision documents are subject to the conduct and completion of District Quality Control and Agency Technical Review. 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.

8. Objectives of the Reviews

Ensure selected models and projected outputs are appropriate for study. Ensure that the study documents and that the conclusions drawn are consistent with established criteria, guidance, procedures, and policy.

Assessing the Need for Independent External Peer Review (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***

Discretionary IEPR

- Has the head of another Federal agency requested an IEPR? ***No***

This project includes an Environmental Assessment, not an Environmental Impact Statement. The MSC commander has not requested an IEPR. Based on these conditions and the conditions described above, an IEPR is not required at this time

Assessing Other Risk Considerations

- Will the study likely be challenging? If so, describe how?
    - The study is being conducted to support commercial transportation on the river. Implementing solutions on the river may cause temporary disruptions to normal activity. Thus, innovation is required to support effective transportation without negatively impacting the industry.

- Provide a preliminary assessment of where the project risks are likely to occur and assess the magnitude of those risks.
    - Outstanding 9-FT channel Operation, Maintenance, Repair, Replacement, Rehabilitation(OMRR&R) dike repairs: There is currently approximately $17.5M of outstanding O&M dike repairs for the 9-FT channel project. We must assume that all parties are maintaining their legal responsibilities, including OMRR&R. Therefore, we are assuming that outstanding dike repairs are complete for the future without project and future with project conditions. Many of the outstanding dike repairs are in the same location as the 12-FT project stonework. The 12-FT project implementation is contingent upon the funding and completion of the 9-FT project implementation is contingent upon the funding and completion of the 9-FT channel dike repairs. Construction for the 12-FT project will not begin until the 9-FT channel repairs are complete. Stakeholders and non-federal sponsors are aware of this risk and are working with Congressional members to ensure funding for the outstanding 9-FT project O&M repairs.
    - We are assuming that the deviation for the depth requirements over the miter gate sill will be approved during the feasibility phase. The likelihood of failing to achieve the deviation is low based on prior deviation approvals and technical expertise. A sensitivity analysis, which was used to evaluate the benefits of achieving a deviation approved for 11-FT draft vessels, was performed. An 11-FT authorized channel would still be economically justified. Anticipated sand mining along the river would potentially compete for dredging resources when the study reaches Pre-Construction Engineering and Design (PED), as well as affect the geomorphology of the river (future with and without project conditions). This poses a future performance risk if increased dredging is required for project success.

- 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.
    - The anticipated activities in this study are not suspected to pose a flood risk; proposed

activities, such as dike construction, etc., are not suspected to have an increased risk in life safety compared to conducting these activities generally. Therefore, a significant threat to human life associated with the aspects of the study has not been identified. Failure of this project would result in "light loading" during commercial transportation of goods on the river. This is not recognized as a significant life safety risk.

- 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?

    - A policy deviation for required depth over the miter gate sill is being pursued.

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

    - The PDT expects to use existing certified or approved planning, hydrology and hydraulics, cost engineering,, and environmental models in addition to existing economic analysis. An economic one time use model will require certification.

- 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?

    - Tribal concerns and issues raised through compliance with 2023 USACE Tribal Consultation Policy will be considered. As currently scoped, there are no direct impacts to tribal, cultural, or historic resources.

- 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?

    - Environmental impacts are minimal to minor. No mitigation is required.

- 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?

    - The project is not expected to have negligible or adverse impacts on endangered or threatened species or their designated critical habitat.

9. Risk Informed Decisions

Targeted ATR. Will a targeted ATR be conducted for the study?

No. Engineering models and results will be reviewed as one submittal as part of a total ATR package.

IEPR Decision. This project does not meet the IEPR mandatory triggers and therefore exclusions

do not apply. None of the triggers for a discretionary IEPR met under ER 1165-2-217, Section 6.5. A discretionary IEPR was not requested by another Agency, and an IEPR will not add value or significant benefit and therefore will not be conducted 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. The decision regarding Safety Assurance Review will be made in PED.

10. 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 Headquarters (HQUSACE) Chief of the Office of Water Project Review. The makeup of the Policy Review team will be drawn from 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 will include as applicable 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.

11. 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.

12. 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."

Appendix A - Brief Description of Each Type of Review

This section describes each level of review to be conducted. Based upon the factors discussed in Section 1, this study will undergo the following types of reviews:

District Quality Control. All decision documents and accompanying components will undergo DQC. This internal review covers basic science and engineering work products. It fulfils the project quality requirements of the Project Management Plan. The DQC team will read all reports and appendices. The review must evaluate the correct application of methods, validity of assumptions, adequacy of basic data, correctness of calculations (error-free), completeness of documentation, and compliance with guidance and standards. Districts are required to check all computations and graphics by having the reviewer place a highlight (e.g., place a "red dot") on each annotation and/or number indicating concurrence with the correctness of the information shown.

Agency Technical Review. ATR will be performed by a qualified team from outside the home district that is not involved in the day-to-day production of the project/product. These teams will be comprised of certified USACE personnel. The ATR team lead will be from outside the home MSC.

Cost Engineering Review. All decision documents will be coordinated with the Cost Engineering Mandatory Center of Expertise (MCX). The MCX assisted in determining the expertise needed on the ATRteams. The MCX will provide the Cost Engineering certification. The RMO is responsible for coordinating with the MCX for the reviews. These reviews occur as part of ATR.

Policy and Legal Compliance Review. These reviews culminate in determinations that the recommendations of the report, as well as supporting analyses and coordination, comply with law and policy, and warrant approval or further recommendation to higher authority by the home MSC Commander.

Public Review. The District will post the Review Plan and approval memo on the District's internet site. Public comment on the adequacy of the Review Plans will be accepted and considered.

Appendix B – Team Rosters

(Delete this appendix before posting the Review Plan on the District web page.)

PROJECT DELIVERY TEAM		
Name	**Office**	**Position**
Sarah (Katy) Breaux	MVK-PM	Senior Project Manager
Barry Moore	MVK-PM	Project Manager
Travis Creel	MVN-PD-PFR	Senior Plan Formulator
David Day	MVN-PD-PFR	Lead Plan Formulator
Grace Bodron	MVN-PDP-F	Plan Formulator
Diane Karnish	MVN-PD-E	Economics Branch Chief
Nathan Pfisterer	CELRH-PX-NC	Economics
Daniel Moore	MVN-PDN-UDP	Chief, Environmental Compliance Section
Taylor Piefke	MVN-PDN-UDP	Environmental Manager
John Underwood	MVN-PDS-N	Cultural Resources
Jimmie Elliott	MVK-ECP-HH	H&H Engineer
Kathleen Harris	CEMVK-ECP-H	Supervisory civil engineer
Tyler Hassell, PE	MVK-ECD-R	Technical Lead
Carsen Cuevas	MVK-ECD-R	River Stabilization (Civil Engineer)
Courtney Gill	MVK-ECD-R	River Stabilization (Civil Engineer)
Will Patterson	MVK-ECC	Construction Quality Management Section
Taft Tucker	MVK-ECT-C	Cost Engineer
Mckinsey Vroman	MVK-ECT-C	Cost Engineer
Kie Simrall, PE	MVK-ECD-GA	Geotechnical Engineer
Ivan Esquilin-Diaz	MVK-ECD-S	Structural Engineer
Richard Jacobson	MVK-ECD-S	Structural Engineer
Eric Sessums	MVK-RE	Real Estate
Matt Clark	MVK-OC	Office of Counsel
Josh Dixon	MVK-OC	Office of Counsel
KC Ellis	MVK-ODN	Chief, Navigation – Monroe Navigation Project Office (Operations)
Leah Deyoung, PE	MVK-ODR-N	Dredge Unit Chief (Operations)
Bill Sisneros	MVK-ECT-G	Geospatial
Noah Sitcha	MVK-ECT-G	Geospatial
John Behrens	INDC	Technical Manager @ INDC
David Lovett	INDC	Technical Manager @ INDC
Austing Spearman	MVK	Cost Engineer

DISTRICT QUALITY CONTROL		
Name	**Position**	**Experience**
Brandon Davis	DQC Lead	15 years of Planning experience having worked as Plan Formulator, Economist, and Environmental Compliance Section Chief. Subject matter expert in Agriculture flood risk management. 14 years of preparing feasibility and technical documents. 12 plus years conducing DQC on feasibility, CAP documents, and economic analysis. ATR certified in Plan Formulation. B.S. and M.S. degrees in Agriculture Economics.
Stephanie Bell, PE	Hydraulics DQC/Hydraulic Engineer/Chief of Water Management	10 years' experience working in Hydrologic and Hydraulic Engineering for USACE with focus in Hydraulic Modeling using HEC-RAS. She has experience performing statistical analysis of H&H data. Extensive experience related to theRed River.
Zachary Lynch, PE	River Engineering DQC/Chief , River Stabilization Section	Zachary Lynch has been with the USACE Vicksburg District since 2014 and currently serves as Chief of the River Stabilization Section in the Design Branch, a role he assumed in 2024. He holds a Bachelor of Engineering from Mississippi State University and is a licensed Professional Engineer in Mississippi. Mr. Lynch has extensive experience designing revetments, dikes, levees, and other bank stabilization and remediation measures along the Mississippi River and its tributaries. He has developed plans and specifications for construction projects, including creating, labeling, and organizing plan sets and modifications. He is Level 2 certified in CERCAP and has conducted multiple Agency Technical Reviews (ATRs) as a civil reviewer for Section 14 bank stabilization and construction projects.
Bob Patev	Barge Impact DQC/Senior Risk Advisor with the RMC	Robert C. Patev ATR Member Risk Management Center (IWR-RMC) Bob has over 34 years of experience with USACE and serves currently as the National Risk Advisor to the Director of the Risk Management Center, US Army Corps of Engineers (USACE). He is the current author of EM 1110-2-3402 Barge Impact Design for Hydraulic Structures and has worked as a designer and ATR reviewer for barge and vessel impact design on over 35 USACE navigation projects and 10 international navigation projects. Bob also has seven refereed journal publications in the area of barge impact as well as being the primary author of the New Orleans HSDRRS guidelines for barge impact. Mr. Patev has two BS degrees (geology and geotechnical engineering) and a MS degree in structural engineering.
Jamon Rucker	Cost Engineering	Jamon Rucker, Cost Engineer in Cost Engineering, Specifications, and Relocations Section with MVK District. Jamon graduated with a Bachelor's degree in Civil Engineering from Jackson State University in 2010 and received his Master's degree in Engineering (Focused in Environmental Engineering) from Jackson State University in 2019. He is a certified Water Operator (Class D) and Wastewater Operator (Class II) in the state of Mississippi. He has 10 years at the State level as an Environmental Engineer prior to joining USACE in 2020. He has over 5 years of Cost Engineering experience. He has been

		involved in numerous civil works projects related to flood risk management, navigation, and operations and maintenance. He was involved as a cost engineer in the Boggs Tainter Gates Replacement, City of Jackson Water Crisis, and other various projects.
Pat White	Realty Specialist	Patrick White serves as the Acquisition and Planning Branch Chief he has over 15 years of experience in the Acquisition of Real Property Rights. He has been in the Acquisition Branch of USACE Real Estate for more than 3 years. He has provided guidance to local Sponsors accomplishing URA requirements required for negotiations and acquisition of various interest in Real Property such as fee title, easements, leases, rights of entry, and permits for federal projects.
Terri Allen	Environmental	Dr. Allen is currently a Senior Technical Specialist (Aquatic Ecology), and was the Chief of the Environmental Compliance Section for the Regional Planning and Environmental Division North located at the St. Louis District from May 2016-July 2024. She has 24 years of experience in NEPA and environmental compliance for most mission areas at USACE; as well as 10 years of experience in aquatic ecology, restoration, and environmental science in private industry, local and state government, and academia. Dr. Allen holds a Ph.D. Degree in Aquatic Ecology from the University of Missouri – St. Louis, a Master of Science Degree in Aquatic Ecology from Florida Atlantic University, a Bachelor of Science Degree in Marine Biology from Florida Atlantic University, is a Certified Fisheries Professional (American Fisheries Society), and has completed all courses for the Utah State University NEPA Certificate Program
Matt Napolitano	Economics	Matthew Napolitano serves as the chief of the navigation section of the Economics Branch Chief in the Regional Planning and Environmental Division (RPEDS), New Orleans District, U.S. Army Corps of Engineers (USACE) with duty station at the New Orleans District. (CEMVN-PDE-N) - 504-862-2445, matthew.p.napolitano@usace.army.mil. Mr. Napolitano grew up in New Orleans and has a Bachelor of Arts Degree (B.A.) majoring in Economics from the University of Pennsylvania and a Master of Business Administration (M.B.A.) from Tulane University. After college, Mr. Napolitano started his career at the Bureau of Labor Statistics as an economist in Washington, DC. In 2001, Mr. Napolitano moved back to New Orleans and began working as an economist in the navigation section for USACE at the New Orleans District. In 2024, Mr. Napolitano became the chief of the navigation section of the Economics Branch in Regional Planning and Environmental Division, New Orleans District. Mr. Napolitano has 24 years of experience specializing in civil works projects focusing mostly on navigation and ecosystem restoration. He is certified reviewer for economics for inland navigation and ecosystem restoration.
Elizabeth Manuel	Planning	6.5 years of experience as a Plan Formulator with the Regional Planning and Environmental Division, South. Experience in preparing feasibility and technical documents for coastal storm and flood risk management studies, Economic Updates, and CAP projects for RPEDS. B.S. degree in Environmental Science.

AGENCY TECHNICAL REVIEW		
Name	**Position**	**Experience**
Caitlin Bryant	ATR Team Lead	Ms. Bryant is an economist in the DDNPCX, Planning and Environmental Division, CESAM. She has over 10 years of experience specializing in Civil Works projects that include DDN and coastal storm risk management (CSRM). Ms. Bryant's current duties include serving as PDT economist on several DDN studies. In addition, Ms. Bryant has experience in the development and application of several USACE models including HarborSym, Beach-Fx, Channel Analysis and Design Evaluation Tool (CADET), Hydrologic Engineering Center – Flood Damage Analysis (HEC-FDA), and the Channel Portfolio Tool. Ms. Bryant is ATR certified for DDN economics and small-boat harbor economics. Past ATRs include San Juan Harbor, Bayou Casotte, Freeport Harbor, Lake Montauk Harbor, Port of New Orleans, Port Everglades, Houston Ship Channel, and Port of Long Beach, and was the ATR Lead for Lake Montauk Harbor, Elim Harbor, Red River Continuing Authorities Program (CAP) Section 107, Morganza to the Gulf, Cleveland Harbor, Port Fourchon, Charleston Marina CAP 107, Illinois Waterway DMMP, and Galveston Harbor Channel Extension. Ms. Bryant earned a Bachelor's Degree in Finance & Economics from the University of South Alabama in 2013 before joining USACE as a Department of the Army Intern
Jemie Debabnah	Hydraulics DQC	Dr. Dababneh is the Lead H&H Engineer at the Inland Navigation Design Center. He has a broad range of experience in project management, leadership, dam safety, risk assessments, dam and lock design, and site development. Dr. Dababneh specializes in hydraulic engineering with focus on hydrology and hydraulics, navigation lock design, gate schedules, spillway design, dam/levee safety and inspection, storm and surface water, flood control, storm surge, tsunami, thermal plume, once-thru cooling systems for power plants, and filling/emptying systems for locks. Dr. Dababneh is the Lead H&H Engineer responsible for developing filling/emptying systems for three locks on the Ohio River. He is also leading the efforts designing the guard walls and cofferdams for these three dams. Dr. Dababneh is also involved in the design of new locks in IL, IA, MS. Dr Dababneh is also involved in the design of navigation projects overseas. Dr. Dababneh has vast experience in national and international flooding regulations and has been involved in siting studies for nuclear power plants in the USA and around the globe. Between 2008 and 2011, Dr. Dababneh was involved in siting of five new major nuclear plants in Pennsylvania, Missouri, UAE, Turkey and the Netherlands. Dr. Dababneh has been involved with post Fukushima NTTF activities related to flooding. Between 2012 and 2014, Dr. Dababneh managed the flooding reevaluations for eight existing nuclear power plants in the USA. As a result of the Fukushima incident, Dr. Dababneh evaluated the potential of "beyond" design tsunami on vital structures in the Persian Gulf as well as developing probabilistic flooding hazard curves for a site in Canada as part of an ongoing PRA analysis. Dr. Dababneh is a published author who not only published in peer reviewed journals but also has published two standards for the global engineering community (IAEA Technical Document; ANS/ANSI 2.8). Dr Dababneh is also involved in authoring a new industry standard for H&H risk assessment (ASME 2.9). Dr. Dababneh serves on multiple

		committees that deal with hydrology and hydraulics. Dr. Dababneh is also a regular technical reviewer on the ASCE Journal of Hydrologic Engineering. Dr. Dababneh presented an approach to develop fragility curves for overtopped levees at the PSA Conference in 2017. Dr. Dababneh speaks three languages. In addition to his degrees in engineering, he has a master's degree in politics and a graduate degree in conflict resolution.
Michelle Kniep	Plan Formulation	Michelle Kniep serves as a senior Water Resources Planner in the Plan Formulation Branch of MVD's Regional Planning and Environment Division North and is located in the St. Louis District. She is currently a Regional Technical Specialist in General Plan Formulation for the Mississippi Valley Division and is a Certified Water Resources Planner. She also serves as a plan formulation subject matter expert for the Flood Risk Management Planning Center of Expertise. She received her Bachelor of Science degree in civil engineering from Washington University in 1997. She has been a study manager and project manager for civil works projects in the flood risk management, ecosystem restoration, dam safety and inland navigation business lines for both Continuing Authorities and specifically authorized projects since 1997
Eric Singley	Economics	Eric Singley is an economist with the Planning Center of Expertise for Inland Navigation and Risk-Informed Economics Division with over thirteen years of experience working on a multitude of high-priority inland navigation feasibility studies. He holds degrees in economics and risk management from Marshall University and Notre Dame of Maryland University, respectively. Additionally, Mr. Singley serves as a Member of the Standing Committee on Inland Waterways Operations & Infrastructure for the National Academies of Sciences Transportation Research Board.
Ashley Stephens	Environmental/Cultural	Ms. Stephens is a community planner for the Huntington District (CELRH). She was over 10 years of experience completing NEPA analyses and environmental compliance reviews. Ms. Stephens is a certified environmental compliance ATR reviewer.
Stephen Potts	Geotech	Dr. Potts is a Licensed Professional Geologist in New York, Tennessee, and Louisiana and currently working as a Senior Geologist for the New England District, Geology Section in the GeoEnvironmental Branch. Dr. Potts has 25 years of experience in environmental and engineering geology and geophysics with USACE and with A/E consulting firms. Dr. Potts is the NAD representative to the GG&M CoP blasting committee and serves as the lead for the underwater blasting technical focus team, providing input to project technical issues related to DERP-FUDS, BRAC, Superfund, IIS, Civil Works, and Dam Safety. Projects cover a diverse range of technical issues related to environmental and engineering geology, hydrogeology, contaminant fate and transport, and risk and remediation. While at USACE, he has worked on HTRW projects, navigation improvement projects, and dam and levee risk assessments and has served on the NAE Risk Cadre. He holds a B.A. in Geology from Colby College; an M.S. in Geology from the University of Massachusetts, Amherst; and a Ph.D. in Geology from the University of Michigan, Ann Arbor. Dr. Potts' continuing education includes Underwater Blasting courses with USACE and the Academy for Blasting and Explosives Technology and

		geophysical studies in conjunction with the ERDC Geotechnical and Structures Laboratory.
Bradley Yagla	Structural	Mr. Yagla is a Structural Subject Matter Expert for the INDC. Duties include serving on independent technical review teams as a structural engineer expert and serving as an INDC subject matter expert for structural layout and design of navigation and civil works projects. Brad is a structural feature lead for the NESP Lock 25 and Upper Ohio Montgomery navigation projects. Before joining the INDC in 2024, he served as the section chief of the Navigation Design Section in the Pittsburgh District for 1.5 years and was a structural design engineer in the district for 4.5 years. Prior to joining USACE in 2018, Mr. Yagla worked for a consulting firm as a structural engineer for 6.5 years with a focus in design and analysis of concrete and steel power plant structures and border infrastructure, as well as seismic and risk analyses. Mr. Yagla has a Bachelor's Degree in Civil and Environmental Engineering with a concentration in Structural Engineering and a Master's Degree in Civil Engineering, Structural Engineering and Mechanics program from the University of Pittsburgh. Mr. Yagla is a registered Professional Engineer in the Commonwealth of Pennsylvania.
Tommy Long	Construction	Mr. Long is the Senior Resident Engineer of the Chickamauga Lock Resident Office. He is responsible for the management of USACE Civil Works construction contracts in the Chickamauga Lock area of the Nashville District to include the $954 million Chickamauga Lock Replacement Project. This is accomplished with a dedicated Quality Assurance and Contract Administration team of 28 engineers, geologists, safety, and construction management professionals. Mr. Long has 30 years of civil site design and military / civil works construction experience. From 2013 to 2016, he served as the Resident Engineer of the Eastern Tennessee Resident Office at the Y-12 National Nuclear Security Administration Facility with responsibility for the Uranium Processing Facility Construction Support Building, Bear Creek Road Phase II, and Site Infrastructure & Services projects. From 2012 to 2013, he served as the Resident Engineer and ACO of the Jacksonville Resident Office with responsibility for the Bartram Island Dredged Material Management Area, St. Johns County Shore Protection, St. Augustine Beach Renourishment, and US Navy Kings Bay Submarine Base Dredging projects. From 2009 to 2012, he served as the Project Engineer and Contracting Officer's Representative on the $89 million Chickamauga Lock Cofferdam, $17 million Gates and Valves, and $14 million Approach Wall Beams projects. From 2005 to 2009, he served as Senior Civil Site Design Engineer at the Ft. Worth District troubleshooting and developing demolition, grading, drainage, utility, paving, erosion control plans and specifications for Tactical Equipment Maintenance Facilities, Medical Instructional Facilities, Warehouses, and various other infrastructure projects supporting Army and Air Force Bases in the Ft. Worth Area of Responsibility. In addition to the above mentioned positions, he has served in USACE as a Project Engineer in Ft. Stewart, GA and Tripler Army Medical Center on Oahu, HI; as an Office Engineer in Caruthersville, MO, TDY as Chief of Integration at Mosul Dam, Iraq, TDY as Chief of Quality Assurance at Wolf Creek Dam, KY, and TDY as Chief of Construction Branch in Nashville, TN. Prior to joining USACE, he was a Civil Design Engineer from 1997 to 2001 with A2H, Inc., in Memphis, TN performing commercial land development and utility design. From 1995 to 1996, he was a

		Construction Field Engineer for the Arkansas Dept. of Transportation with contract administration and quality assurance oversight on a new $26 million section of Interstate 540 near Mountainburg, AR. Mr. Long graduated from the University of Arkansas in 1994 with a B.S. Degree in Civil Engineering. He received his M.S. Degree in Engineering from the University of Arkansas in 2000, with a focus in civil / transportation engineering.
John Cheek	Operation	Mr. Cheek is a registered professional civil engineer serving as the lead operations and maintenance subject matter expert in the Inland Navigation Design Center (INDC). He earned a BSCE and a MSCE from the University of Cincinnati. John has 34 years of experience with USACE. Engineering positions include ORD materials engineer and LRL civil engineer (geotechnical). Operating positions include LRL major maintenance project engineer, floating plant manager, locks and dams operations manager, and repair station manager; and LRD maintenance program manager. John has served on numerous enterprise-wide teams including the HQUSACE Inland Marine Transportation System Working Group.
Karen Orange-Vance	Real Estate	Karen Vance-Orange is a senior Realty Specialist in the Acquisition and Realty Services Branch of the Galveston District. She served previously in the Planning & Appraisal Branch of the New Orleans District. Since 2009, she has served as a Real Estate Planning Project Delivery Team Member for multiple large and small-scale Flood Risk Management, Coastal Storm Risk Management, Deep Draft Navigation, CAP and Ecosystem Restoration projects. She also served as a Realty Specialist in the Acquisition Branch at Tulsa District Real Estate Division and has 20 years combined experience serving as a Realty Specialist. Ms. Vance-Orange serves as a certified Agency Technical Reviewer for Flood Risk Management, Coastal Storm Risk Management, Deep Draft Navigation, Ecosystem Restoration, CAP and Beneficial Use of Dredged Material projects. She has also served as an instructor for USACE Real Estate PROSPECT (Program Management & Control, Civil Works Planning Process (3x3x3), Real Estate Planning and Real Property Accountability and Acquisition 201), and has provided multiple classes for Realty Specialists on the topics of Civil Works Planning & Real Estate's Role, and creation of a Real Estate Plan.
Keith Duffy	IIR Senior Reviewer	Mr. Keith Duffy has worked for USACE for 15 years. He has a B.S. degree from the University of Arizona, in Civil Engineering. He holds up to date professional engineer (civil) licensure in both Arizona and Oregon; current since 2001. He is an active member of the CERCAP HH&C and CPR teams. Mr. Duffy is certified for District Quality Control (DQC)/ATR/Policy and Legal Compliance reviews in climate change and hydrology/hydraulic studies. He works in Portland, Oregon, at the Portland District, Hydrology and River Engineering section. He is currently engaged in H&H and climate change studies in the Missouri, Columbia, and Willamette River basins
Zulamet Vega-Liriano	IIR Junior Reviewer	Mrs. Vega-Liriano is the Chief of the Watershed Section in the Plan Formulation Branch of the Planning and Policy Division for Jacksonville District. She has served in that position since July 2023. She is a certified Infrastructure and Installation Resilience (IIR) ATR Reviewer – Level 2 and recently selected

		as a Planning Essentials (PCC2) instructor. Mrs. Vega-Liriano has over 14 years of experience in the Corps with expertise in Hydraulics and Hydrology, Project Management, Plan Formulation, and Policy. She is currently advising and overseeing Flood Risk Management (FRM) and Aquatic Ecosystem Restoration (AER) projects in South Florida, with limited experience in Costal Storm Risk Management and Deep Navigation as a Project Manager. Mrs. Vega-Liriano current duties include reviews of several projects that have various purposes, including AER, and FRM. She has served in over six District Quality Reviews as a Plan Formulation and/or Infrastructure and Installation Resilience reviewer, like the AER feasibility studies Western Everglades Restoration Project and Lake Okeechobee Watershed Restoration Project, and Post Authorization Change Reports for the Central Everglades Planning Project. Mrs. Vega-Liriano has a Bachelor of Science in Civil Engineering from the University of Puerto Rico, Mayagüez Campus, and a Master of Engineering in Civil Engineering from The City College of New York.
Sarah Auvenshine	Cost Engineering	Sarah Auvenshine has over 20 years of engineering experience and over 7 years of cost engineering experience in Civil Works projects. She has developed and reviewed estimates for ecosystem restoration, flood risk management, recreation, navigation, and dam safety projects. From 2022 to 2024, she was the Chief of Cost Engineering and Specifications section in the Rock Island District. She has been an approved Cost ATR reviewer since 2023. Sarah Auvenshine earned a Bachelor of Science Degree in Civil Engineering from the University of Illinois, and both a Master of Science and a Doctorate in Civil Engineering from Kansas State University. She is a licensed professional engineer in Illinois and Kansas, and she also is a Tri-service Certified Cost Engineer.

POLICY AND LEGAL COMPLIANCE REVIEW TEAM		
Name	**Office**	**Position**
Randy Holder	MVD	Review Manager
Jennifer Chambers	MVD	Civil Reviewer
Steve Hobbs	MVS	Structural Reviewer
Cody Eckhardt	MVD	Operations
Beth Cade	PCX	Sr. Planner/ Inland Navigation PCX
Richie McComas	MVD	Civil Engineer/ H&H
Patrick O'Donnell	HQ	Water Resources Planner
Brian Maestri	MVD	Economics
Nancy Brighton	HQ	Cultural Resources
Justin Giles	MVD	Civil Engineer/ H&H
Brad Martin	MVD	Levee/ Dam Safety
Steve Hobbs	MVD	Structural Engineering
Philip Labarre	MVD	Cost

Chanel Mueller	HQ	Infrasturcture Resilience
James Briggs	MVD	Realty specialist
Nancy Thomas	MVD	Office of Counsel